

**2010 Homeland Security S&T Summit
South Central Region
LIVE INTERACTIVE WEBCAST
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**"S&T in the South Central Region: Lab Perspective"
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We will bring up the next briefer with the national labs talk about what they think you in the region and us and the federal government needs to know how the highlight SNT not only to this region a. This event began between a conversation between Jill and I a year ago pitchy is the director for the center of Homeland Security at National Laboratories were we will be tomorrow and also served as the program director for Homeland Security since 2005. She covers a lot of topics and is a very busy woman and we're still running exactly where we want to be, about ten minutes behind.

JILL HRUBY

Thank you and let me thank you the host at Los Alamos for their ability to put this on today paid it is not easy to have eight open conference and to have some reepeople on Web cast. And before I start I just want to offer my sincere thanks to K. one could she has been an incredible partner in putting on this meeting at the national labs and she works really hard to bring a good conference to use to make sure that you tell her thank you. Finally I would like to thank you my thanks to Susiana Gordon who has done a lot of heavy lifting for this conference as well and I think without the two of them we would not actually be here doing this today. So let me tell you a little bit about this pretty will be there tomorrow hopefully. Hopefully we will have a few people joining us as well and hopefully we still have the Web cast audience paid a little overview. The business units that we operate in our nuclear weapons and its about 40% of our work. The other areas are defense systems and assessments, energy resources and non-proliferation and, of course, Homeland Security and defense. About half of our technical employees are engineers. Sandia is an Engineering Science and Technology laboratory. Our heritage from the nuclear weapons program is to engineer the systems and to all of the non-nuclear parts of nuclear weapons in collaboration with Los Alamos Sandia has benefited greatly from large investments over the last 60 years. We have unique test facilities and capabilities. You will see some of those tomorrow in the tour of Sandia I want to point out a few here. Large operational test ranges. Our campus is very large and we use that campus to do things that maybe could not be done other places. We have high performance computing platforms and world-class modeling and simulation Sandia uniquely has capabilities in my group and financial -- micro and nano systems and we do a lot of research and nanotechnology in a joint effort with Los Alamos and also a lot of work on radiation affects. I will now switched to talking about our Homeland Security and defense programs and go through these quite quickly we

have our heritage which is counter WMD and also chemical and biological. We have a lot of work and explosive security, for security, data sharing, and border security. I will go through these new little bit more detail. In chemical and biological security we have a lot of work across the spectrum. Starting with systems analysis we work with defining the architecture is and the requirements and do in response to studies. So we get tasking to do things in a sure period of time based on Evens or anticipated new technologies and also that analyses and Systems Engineering deployment. We have done a lot of work in designing systems and employing those of a prototype level. Including detection and also a response technologies. Tim mention this morning a little bit about Sandia which is a decontamination form of that we demonstrated in a forms. We also have playbooks that we do. Finally we do have decision support systems and technical beach back. We have a poster here in the poster session this afternoon and I want to reiterate that we have strong partnerships with other labs and in all of our home and security programs. I have not looked at the programs at this moment in time but within the last year I looked and every single program that we executed for DHS we have a partner. So the ability to do the systems analysis and engineering hinges on a deep technical research foundation. And at Sandia that is advanced detection systems and building off of our expertise and response and recovery systems that we have done for many years and some by a security work that we do funded by the state security department. I guess tomorrow in the tour you will be able to see some of our restoration on technologies. Moving to radiological and nuclear security. You know that this is our heritage. It is not surprising that we have fairly broad programs. We do a lot of work in trying to understand the threat from improvised nuclear devices or dirty bombs. We look at where the threats might be and then recommend architectures to mitigate the loose threads. Sandia has had the lead for land, sea, and air and we work closely with them as well. We also do a lot of work in systems engineering particularly the engineering protection schemes for delays. So one of the tricks is to make sure there is a lot of time between when a bad guy tries to get a device and when they will actually get it because that allows first responders to get there. There is a large link to our nuclear weapons we know what the nuclear weapons look like. Detection system and deployment testing. Sandia does a lot of work in field testing and testing on site for DNDO as well as other customers. In fact, we have at the Air Force Base near Sandia a new class facility that we work with a lot. Today with the poster session you will see some of the nuclear architectures that we have done and tomorrow with the tour there will be more of a chance to see things and radiological screening at four burst that we have done. It turns out that I should point out here that we have done a lot of work on protecting blood irradiators. It turns out that they have nuclear devices in them again, this work is based on the deep technical foundation and modeling and simulation and advanced detection with new materials and passive and active concepts. Sandia has many response teams and finally% six and attribution. The a clue here that you see is a facility that we used to test actual dispersal of devices. We do not use nuclear materials to do that this and related to us so we understand what we have to clean up in the event that there is a RDD event. Explosive security program. The explosive security program have to tell you I am absolutely warn Ellison's Christmas Day we have had a. Large response to the attempted bombing on Christmas Day paid partly because the laboratories have operated this center called the nexus -- NEESSC and they have tried

to combine intelligence with explosive detection and we recognize the need to go across that and we sort of self form the center and have been funded by DHS SNT to work across that space. We have a long heritage in working with explosives so we have been working to define some activities for the future. We have three working groups that have been established for the first is in systems analysis to a -- to understand what the system looks like and, of course, we have to look at people not only strapping explosives on their body but their carry-on baggage and also aircraft ability. Finally we have an activity on emerging technologies that has come out of the working groups since Christmas day. So I just want to point out that you see the model and a rip in the aircraft. So the trilab is able to use their high performance platforms as well as the model to predict how an explosive impacts and aircraft that enables us to say, here's what you need to look for when you look at checked eggs or carry-on bags -- checked bags or carry-on bags and they are well founded is scientifically and in terms of we need to worry about those quantities because we have a scientific background in terms of understanding aircrafts' vulnerability. Sandia has been involved in Cyprus security for a long while and we have used that knowledge to understand things like different systems. We have a test bed at Sandia that was funded by the Department of Energy to look at energy SCADA systems and a lot of work and protecting wireless networks and understanding of attacks on our networks. Our networks can be attacked very frequently so we have to have a lot of security for our own networks. We do have a DOE IO range chance to a lot of work for DHS National cyber security division. Tim covered infrastructure Protection program quite well. Tomorrow you will be able to go to a building where we host the NISAC surfers and in today's post a session there is a little bit on that and the building and get some demos tomorrow. Border security. I love this wording so let me just say that Sandia has a long history and protection of borders and physical security. We have actually

have been the DOE lead lab since the Munich Olympics and we have done a lot of work. There are unique facilities and you were going to see border security test ranges and technology during the two were at Sandia. We have parlayed the work and physical security for the DOE into security systems for DoD. Sandia is the primary security that pretax DoD bases and have a long history which I hope you'll join us tomorrow and see them. A little bit more about Porter's. To a lot of in systems analysis and engineering. It is the trademark of the laboratory. We'd have a significant testing evaluation capability and also a tunnel detection, synthetic aperture radar and a lot of work with on me and vehicles, robot picks and under water monitoring. There is a poster today and again tomorrow's tour.

Finally I did want to see the complex systems modeling and simulation is imbedded in everything that we do. This is a number of things that you can see here that we have done over the years. To have multiple posters today describing are modeling and simulation capabilities including the game means simulation analysis that is what we do for FEMA and hazard simulation and also some work that we do with the electronic playbooks.

Thank you.