

Disaster Resilience Design Syllabus

Please stand by for real time captions.

Good day this is the program manager. We are going to start the webinar in about five minutes. If you have logged on to the webinar, there are four questions. Please answer the questions and that is going to help us without webinar. And we will get started in about five minutes. If you have joined us on the telephone please make sure that you mute your line. Thank you.

Good afternoon. I am the education program manager for FEMA. We have a few polling questions, and we are going to leave them up for a moment, so please answer them so that we have a better understanding who has joined us. If you could, please take a moment's to answer the questions, and we will leave them up for a moment before we start the webinar.

Good afternoon everyone. This is Wendy Walsh I am the program manager for FEMA and I want to welcome you to today's webinar. We have a few questions, please go ahead and answer the questions. We have four polling questions that will pop up at the end of the webinar as well. Please provide us with feedback on how the webinar went and if it met your expectations. The hire education program, is to promote the emergency management profession. Two recognize the network. Across the whole academia. We look at improvement, and these webinars are part of the knowledge transfer system. And we have many faculty members who are working with us. And without further ado I want to give you a quick introduction to Dr. Smith. He has a very robust background both in practice and in academia. He holds a PhD from the University of Texas. And he has a Masters degree in sociology. And he is teaching will focus on natural disasters, and climate change he will talk about how we are going to be able to utilize this in our own program, he was a research professor, and the director of the resilient center of excellence. As I mentioned he does practice, he served as the assistant director for the North Carolina division of emergency management. He helped more than 5000, and this helped with the creation of the national management. Following hurricane Katrina, he was part of the office of recovery and renewal. He was part of the North Carolina division of emergency management. He is internationally recognized as a natural hazard disaster and climate expert. He does many media interviews. He does radio and television. And he is going to be here in March, at the workshop that is going to happen here on the 23rd through the 26th. He has published many books, addressing a range of topics. He has a robust perspective. So we are very fortunate to have him with us today. He is also interested in hearing your feedback. But before we get started I am going to turn this over to Barbara, she is going to give us the lowdown on how we can engage.

Thank you Wendy . When you submit a question today we are going to keep track of them and we will try to answer them as we can. Otherwise, we can [Indiscernible- overlapping speakers]

If you look to the left there is a file share. The PowerPoint is going to be located there as well as the document that Dr. Smith worked on, the syllabus for the higher education. The session is being recorded and captioned. And the captioned website is in the lower left-hand corner. If you go there, you will be able to see the captions but you will not be able to see the PowerPoint. And access to the Adobe webinar, and it is being recorded, when you reviewed the recording, you can see the webinar exactly the way it was done with all of the power points. Follow-up with our presenters, we have eight slide at the end of the webinar that will have contact information and information about the education program. And that is it for my part and thank you so much.

I will turn this over to Dr. Smith. The [Indiscernible]

Barbara, I have known her for many years as long [Indiscernible]. I appreciate you giving me this opportunity. I will talk about today, the syllabus. This was supported by Wendy , but the certificate, there is a separate manifestation of this course, and this is something that has been supported through the center of excellence. And also at the department of homeland security. As well as the University of Chapel Hill. And so this funding has allowed me to develop a certificate. I am also developing a new certificate and this is one of the courses to hone in on. I am going to talk about the broader certificate. I am going to talk about the report that was commissioned by the Obama White House and NHS. I will talk about the goals and the objectives, the process that we went through to develop it. I will go over places and so forth. To give you a broader framing of the course and the syllabus, one of the issues that remain long-standing, how are we as an educator, and for the next generation of practitioners? In a way that it is linked to science. And also that it is interdisciplinary and this is something that we are to talk about throughout the presentation. And this was funded through the national training education. And I will talk about the certificate program as well. The class that I will be talking about, I am in the midst of teaching it for the first time at the University of Northern Cal -- North Carolina. This is a great chance for me to get your feedback. What is relevant or what did not make sense or what could be improved? I am so interested in hearing from you. The program, about engineering and design that I am finalizing, from the North Carolina State University. I started last January.

The certificate, is within a 13 credit graduate certificate. I am going to focus on another three credit hours. There is a survey of natural hazards, where we take the case studies, everything from tsunami to extreme heat and you name it. And we do look at the case studies to understand the hazards and apply that into an error yeah, so that we can understand the human part of a disaster. And there is a speaker series, for one credit. We do this around the world. The last two directors of FEMA, and governors that I have worked for, I have a number of experts help. There is six credit hours, and this is electives. This is all about the interdisciplinary issues that we need to talk about. One is public policy. And another is engineering. And this is through the Department of civil engineering. And then we also talk about architecture. So you take the seven core class, and three elective classes that we agree to help run the actual program. So this notion, of this project and the certificate and the course is grounded in a study that I lead. And you can find this on my research website. And you can just Google resilient design education in the United States. We are in the middle of writing an article. It was heartening to see that the Obama administration asked us, what is the status if you will about resilient design education in the US? So we took a look at that. And we defined design fairly broadly. We have engineering, architecture and planning. We interviewed experts in the field. We did extensive searches online. We did case studies. We had an expert panel from academic and practitioner's from across the country. We looked at what is the status of these programs. I am sure that many of you know they are emerging rapidly. There is a rapid movement since hurricane Sandy. But we are trying to understand, where we are, and the status of this program and what are some observations and recommendations that we can make? This is the entire report and I will not read all of it. And this probably does not surprise people, this is the method that we used to collect data. We are trying to develop a resilient design curriculum in the US. It really does require commitment from the University administrators. You are probably like myself, it does take it [Indiscernible] to develop the program. And the idea of developing new curriculum models, is important. To include for example the ability to teach across departments and incentivize students. That it is okay to take classes outside of your home department. And this is where students can be challenged within the department. And to develop the interdisciplinary program. And we also found real value from practitioners. It is so important for the student to go out into the field, go beyond the classroom and go beyond theory. And apply those theories and concepts on the ground. And to look at, what they learned in the field. That could be used to inform or enhance the theory. So that when they go out into practice or if they are teaching that they are [Indiscernible] because they have a better understanding. They have a well-developed plan. It is basic issues and concepts like that. We have identified curriculum, that can be developed right after a disaster. There is faculty that have a willing to do that. So all of these elements. So let's talk about the syllabus, goals and objectives. I am in interested in how we can bridge the gap. How do we take this information and educate the students and apply it to the field, bring it back and analyze the ideas and the issues. And there is realization of [Indiscernible] and we have multiple definitions. And this notion of disaster resilience in academic and in practice. And sometimes it can be constrained by our own disciplines. So we looked at how we can encourage students to think about it, and how to be part of the interdisciplinary problem solving exercise. And I will talk about the exercises in a moment. As a practitioner, and in the private sector, the ability to teach student the ability to understand everything. When I was working in government and the private sector, in the United States, I would argued for those who are interested in teaching national hazard emergency management, they have to understand and empathize. Following hurricane Matthew, we put together a team. And I noticed early on that some of the students were shocked, that the public meetings were very heated. And people were still hurting years after the event. So we need to get the student to recognize or place himself in the conditions of others. And this is going to help them understand the recovery process. And this is all about interdisciplinary problem solving. The syllabus is designed in a way to foster innovation and recognize regulations. I mention this is a broad bullet statement. Designers are trained to think [Indiscernible]. But this may not be legal and if it is not legal what can you do to adjust to the rules? The course is designed in a way to think about how we encourage students to recognize the value of the importance of local knowledge. And how you can convey this knowledge to other government officials as well as the public. One of the grand challenges, how are we going to identify and appropriate design? Who will determine what is appropriate? How do we pay for the designs question and how do we come up with multiple options that policymaker can make? In the past and historically we have looked into the past, to predict the future. Like flood return. How are we going to encourage the next generation to think more broadly? It is increasingly difficult to look at the past to predict the future. We have scenario planning. Looking at design standards. And students are required to figure out what is appropriate and explain why they the the design, let's say for a levy, should be billed the built? And the learning objective is another key thing that I think we need need in literature and academic settings. The notion that literature tells us especially, there is a wide goal in the capacity of local government. We need to look at why they are not doing better at hazard mitigation. Why are there fundamental challenges? How do

low income, high risk communities are going to plan for climate change? And again all of these issues are shown throughout the application, poor policy, engineering and design elements in the case study that we talk about throughout the class. And this is subject to modification to people who might use this material. We have an end of class design. So we will talk about the projects that we prepared. It is rolled up into a class project. It is interdisciplinary and quite complex and I will talk about that in a moment. Interdisciplinary thinking, and the way we can bring in social scientists. How do we only this in practice? And also how we understand resilience. Within the community. And we have to understand there are existing programs. We need to look at the state and local level as managers. And enhance our work for social vulnerability. Even though we are promoting these measures and here we have the overview, and I want you to think about the design and think about the different domains in architecture. The teams are going to look at different scales. It can be individual or it can even be international. But we want to teach the students not only one or the other but looking at the neighborhood community and so forth and how they are nested with each other. And training capacity. How should we enhance the capacity of the community to come up with resilience [Indiscernible]. We have to create a better plan and policies so that the community can become more resilience. Without spending too much time. And recognizing the local conditions. And this can be a barrier. And this is a class project that they can use as a tool. And you can use this in class and a variety of teaching, exercises, faculty discussion and even guest lectures. That I do quite often. And here are the key concepts. I'm interested in the idea of systems of systems at how they are connected. And institutional infrastructure systems, and they are complex but how can they intertwine? And having multiple lines of defense. Sometimes this is something that we do not teach enough. We have to teach students, how to build capacity over time. We need to know what we are learning and what we are not learning. Last week the class was focused on drawing [Indiscernible] for a future disaster. My career I have spent talking or writing about disaster management. I am not a designer but I'm convinced that this is what we should focus on. How can we be more engaged in this effort? I find this time and time again that we do not visualize the policy options. It could be the federal management or international organizations. And the ability to visualize, and look at the options under different conditions. I think this is something that we are not doing adequately. Here we have the exercise and [Indiscernible] and the class project that I will talk about. I have a background in social science. But I think this is important there are reference materials that could be used by students just to get a better idea, for example maybe you are an engineer but you do not know about the policy and you want to know more about it. There are recommended resources and we do have a class discussion. I would like to go over the details. I am not going to read this but it is pretty much straightforward. We talked about the four phases of emergency management and this is something that I still use. And it goes back to the other course that I mentioned if you remember when I talked about the certificates. I think it is important for the students to understand the physical characteristics of a natural disaster and what they are. And understand how to make those choices, that led to this disaster. And understand the elements that can lead to the disaster. And I frame all of this in the course with the notion of the disaster in climate change. So this is a listing of the class exercise. I just want to give you a sense of the class. But these are some of the exercises that we engaged in. For example we looked at the broadest definition of resilience that was written by Prof. David Shaw, who passed away a few years ago. So we actually talk about it from the interdisciplinary standpoint. We talk about the notion of community relocation and resettlement. I have students that will do research, to understand the flood rate insurance map. This is just a sampling of the class exercises. I should be clear, the exercises and meetings and other materials that are in the syllabus are more than you can undertake in one class. Remember that as you go through the slide deck. The instruction [Indiscernible]. These are the case studies. And these are the elements of the emergency management lifecycle. We also talk about other elements that could be important. I think it is important for the student to understand, and we will touch on the work that we did. We also look at things like earthquake design standards. They did change their design standards. And we can compare that with Haiti, that an earthquake [Indiscernible]. So we talk and critique them. You can jump into more detail critique of the ultimate project that was produced. And these are some of the lectures. And this is just good to give you an overview of those classes. We have organized concept, disaster resilient design. What I do is hone in, like in class III we talk about policies. We talk about public policy and agenda setting and those types of things. And the next class we will focus on engineering so folks are exposed to engineering and building codes. What is the benefit cost analysis? This is something that the engineer would understand. You do not need physics or calculus to do that. But the point of this class is to bring all of the students up to a baseline understanding. And you can see class V and class VI, we talked about architecture. If you are not familiar, architecture that is grounded in the environment in which it sets, [Indiscernible]. And this is the remainder of the classes. And here we have the different design elements if you will and training and so forth. After you are provided with all of this information, that is used, I should say the students teams are formed in week two. They are starting to think through the project and the

assignments. They are now in class number nine. We talk about issues and assignments. We talk about in class X, how the design can be used. And students are required to give a design brief that I will talk about in a moment. And there are case studies in class XI. In the case on the class that I am teaching right now we are actually going to Charlotte where they have the most active lead -- flood planning. And so the team will get together, and I will meet with them at the beginning of the class. It is very much similar to a design studio, where they will have time to work together and they will have a team presentation. Class project. And again this is a significant part of the class. We want students to work across these complex issues. Expecting them to apply policy, engineering and design to solve or address a problem. It is not the same as in the design studio. It is not a six-hour credit class. We do more extensive design thinking. And students are expected to draw from the lecture reading and so forth. And these are some of the options. And this semester we are working in the case studies, which is Charleston, Boston and the Outer Banks of North Carolina. We ask how would you relocate Charleston or Boston? Should you do it? How would you do it? How would you apply engineering or design? If you do not think it is appropriate why not? So that is one big project option. The other option, the idea of developing resilient housing options. To think through key risk reduction strategies. How can we improve [Indiscernible] mobile homes? I think we can do better. So the students are charged with coming up with a better solution. And in all of these cases, the design solutions are developed, they have to arguing and talk about if they are legal or are they going to comply with the local ordinance? So how can I modify the existing policy? Again we are trying to break the design with policy and engineering. The third option that the student can consider, the idea of developing a green infrastructure as part of a risk reduction and climate change adaptation strategy. That class that I am teaching right now we are going to focus on the first bullet. We are looking at Charleston, Boston and the Outer Banks of North Carolina. We do have background material. I am going to give you a PowerPoint presentation about the syllabus. And the syllabus is much more detailed than what I have here and that is something I want you to be aware of. And this is also the students are put together in teams during the second week of class. And the instructor has to think about if they have an interdisciplinary class. If not, you need to think about other disciplines. I eluded to the other elements in that other section. This notion of human resettlement post disaster and how you can change adaptation strategy. In the class that I am teaching, for example, how would you acquire the hazard prone housing? How would you do away with the existing infrastructure? How would you convert the land to open space? What would it look like? Would it be a green way? Would it serve another purpose? These are very practical but very challenging issues. Thinking about the notion of what you do this and who is responsible? And here are additional elements that we need to think about. Would you try to do this in a comprehensive way? Would you create a new settlement? Right now the way the program is developed, it tends to be grant graven. So the people are bought out and they are moved somewhere. So in theory this is something that you want to think about, how do you move them to an area that is outside of a high hazard area? We are looking at Charleston. We looked at elevating most of the town but we said, how do you do that? What is the appropriate is out if you want to elevate all of these structures? All of this needs to be discussed and visually depicted. And they are expected to do that in the final class project. We also need to look at housing options. The students will develop, and would you look at housing or should you build emergency housing? And they will be transition into permanent housing. We need to look at the square footage of the population that you are serving. What the structure be permanent or temporary? And so we have all of these issues. What kind of design standards should you use if it is temporary? And again all of these issues, are the kinds of things that the students are asked to grapple with. And housing, like architecture and engineering. How would you do that cost estimation? How would you recognize code or site design or other elements? Would you adopt other elements? And how would that look like? Additional thoughts on the housing options. This is something I want you to think about. Going back in time and exploring what design techniques were used and how they were built in the past. This plays a very important role, recognizing climate and weather patterns. How would it look? How would you show that to an expert review panel? And the third element, for the class project, to look at the notion of green infrastructure. Think about the infrastructure strategy, and another question for the instructor, which you look at small site design or a settlement? How would you look at other issues? And also drawing from the notions of ecosystem restoration. And think about how you would include, in your design options, things like ego development services. So how would you describe that? How would you make a pitch to the local government? For green infrastructure. I do not want students just to think about risk reduction and I want them to think about, things that we do can enhance the resilience when there is a disaster. There are so many benefits. And some people are not taken into account so they are unrepresented. In the other class studies if you will, or the class project, is to think about how your team and solutions will expand the different designs. And here are some examples. Thinking through the development of green infrastructure. Look at things like migration, or how to integrate green and gray infrastructure into the environment? Thinking about, and I

would argue that this is a real gap, and I am hoping, that I will do it and that others will do it, teaching issues of resilience and green infrastructure, and risk reduction in rural communities. This goes back to the theme of the class, recognizing adaptive capacities. And how are solutions should be [Indiscernible]. And so this is something that I alluded to earlier. This is going back in time a little bit. Before the students can start on a class project, it is expected they they do a five minute presentation. We call this the pitch. We do this in class. And they will present to me, the pitch, on what they will do and how they will do it. And they will turn in a one page summary. And I will provide them with feedback. The ability to have a set of concepts, that people who are not an expert will be able to understand. The design community has a five-minute presentation of the class project. I do look at it a little differently from design. So that student team is going to have 30 minutes. But that is at the discretion of the instructor. All of the work predating the final class presentation should be used to inform the final class project. And I should say, they do their own research. And here are some of the guidelines for their presentations. I will not spend too much time on it. But when the student is presenting I do not want them just to think about presenting from designing. I want them to understand the interconnections. And talk through the nexus of the design, policy and engineering. And how these options can be shown visually. And how it can be conveyed to the local individuals who will review the class project. This is something that I am doing. I am going to bring in those who will be the expert panel. I have people from FEMA coming in, state government, nonprofit, I have a colleague who happens to be here from New Zealand. So my plan is there is a interdisciplinary team that is going to be reviewing the presentation and giving my students feedback. And that is it. And that is a quick overview of the syllabus. And the syllabus is much more detailed. And now I am happy to answer questions. I do see that we have a few questions in the chat. So I will try to answer some of them. I am going to turn this over to you, Nancy. Wendy, how do you want to proceed ?

I am sorry I was on mute. I have open up the telephone lines because I know there were people who could only join us via telephone. So let's start with one comment in the chat. Are you looking for additional material? For resources? I will go-ahead and let you answer that.

Thank you. I have a big smile on my face because I like to talk about the course. But I am more than happy to get any material that you pull together. Because there is so much going on. As you know the jargon in the syllabus is constantly changing because terminology is always changing.

Thank you. I did try this link, but it did not come up. And it just came out this past year and I just want to highlight in terms of sharing these resources with everyone. We do have higher education talks in the library and so if you would like please join us. We can always highlight the text. I just want to make sure that we highlight this because it does look interesting.

Wendy, another thought, and it does touch on resilience. It goes back to the White House study that we did, one of the challenges that we are going to face, for example engineering field. It is tougher for students, you know the engineering students, the required classes are so intensive so taking a class, you know a [Indiscernible]. That is a challenge. And the certificate does include engineering and architecture. And this is something that they can take for their discipline. Public policy is not as difficult to encourage students to take these courses. Because in some cases they have more elective courses.

Thank you. Yes it is a very important topic. We talk about how to facilitate this in the academic environment. Because the courses are set up a way in which they are not rewarded for doing that. But if they did participate it would be very enriching.

You have a very interdisciplinary classroom, but was there anything that you did at your institution to make that happen?

We had a lot of interactions, but I did not put a slide in here, when I first came, they help me identify faculty members who were doing work on resilience. I had collected data and I had a great network. What blew me away, in one year, we have identified 250 faculty members that were working on resilience, design and public relations. And so that was helpful because they are telling students about this certificate. And also the development of the certificate and spending time building relationships. I have a point person in each department that will help, you know, encourage students to pursue classes for the certificate.

That seems like a great approach, because it seems like there are so many people who are also looking at making those connections. And this is a system that could potentially be replicated. Do we have any questions from people who are on the telephone line?

I have another one, until we get another question, I want to remind you you can type your question in the chat. For class projects, the options, it is very exciting looking at the community and relocation. When you brief those projects, is there a way that you can share that? Given the background and the history that you have, I can see research to practice opportunity. I am wondering if you thought much about that?

Are you talking about videotaping or documentation?

That could be one mechanism or inviting other stakeholders. You know the direction of the course goes. Maybe inviting them but I do not know but I thought to ask you if you have thought about it.

We are bringing in a team of people that are going to provide an expert panel for review. They are highly regarded experts. They are not only smart but they are decent people but they are tough. But I did not think about bringing this to a broader audience. Maybe I could bring this to an association. That is one option. And another is to videotape it. Everything from publicizing the certificate, I think we can put that online to encourage the students. And let other practitioners know what we are doing and they may in turn, and go back and tell the students. So other communities for example, they can say we would like your student team to come on down to tackle problems.

Thank you. I know coming from a practice perspective, when you started with your presentation, you talked about some of the existing policies and approaches have led to what we do not want. An increase to exposure to hazards and losses. And you never want to hear what you are doing is resulting in [Indiscernible]. I know there is other research that has said that. I think from practice perspective, as other people use this course, how do we ensure that we can in practice provide a solution? Because I think this is something important and we should keep thinking about that.

When relocating, it is important that the community is involved. Because of the attractive location, and that quality of life. And how do we deal with Sue -- human psychology of moving away from their dream location?

The first class we talked for almost an hour, about place attachment. And we talked about why the human settlements are where they are. Even if it is water-based usage or whatever it might be, people like to live close to water. And I understand that connection. And the student teams, will take all of this information, on place attachment and public policy, and how all of that can manifest in a strategy? And in fact I was talking to a faculty member about this yesterday, we call this public interest design. And how the design suggests or recognize the cost, deep cultural attachment to a location. There is no doubt about it. We would require the students [Indiscernible]. So we do expect them to take all of this into account.

Thank you Dr. Susan and thank you Dr. Smith.

How do you apply this to distant learning? You are delivering it right now in a classroom. I know in virtual format it can be a challenge.

That is a great question. For example this goes back to the standards, if the folks in the engineering college, they are very interested in distant learning. They were interested in the certificate. It is meant for graduate students. I am old school so I like face to face. There are other lectures and readings and so forth for distant reading and learning. I do not know of a complex class project that you can do virtually. If this class could be taught, including distant learning, I have to give this some thought.

If anybody has any ideas or experience on distant learning environment please share. I know in engineering there are a lot of remote classes and we were very successful utilizing [Indiscernible], Skype and Google hang out. But sometimes you do have to educate the students on how to use all of that.

I have a comment, I am a student right now. I am at the security program and it is a distant learning program. We are all in the field of security. They did a very good job but it is very hard. Because it is a FEMA program that you reach out to the graduate school. But somehow they made it work but it does take a lot of time. Sometimes they might have to be trained in the systems, but once they are trained they become very comfortable.

Thank you so much. Homeland security, has been working on a master program for many years. We should have a self-study course, that we can use with home line [Indiscernible]. That you can use learning management systems and other options that will help connect people. I think there is a community in distant learning outside of her own academic. We are looking at how we educate the academic community. We are looking at, how do we teach people and how people learn? We have another special interest group, the case study interest group, they are very active in working with FEMA. And they are all about utilizing other cases across the community and interdisciplinary in nature. On how we can create a case study that can be utilized for a class like this. And it is very effective in teaching a certain element. And we want to make sure that we share with each other.

I see that Sue Fisher has a great question. I think it is a fantastic question, emphasizing those with the most vulnerabilities, and my answer is absolutely. My teaching style, is very critical about [Indiscernible] because we cover homeowners but not renters. We have to think about the aftermath after the disaster, and they are not recognized by the government. So we have all of these types of issues that are going to be embedded in our teaching. But I would say, absolutely to answer your question. I could not agree more, not only the idea of the code being a baseline, but we need to look at the upper and lower income because they are different. We also have to talk about knowledge. I am trying to get policymakers, engineers, to think about these topics. That they realize that all of these things are framed within the societal contexts. To the degree on how

it shapes policy. But I cannot agree with you more. And I think it is a very important issue for the instructor to think about. I would talk about specific examples, that I am familiar with, and the way that you can convey that in your PowerPoint. But this is something that you have to think about from an education standpoint for all of us who are developing classes. I think about it and I could talk about the bullet points but another instructor might see the bullet on indigenous knowledge and they may or may not have a detailed discussion. Just thinking about that [Indiscernible] and background material that is adequate. And that is something we should think about.

The woman that post the link to cultural awareness link. I think this is representing a lot of different cultures and vulnerabilities. And sometimes we can look at something that is vulnerable and then on the flipside we can look at its strength. Looking at organizations who are looking at culture, and people living with difference [Indiscernible] like leaving with [Indiscernible] and things like that. And we can provide guidelines. Not only can be utilized by the faculty, but also a great reading for the students. And when they do the projects, are they in aligned with the guidelines? I think that might be a very interesting talking point. And the list of authors who put that together, I think are incredible in terms of reaching out to different leaders and different communities. That is one resource I am sure there are others out there as well.

Just to continue that line of discussion, is there a line of mechanism, let's say I create a PowerPoint and so forth, is there a way for somebody, almost like a mechanism, if someone uses a course and they develop it or they take it. And they have specific examples on the vulnerable population, is there a way they can put it on a system that others can draw from?

Absolutely. On the website we can post material. And people can look at the material that has been provided. And we do make sure it is very generic so people can adapt it for their own use. We can add resources. We can provide links. But we do have to be cautious of copyright and things like that. But if we can share it, we will share it with their broader community. I think we should continue to talk about that because it is a good idea. And that is what we are going to do, we are going to post your material online. An additional resources. We are happy to include those. Maybe we could do another webinar in a year or two, if we have a lot of people who said I have adapted this a curriculum. We can talk about this at the higher education symposium as well.

We can also post the video of the presentations or even screenshots or something like that.

When you post things on a government websites, we need to make sure that everything is accessible and captioned. We also have different communities come together in the region, and they will have a university resource center. I am not sure if you can share those resources?

I will take a look.

Chris asked so a question. Opportunities for certification and professional development for continuing education for resilient workforce or ecosystem. Are you aware of any existing work? Building and sustaining resilience. We have a certified emergency manager, having a competency in resilient education. And Chris if I got that wrong please clarify.

I think it is a good question but I will say, let's go back to the study that we talked about that was supported by the Obama White House and the Department of Homeland security. They quickly honed in on those courses and certificates and other mechanisms that will be developed in the more traditional way. The University of certificates. But we did not look at continuing education credit. But maybe we can look at that in depth. I do know for example engineering and architecture in particular, in our interviews with faculties and others, they said, they are teaching. And of course load is more [Indiscernible] than others. Because they are teaching for the ultimate certification, you know certified engineer. Or what ever it might be.

Barbara posted, for you, who can sign up to be the higher education symposium in June. And Barbara provided a link so that you can access the information. It is open and we do try to foster a good discussion on academic professional development. It does include the practitioner first captain -- perspective. I think it would be great to have you share your book in the library.

I see there is a question from Kevin. And he asked the question about the connection between emergency management and local planners. I consider myself both. I was practicing emergency management, but to answer your question, but yes. There is a lot of material for the course, there is a section on teaching. On how emergency managers and local planners are collaborating. One of the things that we looked at, if you Google mitigation guides, it will have all of our papers and all of the work that we did over the six years. We looked at the degree in which local planners and emergency managers work together. For the development of a hazard mitigation plan. But there is also, in the early 90s, we did a national study of emergency managers and city planners. And it probably does not shock you to say that it was pretty low. But I think they can work together because they have complementary skill sets. Because the planner does have access to tools and techniques and they can systematically reduce future rest. But they have to talk to each other. And those plans, mitigation plans that were led by the local planner were more successful. But to answer your question,

there is material. I think this is another piece, that I think we could do a better job of teaching and encouraging this generation and the next, to get the planners and the emergency managers to work together. One last thing, it seems like there are other points, but if you are not sure if you are emergency manager or a local planner are both, we do have an association that did help form this group. Hazard mitigation disaster planning, it is a focus group, that is formed, to engage more local planners. From the community.

Thank you Dr. Smith I appreciate it.

Christopher asked, is the syllabus available online for the current class? He was not able to locate it. But you can download the syllabus, under the file share. Not the PowerPoint but the other, it is five away compliance. -- 508 Compliance.

Are there other resources that they can find on your website?

The mitigation guide, is not connected to this course are what we are talking about today. It is part of a six-year study, and we finished I think about five years ago. They looked at the quality and sustainability of immigration plan -- mitigation plan. I have a syllabus that I am using for this course and I will send it to you Wendy or Barbara. I am not sure if it is in compliance certain standards but I will send it.

That would be great.

What I have done is tweaked it, because things are happening so fast in the space. And many times I will change the Ceballos -- syllabus during my class. We started talking about Australia, which was not part of the course to begin with.

I put them mitigation guide in the chat. We also mentioned the report of resilient, design and education for colleges and universities. There are five different case studies in that report. I think that is another important resource.

Something else, Wendy, within the coastal resilient center, there is applied research and also a number of educational resources. The certificate that I talk about is funded from the coastal resilient center. There is other funding that will help you develop courses and a certificate. And it may make sense, to connect that information with your operation if you have not done so already. I can connect you with the appropriate people at the center to help. For example the University of Puerto Rico, has the largest Spanish-speaking graduates.

Thank you. Collaboration is always a challenge for us, we need to make sure that we are connecting all of the people. There are so many great people. I know we have made some connection from the folks from the University of Puerto Rico on emergency management. We are also looking at fostering having a minor in emergency development. At the University of Puerto Rico, their planning department, has a bachelors degree, they are looking at raking in a minor for emergency management. But there is a long way to grow. In order to foster that ability. You are so lucky that you identified the faculty that will work together. I think it is outstanding. I would love to see that happening in more places. But maybe it is happening but we are not hearing the stories.

It is connecting with the homeland security, [Indiscernible] will probably connect you with other folks at the center. And when identifying these people, when I came to North Carolina University, the first semester that I was here, meeting people and working with others. And now I have a mechanism in order to do this. But my point is in the university setting, very few places allow the egg back -- allow the faculty members to do that. The willingness of the University, to say okay, for example the first semester I was here I just taught one class and I started to connect to people. We have to think through how to deal with them. What do we do with the faculty members? Because we are going to develop a strategic plan. And we will put together a strategic plan that will deal with education and research and how we can capitalize on all of this knowledge. I look forward to tracking that and observing to. And we are at the end of our time. But this was a great conversation. Susan, wrote, a frustration for us is emergency management practitioner is that while these are great courses and are taught in higher education, emergency management in practice is often given little respect or attention in their institution.

We want to educate the next generation of emergency managers. I know of the community of practice, many folks, and administrators, are working on being more respectful and foster internships at other opportunities. If you have specific frustrations that I can help you in any way or if you know of a specific situation I am here to help. We want to bring people together but it does take a long time in building trust. Just from the folks within FEMA, and emergency management higher education people. And understand that Dr. Smith was a practitioner and was acting Mia. Academia. I do want to work with you and work towards that practice of academic for teaching and working collaboratively. Thank you for your comments. Thank you Gavin for putting this together. You are a gift to the community and I want to thank you for being here for us today. I hope that we will continue this conversation after today. And here is all of our contact information. And here is my email address. We can see how dedicated he is to increasing real brilliance and the ability for us to build an infrastructure that will be lasting. For those who are on Adobe, we do have a few polling questions.

Thank you for answering the questions because this is going to give us feedback which is so important for us. I want to continue with this dialogue because it is very important to us. Thank you and have a great week.

Thank you again.

[Event concluded]