

EPA

Moderator: Karen Scott
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4:00 p.m. ET

Operator: Good afternoon. My name is (Tiffany) and I will be your conference operator today. At this time I would like to welcome everyone to the Greening STEM – Taking Technology Outdoors webinar.

All lines have been placed on mute to prevent any background noise. After the speakers' remarks, there will be a question and answer session. If you would like to ask a question during this time, simply press star then the number one on your telephone keypad. If you would like to withdraw your question, hit the pound key. Thank you.

Ms. Karen Scott, you may begin your conference.

Karen Scott: Thank you (Tiffany). Welcome everybody to the webinar today. Today's webinar is called Greening STEM – Taking Technology Outdoors. This webinar is part of the EPA's Office of Environmental Education's EE in Action webinar series. It's also part of the Green Strides webinar series that's sponsored by the Department of Education. And also, one of the activities that's being sponsored by the National Environmental Education Foundation as part of National Environmental Education Week, which is this week. So this is a very special webinar.

Thank you very much for joining us and we apologize for the technical difficulties we've been having in getting this webinar started. But I think we're ready to have our presenters from the National Environmental Education Foundation take it away for us. And today we're going to be

having the presentation done by Sarah Kozicki, who is the Education Program Coordinator and oversees EE week at the National Environmental Education Foundation. And we're going to be having also presentations from Jennifer Tabola, the Senior Director for Education at the National Environmental Education Foundation.

As the Operator said, after the presentation we'll go right into a question/answer period and we will be taking questions by both phone and through the webinar online. So go ahead Sarah and Jennifer.

Jennifer Tabola: Perfect. Thank you so much Karen. We want to just make sure you all know, who are out there in the audience, that we really appreciate your patience as we work through the technical difficulties. I am going to just give you a brief overview of the National Environmental Education Foundation, where Sarah and I work and where National Environmental Education Week emanates from. Just to give you a little flavor of what we do here and some context for our initiatives this week.

So to begin with, we are the National Environmental Education Foundation. We were founded in 1990 through an act of Congress and we serve essentially as a sister agency functioning as a 501 3 (c) or a non-profit to the EPA. And our mission is to really provide the American public with information and knowledge that they can use everyday to address environmental challenges and to navigate their world and their life with the information they need for a healthier planet and to promote their own health.

I did want to take a moment to mention that we have the great pleasure of collaborating with the EPA this fall to develop an interactive infographic. And it's a really fun tool. If you look at the back pack you can take each of those objects and drive them up into the box and it will give you really shortcuts, a fast way to access some of the key topics that the EPA provides terrific interactive resources on for educators, both formal and non-formal.

And the focus there is on energy, water, waste, air quality and – let me see if there's anything else I missed – yes, I think those are the key topics. And so I

encourage all of you to take a look at that. You can find it both at classroomearth.org and also on the EPA's sites for educators.

In terms of NEEF's mission, we provide knowledge to trusted professionals who, with their credibility amplify messages to a national audience to solve every day environmental problems. So when we were charged with the mission of getting in – education out to the American public, you can imagine that's a very big and mighty mission, and the way that we have chosen to do that is to use a social change model.

It really focuses on providing key information, the latest research and findings to core professionals that really reach big audiences within our country. So in our case, Sarah and I work through the classroom work to focus on teachers and educators who in turn reach millions of students across the country as well as their families. We also work in the area of weather, public land and health; and I'll say a little bit more about that in a moment.

With weather we have a program called Earth Gauge and our job is to work with over 115 meteorologists around the country that work to promote environmental education in their daily weather cast.

So, for example, right now we know we're in April showers season with a lot of heavy rains coming and one of the things that we do is provide weather casters with information, for example, around educating their audiences that they may not want to be putting pesticides or fertilizers on their lawns during the time when there are heavy rains because we know that will go right into the storm water and then out into our creeks, estuaries, rivers and then on into the bay and into the oceans.

So we provide tips and tidbits on a daily basis that help to make those forecasts and weather casts richer and provide people the information they need to make good decisions.

For EE Week we were very excited to partner with one of the meteorologists that works with Earth Gauge and we just did a Google hang out, which is a way to bring a real life STEM educator in the guise of a weather caster in this case, into classrooms across America so that students and teachers could ask

their questions and learn about the work that this professional does to not only provide information about the weather but to also help school us all up around the impacts on the environment that weather has.

Karen Scott: Jennifer?

Jennifer Tabola: Yes?

Karen Scott: This is Karen. I'm sorry to interrupt. But we're being told that the audience cannot see the slides. So I think you need to ...

Jennifer Tabola: If you're – if you're up in the corner of the box it should be the “play” button, it should – if it still says a triangle you're not showing anything but if it shows a square then you should be. So it should be showing your screen.

Karen Scott: Got it.

Jennifer Tabola: Is that right now? It should be on?

Karen Scott: I think so.

Jennifer Tabola: OK. Is there any way you can signal to let us know if that is now working?

(Female): Yes. And you can also look at audience view and see if the audience can see it.

(inaudible).

Karen Scott: It is showing in our audience view. It looks like it is showing.

Jennifer Tabola: Great. OK.

Karen Scott: OK. Go ahead. Sorry.

Jennifer Tabola: OK. Just signal us ...

Karen Scott: Sorry.

Jennifer Tabola: No that's OK. And again, to everyone who is out there with us today, I apologize and we're very happy to go back and share this power point if any of the slides have been missed. So we apologize.

Hopefully you are now taking a look at some images from our public lands program. It may be better known to you as National Public Lands Day, which has been an initiative of NEEF that is now coming on to it's fifteenth year anniversary. And this is an initiative that enlists the help of over 180,000 volunteers around the country to join hands to focus on improving public lands. And that could be a national park, it could be a state park, or local park, even a very small space within an urban center.

And on that day, which is the third Saturday in September every year, we bring together groups as diverse as scout groups, school groups, retired seniors groups from around the country, as well as public land managers, to really help improve the stewardship and caretaking of those public lands.

And just a flash here, we have shifted from just having this annual initiative, to really building the capacity and that's why you see the every day capacity building ramps profiled here. Of our friends groups and volunteer groups that support these public lands places year round, with grants with professional development tools and resources to help them enlist the help of other volunteers. So I hope you will join us this September when we will be out on the 28th across the country and if you are working with student groups or volunteer groups, please check out the site and see how you can be involved.

Here we go. So, moving on, just a brief mention of our Health and the Environment program. I know that all of you out there, who work with students, know that increasingly they're suffering from a variety of chronic health conditions such as obesity and asthma. We know that research indicates that unstructured outdoor activities improve children's health by increasing physical activity, reducing stress and also serving as a support mechanism for attention disorders.

NEEF does a lot of work with pediatric health care providers to prescribe outdoor activities for children and also to connect those health care providers

with local nature sites so they can refer families to safe and easily accessible outdoor areas. So if any of you have interest in that, maybe working with your school nurses, or with other health groups in the community, please get in touch with us, we're happy to provide more resources and information on that front.

Just a brief mention of Classroom Earth, which is our K-12 education initiative. We try to work very hard to provide teachers and educators with an array of resources including EE Week to make it easier for them to integrate and teach about the environment, regardless of what subject area, class level or topic they want to teach about. And we do that through various strategies including awards, opportunities for professional development, national events such as EE Week, demonstration projects, where we try to incubate innovative models and learn what we can and disseminate the results from that, grants both to students and to teachers to support their work either executing environmental projects in their communities or developing lesson plans and activities to integrate into their own teaching and then finally online resources.

So we hope you will check out classroomearth.org which provides a number of the latest resources that we have curated and pulled together, including those from the EPA and other federal agencies to support your work as educators.

And then I just want to go ahead and drop into our focus for the remainder of the webinar, which is really our National Environmental Education Week. And Sarah is going to take over the reins and talk to us a little bit about why we are focusing nationally on greening STEM, science technology engineering and math, and how the environment really can provide a rich portal and a resource to not only inspire students to study STEM, but to really give them an incredible laboratory for applying an array of STEM skills. Sarah?

Sarah Kozicki: Thank you Jennifer and everyone for joining us today. I'm just going to talk a little bit about the background for why we're focusing on STEM and then introduce everyone to EE Week and some great ideas for activities and resources for taking technology outdoors.

So advancing STEM, science technology engineering and math, is a national priority. In order to prepare students for life in the 21st century, it's important to consider the pressing issues that leaders and citizens will face and ways that some are likely to contribute to solutions.

Young people are highly concerned about the environment. And this interest coincides with growth in jobs for careers such as environmental engineers. Even students in non-environmental degree programs are increasingly seeking environmental content relevant to their career paths. While they feel connected and concerned about – I'm sorry – while they feel concerned about the environment, they feel increasingly disconnected from it.

Hands on environmental education projects can enrich STEM learning and offer an exciting opportunity to engage more students in STEM. Environmental learning leads to more enthusiastic learners and boosts critical thinking and creative problem solving skills. When presented with opportunities to learn in an environmental context, students are likely to choose STEM fields as careers.

Last year in 2012, NEEF's kick-off on a multi-year focus on greening STEM, in which we highlighted the connections between the environment and STEM, and learning opportunities for teachers and students.

So hosted by NEEF, National Environmental Education Week, or EE Week for short, is the nation's largest celebration of environmental education held each year, the week before Earth Day. It inspires environmental learning and stewardship among K-12 students. We reach educators across the US with resources for teaching about the environment.

Last year, as I mentioned, we kicked off our Greening STEM theme as "The Environment as Inspiration for 21st Century Learning." And this year, as part of our greening STEM initiative the EE Week theme is "Greening STEM – Taking Technology Outdoors." We'll highlight the unique role that technology can play as a bridge to engaging students in meaningful and hands-on STEM learning outdoors, by meeting them where they are in terms of interest, comfort and ease of use. Tech tools like smart phones can help

young people plug into nature by empowering them to observe and document the world around them.

Our top ten apps for taking technology outdoors, pictured here, provide examples of free educational apps that educators can use to engage their students in the application of STEM skills to environmental learning outdoors.

So now I'm going to turn it back over to Jennifer to talk briefly about our partnership with the US Department of Education on a public service announcement that we did with Secretary Arne Duncan of the US Department of Education.

Jennifer Tabola: That's right Sarah. We are thrilled to be launching this week, a brand new public service announcement that we put together with Secretary Duncan and also the Green Strides and Green Ribbon school initiatives that is being run out of the US Department of Education. And most of you out there, I hope have heard of this initiative. Some of you may be applicants or even awardees.

The Green Ribbon Schools initiative recognizes those leading schools and this year we'll actually recognize and nominate districts from around the country that are really greening not just one school but throughout an entire district. And we know that this is really a landmark that the US Department of Ed has put there in print on environmental education and has really given credibility to not only the importance in terms of environmental stewardship but really from the point of view of academic achievement, engagement as far as students being graduating and staying connected and wanting to come to school and importantly, also the environmental health impact. And really what Secretary Duncan speaks to, and I hope all of you will come to our site and check out this new PSA, it's about 90 seconds long and he does a terrific job of making the connection between STEM education, learning outdoors and real world application of these skills that are going to be the engine for our economic future. So please check it out and also check out the Green Strides and Green Ribbon Schools initiatives. Sarah?

Sarah Kozicki: Thanks Jennifer. The picture here is the new “Tech and Our Planet” infographic, which we released this year in honor of our theme “Taking Technology Outdoors.” Even a decade ago, teachers competed with tech devices for their students’ attention. But now 77 percent of teachers believe using tech in the classroom increases student motivation to learn. At the same time, many educators have said students who spend regular time outdoors tend to be more creative and better problem solvers.

These and other statistics presented here demonstrate how tapping into student interest in technology and the environment can lead to a greener more prosperous future. This (inaudible) infographic takes us on a journey from the prevalent use of technology by young people and the benefits of access to technology in the environment, to the environmental and STEM opportunities in college and careers and how ultimately environmentally literate and STEM savvy students can be leaders in a 21st century economy.

There are lots of ways to take technology outdoors with kids. Mobile devices with access to internet, if only in GPS, make it easy to gather, organize and submit data from observation. There are lots of great apps available that engage students and the general public in citizen science projects like identifying wildlife or monitoring a local water body.

As part of EE week 2013, we’ve compiled a series of case studies from educators and organizations around the country who are successfully engaging students in environmental learning using tech tools.

One of our case studies provides an introduction to QR, or Quick Response Codes, and shows how to engage children and the general public in learning about wildlife in nearby nature. These codes are fairly easy to make and can be placed on signs throughout the landscapes. Visitors can scan the QR codes with their smart phones for access to a Web site or other types of media to learn more about that particular species or habitat. It’s also great for use in gardens like school gardens or community gardens.

Another case study details the project that uses smart phones in a popular scavenger hunt app called “7 scenes” to create an interactive experience for

young visitors at Lincoln Park Zoo in Chicago. Older students developed the scavenger hunt for younger students and in the process learned about and came face to face with endangered species from around the world.

Yet another one of our case studies discusses how to use innovative software tools like i-Tree Design, developed in part the USDA Forest Service to calculate the ecological value of trees in the schoolyard.

Now I'd like to just take a moment and just sort of feature one of our top ten apps that I mentioned earlier. Project Noah many of you may be familiar with, is a Web site and an app that allows people to explore and document wildlife and harnesses the power of citizen scientists everywhere. By snapping photos and uploading them to a mission, a collection of sightings, which are photo submissions, people add to a global database of wildlife information contributing to scientific discovery and expanding their knowledge of their local environment. It's free and easy to use and can provide parents, educators, students, volunteers and citizen scientists with the opportunity to contribute to our knowledge of the diversity of life.

(Inaudible).

I'm sorry. Please excuse us one moment.

(Inaudible).

OK. I'm sorry. I do apologize to those who may not have been seeing our slides progress. We were not aware of this technical error. So I believe that the presentation is now in a host hands. So if we can just move through our slides now, one at a time, that would be fantastic.

If the host could move us to slide 16 that would be much appreciated. Yes, full screen would be fantastic. (Inaudible)

Well hopefully folks can see slide – the next slide. And I'm just going to run with the presentation so as not to keep anyone waiting.

So, I'd like to continue talking about Project Noah. I had just mentioned the app and the Web site. And we have a very special relationship with Project Noah for the past couple years. Last year we were fortunate enough, with support from Toshiba, to partner with Project Noah on a really innovative video using technology to connect students and the environment. And it demonstrates how the students of Islesboro Central School in Maine used technology to document the ecological condition of nature preserves near their school. The students used to "like" Project Noah in order to connect with people around the globe including scientists and actually contribute to local conservation efforts.

And earlier this year in March, we released an educator tool kit as a companion to the video with activities and resources around the subject of wildlife and habitat conservation to help support educators and implementing a project similar to the one featured in the video. The video can be viewed on You Tube; it's at the NEEF USA's youtube channel. And if you simply look for "Using Technology to Connect Students in the Environment" it should come right up. It's a really great piece. It's a great case study on how technology can really help students connect with the environment and contribute to scientific data on a global scale.

Now I'd like to move on to my next slide where I'm going to talk about a few apps that we just like to call out and highlight. Beyond Project Noah there are lots of great mobile apps for environmental learning outdoors. And additional recommendations can be found in our top ten apps, which I mentioned is available at eeweek.org.

Here's just a few more I'd like to talk about. "What's Invasive!" is a great app that helps local scientists locate invasive species by making geo-tracked observations and taking photos. So students and educators and citizens can help scientists locate invasives, which are a big threat to our native habitats.

iNatural, it's there at the bottom, is similar to Project Noah but it actually allows folks to record their observations. And so it's somewhat like a digital nature journal, which is a great experience and really can help young people connect to their natural environment.

And then Leafsnap, which may not be available for our listeners out West but will be shortly, is a great mobile app that uses visual recognition software to help identify tree species by photographs of their leaves. So it's very cool. And that's currently available only for iPhone and iPad but all the other apps on – that we mentioned and on our list are available for both iPhone and Android and they are free.

So next slide. So each year EE Week provides (web attends) with certificates of participation and free online resources as well as information on professional development and funding opportunities. And a lot of the resources that we produce take the form of educator tool kits, webinars and infographics as you've seen. And part of our theme this year will be growing the – will be highlighting growing opportunity to engage students in learning about our environment with new technologies that enable scientific research and develop 21st century skills.

Our 2013 educator tool kit highlights a variety of educator resources for utilizing technology to engage students in outdoor learning on behalf of our taking technology outdoors theme. And like all the resources that we provide, this is free and it's a downloadable PDF available at eeweek.org.

Next slide. Each year we host a series of free educator webinars with partners, like the one today, based on our annual theme. And in celebration of "Taking Technology Outdoors" we hosted three webinars prior to today on a variety of topics relating to technology and the outdoors.

Our first webinar was the Pacific Education Institute explored how to use technology to engage students in investigative outdoor field experiences. While our second with National Geographic and Esri focused on the geography connections and using tools like GPS and GIS to connect students with citizen science projects in their communities. And our third and final was co-hosted by Green Teacher and featured the Island Institute out of Maine and their strategies for integrating and applying technology with community based environmental education programs. So all of these webinars are

available – archived and available for free at eeweek.org so they're great to go back and watch and learn from as well.

Next slide please. And as we wrap up here, I'd like to remind everyone about opportunities to continue to engage in EE Week this week. EE Week runs through Saturday, April 20th, right before Earth Day. And we look forward to continuing to engage educators year round. And one opportunity is the photo contest which runs through May 31st and it's open to educators who'd like to share very engaging and inspiring photo of how they're engaging their students in environmental education. And so we've already got some submissions and you can see winners from past years. Very exciting to have people send in their photos from around the country and to learn about their activities and to see some of these great shots of students in action.

I also like to remind everyone that our continued relationship with Project Noah affords another opportunity for those of you who may have photos of wildlife near your school, from the school garden, the outdoor classroom, the local park that your students or you have taken, you can upload those to Project Noah's global schoolyard BioBlitz "Mission" at projectnoah.org and you – if you contribute now through the end of May as well you have the chance to earn this commemorative digital patch featured here for EE Week 2013. And you can collect lots of different patches on Project Noah's Web site depending on what types of photos and missions that you can contribute to. So that's a good – another great opportunity there for educators.

Next slide. So finally, we've talked a lot today about taking students outdoors and getting them engaged in nature outdoors. And we know that not all teachers will have this opportunity and so we can also bring the outdoors to us, to our classrooms through the use of technology.

And so one great example are the Distance Learning Adventures provided by the forest service and partners. And these allow us to use cutting edge technology like video, video calls and live streaming events to allow us to learn more about nature like pollinators and (bats) and wetlands and bringing those into the classroom. And students have the opportunity to submit their questions to scientists ahead of time and have their questions answered during

a live broadcast. So that's just fsnaturelive.org and I encourage everyone to check that out as well.

That's all for me today. I will hand it back over to Karen to handle questions. We'd love to hear from you and hopefully we can answer your questions today. And feel free to get in touch with us; our information is provided on the slide and we're also on social media as well. So we look forward to hearing your questions.

Karen Scott: Thank you Sarah and Jennifer. And again I apologize to the audience for all these technical difficulties; these were unforeseen obviously. And I just wanted to ask the operator if you could prepare the audience for asking questions through the phone? And hopefully we'll be able to access the questions that come in through the webinar as well.

Operator: At this time I would like to remind everyone, in order to ask a question please press "star" then the number "1" on your telephone key pad. We'll pause for just a moment to compile the Q and A roster.

Karen Scott: And in the meantime, Carly, are you online?

Carly Carroll: Yes, I'm here.

Karen Scott: Do you see questions coming in through the webinar?

Carly Carroll: So far we've gotten questions about if the slides will be archived. We know that there were problems with advancing the slides. So they want to know if it will be available.

Jennifer Tabola: We plan to have the slides available on our Web site eeweek.org/webinars will take you to the list of our archived webinars and they'll be available there.

Karen Scott: Great. Thank you. I think we can probably post them on our site as well if you – if you want us to.

Jennifer Tabola: Absolutely. I'd be happy to send them over.

Karen Scott: OK. So we will get them posted on epa.gov/education as well. And so (Tiffany) do we have any questions from the audience by phone?

Operator: Yes. Our first question comes from the line of Douglas Palenshus with Washington Department of Ecology.

Karen Scott: OK. Go ahead.

Douglas Palenshus: My question is regarding the apps. I understood they were available to work with iPhones and I'm curious to know if they will be available under Windows Mobile operating systems.

Jennifer Tabola: Uh-oh. You might have stumped us. We thought we had our bases covered with Android platform and iPhone platform but that is such a new one I can't honestly say we know yet. But it's a great question and we're sure that is going to crop up more. So we would be happy to do some research and get back to you.

Karen, because I'm sure that will come up and that might be something we could share out also on social media so it's a great question.

Karen, is there a way for us to respond to answer it afterward through your platform?

Karen Scott: I think we can figure out a way to do that. If the person who just asked that question, if you could send me that question to scott.karen@epa.gov I'll make sure that we respond to you with a question and maybe can figure out a way to put the – some of these questions and answers on our “EE in Action” page at epa.gov/education.

Jennifer Tabola: Technology is a constantly evolving and moving target and in fact (Barry) just went back recently even though we just published this tool within the last few months to make sure that all of these apps were still valid and they're constantly being updated and improved. So, - but thank you for your question.

Douglas Palenshus: Nice tool. Thanks.

Karen Scott: Thank you.

Operator: Again, if you'd like to ask a question, please press star one.

Karen Scott: In the meantime, Carly, do we have anymore questions through the webinar?

Carly Carroll: Sure. We have a question that says are the curriculum guides available on paper form also? And if so, how do they obtain them?

Jennifer Tabola: So we've put together, as I've mentioned, tool kits which are simply a compilation of suggested resources and activities. And these are available in the form of PDFs online so you can easily download them, they're freely available, and print them out. So we don't send any hard copies out; we try to make them as widely available to folks virtually as possible, so that folks around the country can have a quick and immediate and easy access. So if you check out eeweb.org you will find links to be able to download those.

Karen Scott: Great. Thank you. And operator, do we have anymore questions from the phone?

Operator: Our next question comes from the line of Denise Lumpkin with Moraine Valley.

Karen Scott: Go ahead.

Denise Lumpkin: Hi. It looks as if the resources that you've provided are for children K through 12, do you have anything for preschool age children?

Jennifer Tabola: That's a really good question Denise. We really focus most of our resources primarily on school age. But I do think that some of these – you know I have kids who are fairly recently in preschool and I keep in touch with their director and I know that they are using Project Noah as an example because it really is so simple. I mean if you have a smart phone or even just a digital camera, you know, having the kids go out with a little supervision and snapping some photos. What's really great about this is the – both the facilitator nor the student or the child really needs to know anything about the species because what happens is when you upload your picture, and say its as

simple as a grasshopper, but you want to know specifically what kind it is, that information is (cowed) for us. So you will get responses not only from the United States but from all over the world and eventually, similar to the way Wikipedia works, it will hone in on the answer on what that species is, what it's range is what it's characteristics are all those things you can access. So some of these are, you know, working with an adult I think even for preschool they can create their own mission for the preschool and for example document and take pictures of what are the creatures, the flora, the fauna the insects around their school and really create a scrapbook. So I think some of those really lends itself to pretty basic activities. I hope that helps ...

Sarah did you have any of the other apps that you think could also be utilized in a fairly simple way?

Sarah Kozicki: I'm not sure about what the other apps might be. A lot of them use the simple snapping photos and getting connected with an international group or database. But I would say that we do, you know, include lots of resources for kindergarten through second grade as well. That some of those are definitely applicable or can be modified to suit pre-K students but we do not have any specifically for pre-K. so definitely I would go through our collection of resources and see what might be there that can be (applied) for younger students.

Denise Lumpkin: Thank you.

Jennifer Tabola: So another thing came to mind that's not on our Web site. Journey North, I'm sure many of you are familiar with, and that's something where you can engage students in planting, you know, bulbs students of the previous year, you know, tulips and then when they bloom you just, you know, upload into the program the date that you start to see them emerging and when they go into full bloom and then it actually depicts a picture nationally of how – where spring is emerging and allows you to see that over time and it's a highly visual resource that kids have a lot of fun with.

And I think even preschool, you know, they can take a look and say "Oh look, you know, we – spring is – we – our bulbs are not sowing yet but look down

in North Carolina, South Carolina, you know, they already have full bloom, you know, we're here in Michigan and we don't even have green sprouts yet.” I mean there are really interesting ways you can use that visual to show them how seasons don't hit, you know, the country all at once. It's really gradual. So that's another resource you might want to check out.

Denise Lumpkin: All right then. Thank you.

Karen Scott: Great. Thank you so much for the question and the answer. Do we have another question online Carly?

Carly Carroll: Yes we do. Do your efforts include supporting marine based environmental education programs?

Jennifer Tabola: Well, interestingly we – a couple years ago EE Week is an annual theme and as I mentioned, we recently started a greening STEM initiative last year. The year prior to our theme was “Ocean Connection” where we focused on everyone's connection to the ocean no matter how far away from the coastlines they may be. And we have a lot of great resources still on the web that focuses on marine science and ocean conservation topics that are still available to anyone that can visit the Web site.

And just generally speaking, you know, EE Week we work with so many partners – local, regional, national, non-profit, federal agencies, state and local agencies – and every year we have lots of folks who manage marine resources as well as land based resources – parks, nature centers and the like – along with all of our fantastic teachers, educators who register with us on behalf of their schools. So there's a lot going on and there's a lot of folks participating in EE Week in different ways and you can get a snapshot of who all participates on our Web site and there's lots of great resources and also success stories of folks with more of a marine or ocean based theme. So definitely check it out.

Karen Scott: Great. Thank you. Can we get one more question – are there more questions on the phone? Phone line?

Operator: Yes. Our next question comes from the line of Wade Parsons with Grand Staircase Escalante.

Wade Parsons: Yes. I was curious, have you guys aligned a lot of your materials with the standards and objectives that are required for teachers in the various States? I mean how have you covered that particular aspect of providing what teachers need in the classroom?

Jennifer Tabola: I'm really glad that you asked that question because we know how difficult it is for teachers to integrate new material. And we know that in most cases they are responsible for really covering those standards that are going to be tested so we really exclusively tried to curate and pull in those resources that really meet two criteria. One, you know, that they are grounded in credible science and that they are free of an agenda or any particular political or advocacy bent. And two, that they are aligned with teaching standards. And we know that there are state and national standards but we work really hard to make sure that we make it easy for teachers by choosing those resources that are aligned.

Sarah, do you want to say more about that?

Sarah Kozicki: Sure. We, as Jennifer mentioned, cultivate resources from folks like EPA, National Geographic, Discovery Education to try to fit means in lesson plan development and we do try to ensure that they are tied to some kind of set of standards whether it's for a particular state or national. We do recognize and try to pull out the similarities that the particular state let folks know that there are lots of similarities (inaudible) lots of ways that they can modify the standards – the objectives to their – for their own. So we definitely make sure there's a connection there and we call it out so folks know what it is. And if it's specific, geographically specific, we help folks out by letting them know how the standards can be modified to meet their needs. So, yes ...

Wade Parsons: So you ...

Sarah Kozicki: Go ahead. I'm sorry.

- Wade Parsons: So you have, for example, you said you called out what the standards and objectives are that are being dealt with in a particular lesson. So if a teacher say in Utah was looking at a lesson, they might be able to go OK this is addressing standard one, objective two or whatever. It's not surely, it's not that specific.
- Sarah Kozicki: Well, you know, as you mentioned, we're kind of an aggregator. So we always try to link directly to that lesson plan and they will tend to have a specific standards actually yes, listed out. Often times by number but hopefully what we try to mention is that if it is that specific, that it's probably very similar to a standard that you have to address in your state and to make sure people know that they can actually address standards using these lessons in their classrooms.
- Jennifer Tabola: I think a good example of that, if you look at the tool kit that was put together this year for EE Week on "Taking Tech Outdoors," Sarah worked really hard to pull out lesson plan activities, resources that really aligned with a lot of the STEM education skills. So it would help teachers who are looking to apply math, science, technology opportunities, presentation opportunities, design et cetera.
- Wade Parsons: OK. Is this in anyway kind of linked to this next generation science standards that's coming out?
- Jennifer Tabola: Not yet. We have not yet cross-walked, you know, what we're putting out with the actual next generation science standards. I think they're in their final rounds of review and approval. And once those – once it has worked it's way through that process then we will in fact work hard to make sure that we help teachers flag where there are opportunities to meet those national standards through these various lesson plans and activities. It's just a little bit ahead of the curb yet.
- Wade Parsons: OK.
- Jennifer Tabola: With that said, I will say that, you know, I think we all know the environmental education opportunities mainly, strongly align with much of the material and really the hands on approach and experiential bent that you'll

find in the next generation science standards. So Sarah mentioned the webinar we did on field investigations using technology as an example. In the next generation science standards are really about trying to get students into the same sort of settings and using the same sort of tools and practicing the skill sets that scientists, engineers, technologists are using in the workplace and giving them that experience early. So I think you'll find a lot of intersection with environmental education and next gen science standards.

Wade Parsons: One other question I had was, you know, I – you're using smart phones. How do you get those into the hands of the students? You know, if you're coming from an area that, you know, maybe is not that sophisticated technologically, although it's kind of hard to imagine, but I mean let's just say you're working in a poor neighborhood somewhere and nobody, or very few people have smart phones, I mean what – how do you get your technology in adequate numbers into the hands of students?

Jennifer Tabola: That's a great question and it's a big topic for discussion at the moment as we're seeing more and more technology incorporated into classroom learning. And there are several different ways that it can happen. There's – some folks are advocating for having kids bring in their own devices. Many kids – many students do have, increasingly so many young people do have, smart phones of their own; or having them be able to bring in a family device.

And then, you know, there's other ideas that it'd be the teacher. So simply just having one or two or a few devices that students share on, whether that's a smart phone or an iPad. And we recognize how difficult it can be to get a hold of some of these cutting edge resources because of some financial constraints for a lot of school districts and so there are a lot of ways to go about that. Whether it's support – drawing support from the community from parents who are really eager to have students be on the cutting edge of technology and learning. Or whether its applying for a grant or competing in competitions where, you know, they have the opportunity to win some of these tech devices for their classroom by demonstrating their commitment to environmental learning.

And we cultivated also opportunities for grants and award programs on classroomearth.org which is our K-12 education program here at NEEF. So we always encourage folks to visit us online to learn what may be timely, relevant, what's available now, what the deadlines are to help folks get the resources they need to support these kinds of programs.

Wade Parsons: Now what was that Web site again that you just gave for grants?

Jennifer Tabola: That's classroomearth.org. And that's our main K-12 education program. So ...

Wade Parsons: classroomearth.org.

Jennifer Tabola: Yes sir.

Wade Parsons: OK. And that's for grant funding?

Jennifer Tabola: Well we – that's where we have kind of our overall database of resources and grant award opportunities as well as professional development opportunities for educators.

Wade Parsons: All right. Thank you.

Jennifer Tabola: Another resource for you to look for, you know, for ways to address that digital gap or tech gap, as Sarah said on our Web site, but also our news letter we do try to provide out the current funding sources that are out there from all of our partners in the environmental education and some education fields. And we do recognize that with this theme, you know, we talked a lot about that there is an equity issue, an access issue and at the same time there is such tremendous growth that we do our looking, you know, we do try to highlight the resources when they're out there.

Wade Parsons: Well you got to start somewhere. I mean you know and so and out here where I'm at, we have been able to obtain grants to get GPS in a full classroom set and so we can begin to teach GPS and GIS technology in the classroom. So yes, grant funding would probably be a good way to go with this through are partners or organizations of some kind.

Karen Scott: Yes. Thank you. These are great questions. And I'm wondering since we're after 5:00 o'clock now, Sarah and Jennifer, do you want to just take one more question if it's real quick or should we wrap it up and let people send you any further questions through e-mail?

Jennifer Tabola: You know I think in light of the delay, if somebody has a pressing question they'd like answered in the here and now, we're very happy to do it and we will certainly follow-up with any questions that come after.

Karen Scott: OK. So let's take one final question. Carly, do you have any on the webinar or should we go to the phone?

Carly Carroll: Let's go ahead and take one from the phone.

Karen Scott: OK. Operator, do we have another one lined up on the phone?

Operator: Our next question comes from the line of Don Duggan-Haas with PRI and it's Museum of the Earth.

Karen Scott: Go ahead. Don?

Don Duggan-Haas: (inaudible).

Karen Scott: Don?

Don Duggan-Haas: (inaudible).

Karen Scott: We can't ...
(inaudible).

Karen Scott: Don?

Don Duggan-Haas: Yes. Hi. I hear you. You can't hear me. Hello?

Karen Scott: Now we can.

Don Duggan-Haas: There we go. OK. Well initially I just had a comment that next generation science standards were actually released a week ago today so

they're up at nextgenscience.org. Although they're not 100 percent complete, they're mostly there and this stuff does resonate very well with that. And I'll also note on the question about funding and poor – you know, low income schools, can often get lump sums and other funds for technology in the classroom and things that work on iPhones also work on iPods, typically. And so classrooms that have iPods will probably run the same as the classrooms with a GPS units for running most of the apps that you're looking at. So I guess I don't really have a question I just have a comment.

Karen Scott: Well, great comments. Thank you. OK. So do we have maybe another quick question on the phone?

Operator: There are no further questions via the phone line.

Carly Carroll: Karen, we have one last one through the Web site – through the web ...

Karen Scott: OK.

Carly Carroll: It said, you may have answered this, but our programs currently do not use much modern technology; if we wanted to start moving in this direction, which Web site would you recommend?

Sarah Kozicki: Well, so we mentioned classroomearth.org where we compiled kind of up coming and available opportunities for teachers to apply for grants and awards, you know, through other organizations. So that's a great place to start. And I think from there you link out and branch out to learn more about what else is out there and available to educators. So definitely give it a look. There's often more than folks realize that's available to them and we hope that educators, especially classroom teachers, all have the opportunity to take advantage of the use of they come since we know that resources are needed.

Jennifer Tabola: And as Sarah mentioned, the webinars that are archived that we did really illustrate and I think provide some great case studies resources tips and tricks for how folks who are pioneers in using technology and integrating it with the environment are really creating a new learning experience for students and I think they're very persuasive in describing how this technology can be a bridge to bring kids out and connect them with the environment who may not

have otherwise been very interested. They're interested in their technology not so much the outdoors but if you can create ways for them to bring it out and use it as a tool as a resource a scientific gadget you know to be able to interact with the outdoors in a different way, it actually can help them to connect and we hear so much about kids being distracted and the need to unplug it's an interest twist but it's another way to engage the digital generation in the outdoors. So we hope those will be useful to folks who you're just starting to get your feet wet in this new frontier really.

Karen Scott: Great. Well thank you so much for the great questions everybody and Sarah and Jennifer for your presentation and your great answers to all these questions and thank you everybody for your patience with us and our very troublesome technology today. We really appreciate your all hanging in there and we hope you join us for our next webinar. Watch our Web site epa.gov/education for announcements of more webinars in the EE in Action webinar series. And do go the National Environmental Education Foundation's Web site, I believe that's neef.org, to see what's going on with EE Week as well.

Jennifer Tabola: Thank you so much Karen and we really appreciate the opportunity the EPA has provided us to reach out to your audiences and also the green strides initiative through the U.S. Department of Ed and that is www.neefusa.org and happy national environmental Education Week everybody. Thanks again for your patience and your participation.

Karen Scott: Thank you.

Operator: This concludes today's conference call. You may now disconnect.

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