Speaker Mike Slimak:

Thank you Lisa, and thank you all for dialing in, tuning in, however you're reaching us today. I'm physically located at EPA's research facility in Research Triangle Park, North Carolina. It's a beautiful day here in the spring. I know some of you are from parts of the country where we're having tremendous amounts of rain, so we do see variability in climate across this country and certainly in the weather. All of that really leads in to what I want to say about communities. The theme we work with is that you are where you live and that communities matter. We know that we all work on a number of environmental problems, many of these problems are global, national and regional in nature.

What we are seeing is that the impacts of these global scale are really experienced more acutely at the community level. Communities from our perspective at EPA are a real unit of study, especially as we better understand the social determinants of public health. Communities have been an EPA priority for years, and continues to be a priority. Interestingly that when you think of sustainability and the path towards sustainability, we think that communities are the appropriate level of governance to achieve sustainability.

We know there are many community types, and that community type may be an important variable to understand. We know that geography among communities can be quite different. We know that Denver for example is different than New Orleans, and does that impact how we understand the path towards sustainability? We know the economic base of communities is different, the industrial versus the service orientation. Certainly we know that communities differ in size and in areal extent. We also know that educational levels are different among communities, and we also know that the infrastructure situation is different, especially in the older communities compared to the newer communities. We also know that communities' capabilities vary, the amount of expertise within the community in terms of environmental issues. We also know that as we adapt to issues such as climate change, much of the adaptation will occur at the community scale.

I say all of that because EPA's Office of Research and Development has invested in what we call community-based tools to basically take what we have been working on for many years, which are national and regional tools that model the air environment and the water environment and downscale those tools to a community level, to a neighborhood scale if you will. One of those tools that we've been working on for years and we hope to release in the next few months is the Community-Focused Exposure and Risk Screening Tool, and which we have an acronym for of course called C-FERST, and that is what we will present to you today. I will now turn it back over to Lisa Matthews, and again, thank you for participating.

Speaker Lisa Matthews:
[Brief Noise Interruption]

I'm pleased to introduce Jim Quackenboss. Jim is an environmental scientist in EPA's National Exposure Research Laboratory. He is located in Las Vega, NV. Jim is the technically lead for C-FERST, and Jim thank you for walking us through this presentation this afternoon.

Speaker Jim Quackenboss:

Thank you Lisa and thank you Mike for setting the context here in terms of the focus on communities, and how we can work with communities. They can gain input and useful information and data from some of the tools EPA is currently developing. As Mike mentioned, one of these tools is Community-Focused Exposure and Risk Screening Tool. First thing is to help you understand what C-FERST is, so I'm going to cover a few background slides here, and then I'm move over to a demo of C-FERST to show you a few of the functions and features. Then I'm going to come back and give you a couple of examples of how it is currently being used in a couple of EPA's regions where we're working with communities. C-FERST is an online tool that's been under development for a few years now. We are currently updating some of the datasets and functions in C-FERST before we release it publically. It's basically intended to help empower communities with information and give them some guidance in terms of a structured process that they can use or that you could use in working with communities to help clarify issues that they are facing, help gather more information about those use and then develop what might be options for possible solutions.

So there are a couple of roadmaps that we currently have in C-FERST, shown in a figure here - one is the CARE Roadmap which is developed in a number of communities under EPA grants. The other one that might be a little more familiar to the public health communities is PACE-EH, which stands for Protocol for Assessing Community Excellence in Environmental Health and that one is developed by NACCHO National Association of County and City Health Officials and CDC. Basically C-FERST is helping to provide this information in what we hope is going to be a user-friendly interface. It includes GIS maps, community reports and information about a variety of different issues. It helps to address a number of challenges and needs that were identify by the National Research Council in looking at what is the future for looking at risk in communities as well as groups that have advised and looked at EPA's Environmental Justice Programs. It also provides an opportunity or a way for us working with the scientists at EPA and especially within the Sustainable and Healthy Communities research program that Mike is leading to try to translate some of that science into information that can be used by communities.

Why did we develop it? Basically there are a lot of issues and concerns that are impacting communities. There are potential solutions for these, but people may not know about them. They may not know about work that's being done in other communities that are facing similar problems. One of the basic problems that everybody I think is facing is that there are not enough experts, there's not enough staff for you to be able to evaluate every situation. Some of the communities are facing limited resources and limited access to information, but at the same time are experiencing disproportionate impact. Some of the intended users for C-FERST we see as being state and local agencies, especially public health and environmental agencies, within EPA community involvement and Environmental Justice coordinators. Community groups may want to use and follow some of the community guides to self-organize as teams and be able to look at the issues that face them. Academic institutions are becoming more interested in using this as a teaching tool and as a way of raising environmental awareness in youth and younger students. Finally, once this is made publically available, then the general public would have access. I've mentioned using the guides. Another way this could be used is a tool as a way to build partnerships, between the government sector, academic sector and communities to help work with them to identify issues, collect information and develop options for solutions.

As any tool, it has certain limitations. C-FERST is built based on nationally available and nationally consistent databases and models that has some implications in terms of what media are represented. For example, there is more air data that is collected nationally than there is soil and drinking water data. The spatial coverage may be more focused on areas that are large and populated than rural areas, and because we are looking at data that may be collected by and reported by the states or other agencies, there may be some differences in the way data is collected and the way it is being used in some models. So these are just some fundamental limitations we wanted to point out to you. The other thing we wanted to mention is that while C-FERST is a risk screening tool, it's presenting risks, rates or estimates that have already been calculated in this case from the National Air Toxic's Assessment. We are not calculating or recalculating those or modifying risk estimates. So we are basically recommending you could use C-FERST for screening but that additional data or information are needed to help characterize those risks more fully, and to make decisions about environmental public health.

As I've mentioned some of the limitations, I wanted to highlight what are the data in C-FERST. Some of the current data sources include things link EPA Regulated Facilities. I'm not going to read through all these, but some of the names or acronyms are here and then we've tried to define those a little better in terms of are those Brownfield sites, Superfund sites, Solid Waste, National Air Toxics Assessment. We have been waiting to release C-FERST until we have and have incorporated the new NATA, which is the 2011 National Air Toxics Assessment, which will provide us information on concentrations, exposures, and cumulative cancer or non-cancer risks for selected pollutants. Water quality - there is some information out there but it will largely be again the information collected on a national scale. We will be including the latest information available from our Office of Air Radiation Particulate Matter and Ozone. There's information here in terms neighborhood or tribal boundaries, schools location database, demographic information from the American Community Survey, Traffic Counts, and then the Smart Location Database, which includes information that may be useful for people to think about in terms of sustainability, access to locations' demographics and other features of their area.

Some things we don't currently have in C-FERST, but might want to work with you in the future to help incorporate, may include things as I move towards the bottom here - we don't currently incorporate health data directly, however, we have had some initial discussion with CDC at the recommendation of people from ASTHO to look at the CDC or State's Environmental Health Tracking Data and how that can be brought into C-FERST or at least that we provide linkages to that within C-FERST so people can consider both the demographic features that might contribute to susceptibility, some of the risk factors that they could identify from C-FERST as well as some of the outcome or current health status information that they may gather from the Public Health Tracking Network

So with that I'm going to switch over to my screen with C-FERST on it, so things may go blank for a moment while I try to share my screen, which usually works. At this point you should be seeing (if I check my box here) the homepage for C-FERST, and there are a few things on here I'm going to point out. Initially in terms of where you might start if you come in to use C-FERST, one is that there is a link here to Quick Start Guide which you might think of as that piece of paper with electronics you buy that you might be the one you actually read in terms of how to hook things up. It shows you what are the parts and how do you get to them. There's questions and answers in terms of what is C-FERST as I've mentioned already, who might be some of the people who might use it and what might you use it for. There's a fairly extensive list of questions and answers that pertain to a particular function or activity in C-FERST.

The other thing that we've developed recently, and this was in response to requests from a number of users in our Region 10 pilot work was that we developed a user form for C-FERST where people using the tool or parts of the tool could share information, could ask questions of each other and help answer questions that other users might have. So this is something we've recently implemented and we are hoping will be useful as a way for people to gain information, share experiences what you've managed to do with C-FERST with others. We've arranged the main screen for C-FERST based upon what are the basic things you can do with it. One is that you can take a look at characteristics in your community through viewing maps of your community. That might help you in terms of looking at demographic features, and it might help you in looking at where sources of potential pollutant exposures are and what are the estimates of exposure in those areas. Comparing local estimates with the corresponding county and state values might help you in terms of giving a context to what might otherwise might be just a table of numbers. We will show you examples of each of these, we just want to give you a quick overview here.

Once you've looked at these, you may have certain questions about an issue and where can you get more information about that. So I would take you to 'Gathering Information' and there are two things: one is a series of issue profiles for about 45 issues that have been identified previously in some of the other work that we've done with communities and another is information about environmental measurement methods that range all the way from what the sampler or the device that you might pick up from a hardware store to the information on the reference methods that are used by state agencies or EPA to measure what is in our environment.

We have information in addition to what's there, what are things that people might do to help address concerns you have. This takes us to 'Exploring Potential Solutions,' which is information on Exposure and Risk Reduction Options and also information on community and other tribal projects where people have looked at some of the same kinds of issues you might be concerned about.

I mentioned the Roadmap or community guides earlier, here we would have information that would take you to these, and this might be your starting point, but C-FERST while it relates to these guides, doesn't specifically address everything in the guide so we wanted to focus more of the attention here on what are the basic functions of C-FERST and how you can use it. Finally we have additional resources, so we have information on other possible EPA or other tools, other information about C-FERST itself like background or limitations of C-FERST, again like any tool it will have certain limitations.

So with that I'm going to reference a little bit here about a Project that's currently underway and ramping up in Region 10 where they've worked in a couple of communities, one in Takoma, WA and one in Portland, OR. To do that, they've developed a partnership model that basically included going in and working with state and local agencies in that area, meeting with academic institutions that have locations that serve the members of that community, and then also identifying the key stakeholders that might be community organizations or groups. Together they can form a partnership that is much stronger and represents a broad range of the affected and involved people in that community and help to develop a better report or better understanding of the issues facing that community.

As I've mentioned before there are a couple of Roadmaps you might look at to do this. One is the CARE Roadmap, which is the Community Action for a Renewed Environment, but for some of you coming from a public health community, we will look here at the PACE-EH Guidebook, which is the Protocol for Assessing Community Excellence in Environmental Health. The guidebook has a number of steps that

you can walk through or what they call tasks you can walk through, which help you characterize a local environment, identify populations at risk of exposure, identify and collect information and data, and then set priorities for local action to address environmental health problems. So here we show a sematic of the different tasks in PACE-EH, and these aren't necessarily start at the top and work to the bottom, there are different paths you can take. We then show you what you can do for each of those tasks within C-FERST.

So one of the things you might lead to that the Region 10 group started with is looking at some of the mapping information in their area. From C-FERST to navigate within the tool, there are a couple different ways you could get through. One is to go back to the top, to the homepage, and the other is on the left menu bar there are some of the key steps you might go through. When you come to this landing page there is information on using C-FERST and viewing maps in C-FERST. There are some use case examples that we've developed that show you how to do basic functions in C-FERST. This would take you to what's called a story map, which would walk you through step by step in this case, how to use this map to look at benzene exposure, poverty and the location of healthcare facilities in the community. So you could either choose to go to that example or you might choose to go to the mapping tool itself.

Now right now because of the concerns that were expressed about having the older NATA data available, rather than have this publically available at this point we do have a password protected. If you want that password, we will talk about that later. One of the things that people in Region 10 were interested in is in a particular area in Portland, they were interested in certain issues about that area in potentially developing this and looking for redevelopment options in that area.

So when you first come to the map, it will point you to that location. If I come up here under content, I can start bring up information about EPA registered facilities. For example I may be interested in Superfund facilities or RCRA facilities. If I click on those I now see them located on the map. If I click on any one of those, it'll bring up information or a site report, so in this case it is an active RCRA site. If I want information about this specific facility, I can click on that and it will take me over to a report about that facility, which gives me more information – I know this is kind of hard to read but it is just an example - about what might be potential releases from that facility. This is useful information on what's in your neighborhood, what's out there, what are the potential sources of pollutants in that area.

Another thing they might be interested in looking at is the demographic information. For example, one concern might if we had a larger proportion of people below poverty level living in that area, what are the implications of that in terms of environmental justice concerns - especially if we also see individuals in that area being overburdened. (That should be popping up in a minute) Another thing they were interested in looking at were some of the pollutant estimates in that area. I would come down here to the air concentrations, click on that, and come down to one of the issues of concern in that area which was diesel matter. [Delay]

For the demographic data and pollutant data, if I wanted to know what the different layers meant (this is bringing up a report) if I wanted to see what the different layers were here, let me just take the density off on the map here so that you can better see the underlying map. In the updated version we are going to make this at about 30% by default so that it isn't always coming in quite as dark. But now if I want to look at the legend for this map I can see what some of these facilities are, what these symbols are. I can see the proportion or percent below poverty. To be consistent with the other EPA tools, we're

also going to be defining a layer here for percent below twice the poverty level. Then what we are showing here is the air concentration exposures and risk, in this case looking at the estimated ambient concentrations for diesel PM.

Now if I click on anyone of these areas I can get a little bit more information about that census track, which in this case I'm showing the percent below the poverty level. If I click on this I can see the estimated diesel concentration, but I can also see the breakdown of this in terms of the portion of that comes from on road or off road or other source categories. So this is giving some information that might be helpful to the community, in terms of understanding some of the potential risks they might be facing and the relative importance of those. But to answer that question I might go to a different tool, which is something we have that is an issue profile or a community data table. For this I'm just going to pop in a zip code in the current version. We are developing a different version of this tool that will allow you to enter an address or other location information and then select a specific census track.

Once you're in that census track, it will allow you to bring up a comparison of the environmental concentration estimates (I'm going to make this a little bigger for you to see it better) so what's showing on this one is that zip-code. In the future version it will show you the tracked value, the county value and the state value. At the request of some of states and other parts of EPA, we've been asked to take off the national average because of the differences in the way the data is collected and analyzed by different states. So here, one of the issues that might be of concern where they were looking at diesel PM of about 10.3 micrograms per meter cubed relative to lower values in the county and state. Based on that type of information they wanted to go back and look at was diesel exhaust and what might they be able to do about diesel exhaust.

One way they could do that in C-FERST is come back to the homepage and then start to look at the issue profiles. Again the current version you're needing to put in a zip-code, and in the future version before we go to a public release you can just go ahead and enter the information that you want in a different form. So here I might go down and look at diesel exhaust and I'm trying to find it in that area. This would now generate an issue profile for that area, and this issue profile gives us some information about the issue, general information from EPA or other Federal or in some case state agency websites that might help people to better understand what diesel exhaust is.

The other things that are included here is other information about risk exposure reduction actions that people might take and about the potential sources of that. The current version incorporates again that break-down for the zip-code of how much of this is coming from non-road or road sources. In the version we are preparing, it would show you the map and you could select a particular track for that information.

I'm going to I think skip over the other parts of the demo in the interest of time - we're getting into a half hour right now, so I'd like to finish up a couple of the things on the end of the slides and then allow some time for us to return to questions people may have or other information you'd like to have about this. Bear with me just a moment I have to switch back to the slides here.

One of the things I wanted to talk about briefly was how C-FERST might be used with other EPA tools, so I just wanted to define those briefly for you. One of those is the EnviroAtlas which is a web-based resource that helps provide a lot of information on natural capital, and sometimes we call those ecosystem goods and services. It does that at a number of different levels, some of it might be the larger

scale – the full US – but also in a number of communities now they have very fine scale information, including in urban areas that might include things like tree cover, shielding from roadways that could help mitigate impacts from being near busy roadways in terms of auto pollutant exhaust and other air pollutants. Also it has information in there about parks and recreation areas.

EJ-Screen is the environmental justice screening program that EPA has developed and has rolled out already last July for states and other agencies to use, but for EPA specifically to use. It includes outreach and engagement but also looks at potential disproportionate impacts or burden in communities. We kind of look at that to be a starting point in terms of helping to identify areas that you would want a closer to look at, and a couple of tools that you might take that closer look with would be EnviroAtlas and C-FERST, which I've described.

Some I'm going to give you a little bit of an example with using that would be in Region 10, which is the Pacific Northwest. They've identified some of the communities in the Portland area using EJ-Screen, and then they worked with local state and local health departments, nonprofit in the community and then academic institutions and schools. So they'd identified the areas, and then they started taking a closer look in those areas with C-FERST working with the community groups. One of the key features in working with community groups is the ability to do *Ground Truthing* to incorporate local knowledge. In one case they were working with both students, and in another case it was with an organization that has what they called a Green Team that goes out and does work in communities, but they were able to go out and bring in information that we might not otherwise have gathered, in terms of concentration of fast food outlets, a vacant lot in the area and they were wondering what is in this lot, but also identifying things like a lack of accessible recreational areas. Then they could start pulling together that information with some of the other decision support tools that I'll mention a couple of those in a moment.

This was one of the examples working with ground work Portland, which was a livability study. One of the things that they were looking at was for people living in this area, what was their access to healthy food. They had incorporated things like looking at mass transit routes. That's a feature I didn't mention earlier, but with the mapping viewer that we're using in C-FERST it's a commercial viewer, but you can bring in information either from existing maps, geo-coding or just putting in the geographic coordinates and bringing it in that way. They were also able to put in bus routes, and then also start to look at things like community gardens in the area.

One of the interesting things with this group was that as they were walking through an area they were able to identify and add their own information and tag that on the map along with pictures of an area. One of the concerns that they saw was that this vacant lot was a Brown Field Cleaners and is an area near a childcare center. They're basically able to take the information that we have in C-FERST and augment that with their own observations and data.

Some of the lessons that we see from the work that we've done with communities in Region 10 is that C-FERST can help in terms of raising environmental awareness and education. It is also a challenge in terms of the issues they may be concerned with in that area, may not be some of the traditional environmental issues that EPA might usually cover. We are looking in terms at ways that we can provide additional training and information about both those issues and using C-FERST. As a tool, it can help them in terms of geographic information systems and learning how to use that, and the community sharing network is something we're working on possibly in conjunction with CitizenScience.gov.

These are just some examples of applications or uses in terms of working with state agencies initially, Oregon Health Authority Public Health Tracking Unit identified some potential uses to look at populations that are impacted by expanded transit or light rail, Department of Environmental Quality looked in terms of a partnership they might develop with local businesses and property owners in terms of developing and cleaning up possible Brown Field locations, and the county looking at community outreach engagement opportunities to work with local communities and again interest in terms of Brown Field assessment and outreach.

We've recently starting working with another group in Region 3 on a similar model in terms of reaching out to state and local agencies, academic institutions and community groups. They've initially started doing training with an academic institution to then reach communities members in Dover, Delaware. Based on that, Delaware State University is interested in developing a course on environmental health and plans to incorporate C-FERST into that.

The Department of Public and Allied Health is planning to include C-FERST in their public health courses and in collaboration with Region 3. This would have students that could pursue local risk assessments on a variety of topics and develop use case examples that again we can share with others on how C-FERST has been used and the ability to exchange information. This is a collaboration both with Region 10 and Region 3 that demonstrates the value of reaching out to academic partners. Essentially, this is providing the training for future environmental leaders.

I'm just about done with the slides, so we have some time still yet.

Our next steps with C-FERST is to finish off the updates to the data. We're currently looking at developing additional training and piloting that training with a few of our regional partners, and for them to be able to do outreach to their state and local partners. We're identifying points of contact to help answer questions as they come in about C-FERST so that we are not placing a burden on our partners. We are looking to engage with state and local agencies and with communities.

You have an opportunity to use the pre-release version of C-FERST. As I've mentioned there are some of the data sets in there that we are still in the process of updating. We'd be asking you to provide your thoughts, comments and recommendations back to us both in terms of the initial release but also into the future as we start looking at how C-FERST is used and how we can make it more useful. There's a potential opportunity here if you're interested. We are looking at a train the trainer type model, and we would be providing the training to you as the initial effort then you might be able to use the materials we provide you in terms of doing outreach to local communities. The public release after we've updated the data sets and have this training material available, we expect to be later this year - certainly by the fall.

Some of the contacts if you want further information about C-FERST: I would be the contact if you have technical questions about C-FERST or what we're doing with it at this point. Non-technical questions in terms of the development of the program or its relationship to other activities in the Sustainable and Healthy Communities program might be Dr. Slimak who was on the line earlier, also David Kryak in the National Exposure Research lab is helping to coordinate with the roll out throughout different parts of the Agency. Finally, if you'd like to have access to the pre-release version of C-FERST we just ask that you send an email to CFERSTMAIL@epa.gov. The only reason we are really asking you to do this right now is

so we can identify who's using the tool, maybe doing any follow-up with them in terms of what your experience is or advice is to us, and also in case passwords change, which we've been told may happen.

So I'm going to stop right there. I wanted to stop with acknowledgments to a number of our partners, our nonprofits partners that we've worked in different regions, state and local government agency partners including county state health departments, academic partners in the different regions as well as our regional partners with Region 10 and Region 3.