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**VIRGINIA ECONOMIC DEVELOPMENT PARTNERSHIP  
THIRD WEDNESDAY WEBINAR**

**SOUTHERN VIRGINIA PRODUCT ADVANCEMENT CENTER:  
FROM THE LAB TO THE MARKETPLACE**

**WEDNESDAY, DECEMBER 17, 2014  
2:00 P.M. - 3:00 P.M. EDT**

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**Q & A SEGMENT:**

CONNIE LONG

**VIRGINIA ECONOMIC DEVELOPERS ASSOCIATION**



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**THIRD WEDNESDAY WEBINAR****WEDNESDAY, DECEMBER 17, 2014****2:00 P.M.**

**BRENT SHEFFLER:** Hello, everyone. Welcome to the Virginia Economic Development Partnerships Third Wednesday webinar. Thank you for joining us today.

Today is the seventeenth day of December, 2014. This third Wednesday webinar is the twelfth and final webinar in our 2014 series and is titled "Southern Virginia Product Advancement

Center: From the Lab to the Market Place."

We expect today's session to run about one hour.

My name is Brent Sheffler. I serve as Managing Director of Knowledge Transfer and Strategic Outreach on the Business Expansion division at the Virginia Economic Development Partnership.

At the controls is Connie Long with the Virginia Economic Developer's Association, also known as VEDA. Connie is managing the dashboard and will moderate the Q and A part of today's webinar. The Virginia Economic Development Partnership is collaborating with Halifax County Industrial Development authority, and the Southern Virginia Prime Advancement Center, to present today's webinar.

**(WHEREUPON, the next slide was displayed as Exhibit**

1 2.)

2 You will hear more about both the Halifax county  
3 industrial development authority, and the Southern  
4 Virginia Advancement Center in todays program, so we  
5 will get into that in just a minute.

6 For our housekeeping, I would like to  
7 introduce to you, to provide our listeners with a  
8 little of this webinar housekeeping. Those of you  
9 attending this webinar are in listen only mode for the  
10 duration of the program. Your mics and your  
11 telephones have been muted. We can't hear you but we  
12 can read what you write in the question panel.  
13 Usually this question panel is located in the upper  
14 right of your screen. We are taking questions and we  
15 want this webinar to be interactive.

16 **(WHEREUPON, the next slide was displayed as Exhibit**

17 3.)

18 Those of you who have screens on your desktop, your  
19 laptop or your mobile device are invited to type your  
20 questions in the question panel window on your  
21 GoToWebinar dashboard at any time during this session.  
22 Connie Long is able to read the questions submitted  
23 and can communicate those questions to us as we  
24 proceed through today's session. Again, we want this  
25 to be interactive, so please go ahead and drop a

1 question into the question panel if you have one at  
2 any time during the program.

3 **(WHEREUPON, the next slide was displayed as Exhibit**  
4 **4.)**

5 Several of our listeners ask us how you can receive a  
6 copy of the presentation. This session is being  
7 recorded. After we close today's session we will post  
8 the recorded webinar on the Virginia Allies .org  
9 website, that's VAallies.org website. If you missed  
10 any of the webinars conducted this year, or would like  
11 to revisit any of the sessions held this year, you are  
12 invited to go to the VAallies.org website where each  
13 webinar has been posted and has been available to you.  
14 Today's webinar will be posted in just a few days  
15 after the end of the program.

16 **(WHEREUPON, the next slide was displayed as Exhibit**  
17 **5.)**

18 After we end today's session, and once you've closed  
19 GoToWebinar, you will receive an e-mail and a few  
20 survey questions. This survey should arrive in your  
21 e-mail within 24 hours after the close of the webinar.  
22 We encourage you to take a minute to respond to the  
23 survey and give us your feedback. This will help us  
24 to improve and to plan for future webinars.

25 Our Third Wednesday Webinars are part of the

1 Virginia Economic Development Ally Communications  
2 Strategy. The webinars we held in 2013 and the  
3 webinars we are showcasing this year are designed to  
4 bring subject matter experts to address topics that  
5 are important to you and to share knowledge about  
6 available resources. It's our objective to keep you,  
7 our Virginia allies and partners well informed so that  
8 we can collectively accomplish our mission and realize  
9 our economic development goals.

10 **(WHEREUPON, the next slide was displayed as Exhibit**  
11 **6.)**

12 For those of you just now joining us,  
13 today's webinar is titled "Southern Virginia Product  
14 Advancement Center: From the Lab to the Market Place."  
15 There is a tremendous amount of research being done  
16 among Universities and Federal laboratories throughout  
17 Virginia and our neighboring states.

18 Some of that research can be applied to  
19 creating new products that can help mankind and can be  
20 sold in the market place. Just how does technology  
21 transfer take place? And even when ideas become  
22 prototypes, and technology transfer does take place,  
23 just how can that technology be converted into  
24 commercially viable products? Today's webinar will  
25 describe how this is happening in Virginia.

1 **(WHEREUPON, the next slide was displayed as Exhibit**  
2 **7.)**

3 Our speaker today is Dr. Doug Corrigan from the  
4 Southern Virginia Product Advancement Center. Some of  
5 the questions that we will pose for today include what  
6 the Southern Virginia Product Advancement Center is  
7 all about, how the Virginia companies can access  
8 resources for research and technology transfer, and  
9 how companies can leverage the Southern Virginia  
10 Product Advancement Center to move towards  
11 commercialization of new technology and into new  
12 products, and where can economic developers and  
13 community leaders go for more information.

14 We have considerable material to cover, so  
15 let me take a minute to introduce our speaker, Dr.  
16 Doug Corrigan.

17 **(WHEREUPON, the next slide was displayed as Exhibit**  
18 **8.)**

19 Dr. Doug Corrigan is the director of the Southern  
20 Virginia Product Advancement Center, a state-of-the-  
21 art R&D center in Halifax county, Virginia that  
22 assists in advance technology companies with business  
23 incubation, commercialization assistants, and research  
24 and development to bring new products to market. As  
25 SVPAC is focused on technology development and

1 commercialization in the aerospace, automotive, and  
2 bioinformatics centers.

3 Doug holds a Ph.D. in biochemistry and  
4 molecular biology from Quillen College of Medicine, a  
5 masters degree from Rensselaer in engineering physics,  
6 material science, and a bachelors degree from  
7 Rensselaer in engineering physics with a concentration  
8 in electrical engineering.

9 In the early phases of his career, Doug  
10 worked at Oak Ridge National Lab, and NASA, where he  
11 focused his research on formation of advanced  
12 materials in outer space, a research project that was  
13 preformed remotely on two space shuttle missions.

14 Doug has invented, licensed, and/or  
15 commercialized numerous technologies in areas such as  
16 chemical nanosensors, nano optical coatings, drug  
17 discovery asseys, pharmaceutical industry, biomatrices  
18 for neural tissue growth, shape shifting materials,  
19 enzymes for biofuel production, vaccines, x-rays and  
20 innovative materials or application in the renewable  
21 energy center.

22 After founding and managing the bio-tech  
23 company, Doug has helped numerous technology based  
24 companies develop business plans, re-find their  
25 technologies for commercialization, and raise capital.

1 Doug was also awarded, in 2013 for  
2 developing one of the top ten series in the world for  
3 his mathematical and thermal dynamic theory for the  
4 Mpemba effect, a phenomenon that has perplexed  
5 scientists for over 2,000 years.

6 Please join me in welcoming Dr. Doug  
7 Corrigan. And Doug, let me go to the next slide, and  
8 you will be online.

9 **(WHEREUPON, the next slide was displayed as Exhibit**  
10 **9.)**

11 **DR. DOUG CORRIGAN:** Hello, this is Doug. I  
12 just wanted to thank the Virginia Economic Development  
13 Partnership, and VEDA for hosting this webinar today,  
14 and for inviting me to be a part of it. I am very  
15 excited about talking about what we are doing here,  
16 and what we have been learning throughout the last  
17 several years, and how we are going to be able to  
18 benefit what you're doing throughout the state. So  
19 thank you for having us, and we will just go ahead and  
20 get started.

21 I am going to tell you about the Southern  
22 Virginia Product Advancement Center. We are a  
23 technology commercialization center, and we are  
24 located in South Boston, Virginia. We offer research  
25 development centers to help companies incubate and

1 develop their technologies and commercialize their  
2 products and get it out to the market. You will learn  
3 more about that today.

4           You are going to learn about our history  
5 admission, how we got started, and how our mission has  
6 maybe morphed a little bit over the last several  
7 years. We will talk about some of the research and  
8 development centers we actually have in place here,  
9 that we have put in place to help companies. We will  
10 talk about how we help incubate companies, our  
11 business incubation program. I will give you some very  
12 specific examples of projects we've worked on, and  
13 will be working on in the future. And then we will  
14 talk finally, about how you, throughout the state,  
15 that are listening to this, may be able to access some  
16 of these programs, and capabilities that we have. Even  
17 if you are not located here, we try to help as many  
18 people as we can, even if they are not physically  
19 located here. Next Slide.

20 **(WHEREUPON, the next slide was displayed as Exhibit**  
21 **10.)**

22 Alright, so the history about the Southern Virginia  
23 Product Advancement Center. Right now, we are a  
24 component of Halifax county industrial development  
25 authority. Originated as the Riverstone Energy Center,

1 which was one of the five energy centers started by  
2 the tobacco commission several years ago, in 2008.  
3 There is five energy centers scattered across the  
4 state that focus on different areas of renewable  
5 energy projects. Some of them are involved in nuclear  
6 technology, some in bio, bio- energy type projects,  
7 some in other like clean coal and that type of thing.  
8 We tended to focus on modeling simulation at the  
9 beginning phases of when we started. How can modeling  
10 and simulation virtually reality technology be used  
11 and how renewable energy projects technologies move  
12 forward.

13           The Halifax county industrial development  
14 authority is a separately chartered subdivision of the  
15 state, political subdivision. Many of you know what  
16 the industrial development authority does, and what  
17 their mission is. It is to bring, and increase jobs  
18 and employment to whatever county, or region that they  
19 serve.

20           Matt Leonard is the executive director of  
21 the Halifax county IDA. He wanted me to send you his  
22 greetings, and let you know he is excited that we are  
23 all apart of this. We are a component of the IDA, they  
24 are a legal financial structure in all of that.

25           We actually started off as the Riverstone

1 Energy Center, and changed our name to the Southern  
2 Virginia Product Advancement Center in 2014, this  
3 year. We had a re-branding initiative to kind of  
4 better communicate what we actually do to the rest of  
5 the world. We thought that the Riverstone Energy  
6 Center didn't really tell people who we are, where we  
7 are located, and what we do. Southern Virginia Product  
8 Advancement Center tells you where we are located,  
9 tells you what we do, which is that we advance new  
10 products. Next Slide.

11 **(WHEREUPON, the next slide was displayed as Exhibit**  
12 **11.)**

13 So where we are located in Southern Virginia, we are  
14 on the border with North Carolina and the Virginia  
15 border. We are pretty close to Research Triangle Park.  
16 We are surrounded by some great universities, to our  
17 north, and to our south. Virginia Tech, UVA, Virginia  
18 State, Virginia Commonwealth, ODU.

19 To our south we have Duke, North Carolina  
20 State, UNC Chapel Hill. You draw a circle around us,  
21 you know, we are surrounded by some of the worlds best  
22 research universities. We sit in the middle of all  
23 that.

24 We are in the Southern Virginia Technology  
25 park, which is along route 58 on the southern border.

1 You can see the picture of the building that we are  
2 located in, in the concept diagram of the technology  
3 park when it is all built out in the future. Next  
4 Slide.

5 **(WHEREUPON, the next slide was displayed as Exhibit**  
6 **12.)**

7 What is our mission? Our mission is to try to provide  
8 capabilities and advanced technology to generate  
9 economic, generate potential in our region. We do that  
10 through attracting, supporting, and growing advanced  
11 technologies enterprises and products. So you will  
12 learn more about that as we move forward. Next slide.

13 **(WHEREUPON, the next slide was displayed as Exhibit**  
14 **13.)**

15 How do we accomplish that mission? So we have to have,  
16 put resources in place, put people in place, to be  
17 able to accomplish our mission. Some of the resources  
18 we put in place to do that is a modeling and  
19 simulation program, an advanced manufactured program,  
20 a coatings program, and a business incubation program.  
21 So that ties them all together. Next slide.

22 **(WHEREUPON, the next slide was displayed as Exhibit**  
23 **14.)**

24 So lets talk about the modeling, the advanced  
25 manufacturing, the coatings, so those three pieces

1 right there. When we first looked at, what we do in  
2 our region really well, Southern Virginia is really  
3 good at manufacturing products. Our work force, in the  
4 industries we have here from over seas, in Southern  
5 Virginia, in locally and domestically.

6 The industries we tend to have here are  
7 mostly manufacturing companies. They make things, they  
8 maintain tangible products, and they are constantly  
9 having to upgrade their skills and technologies to be  
10 able to be competitive with the rest of the world.

11 So we wanted to play in that same space with  
12 manufacturing type companies, and we looked at what we  
13 need to do to be able to support the companies that we  
14 have here already, but also attract new start-up  
15 companies that may have a new product.

16 So we looked at the manufacturing process as  
17 a continuum, realistically from beginning to end. The  
18 first stage of manufacturing is modeling the  
19 simulation. Modeling the simulation is where you come  
20 up with that first idea, usually starts in your mind  
21 and you get it out on paper.

22 This is my idea, or concept of what I want  
23 to build or make. Then you put it into a computer  
24 system to get a 3D model of that. You start to play  
25 around with that design in the computer to perfect it,

1 to optimize it, to iterate through that. Then you  
2 would start to build a physical prototype. Where you  
3 would get into the advanced manufacturing processes,  
4 like C&C machining, 3D printing, and those types of  
5 technologies. Then as you move forward and you start  
6 the manufacturing of your product, you are really  
7 going to look at what's the final coating on that  
8 product look like, the finish on it?

9           So that's from A to Z, soup to nuts, how we  
10 looked at the manufacturing continuum. And we wanted  
11 to put centers of excellence in place, research  
12 centers in place, that could help with all of this  
13 from A to Z. So Next slide.

14 **(WHEREUPON, the next slide was displayed as Exhibit**  
15 **15.)**

16 So let's talk about modeling and simulation. Our  
17 modeling and simulation center was the first thing  
18 that we had, again I said at the beginning in 2008  
19 when we first started. The first component that we put  
20 in to the Riverstone Energy Center, at that time, was  
21 the modeling and simulation program.

22           What that is a virtually reality theater. It  
23 is a 3D cave that you would walk into, it is a pretty  
24 large room you walk into. Its got virtually reality  
25 theater that you could bring in your computer and

1 designs, 3D models, and fully render them inside this  
2 cave and fully immerse of 3D lifelike reality on a 1 to  
3 1 scale. You could scale it up larger or smaller. But  
4 the idea is instead of seeing something on a two-  
5 dimensional screen, and it is small. So if you are  
6 trying to design a car, for example, or an airplane,  
7 or a jet engine, or whatever it is, that part usually  
8 when you look at it on your computer screen, is much  
9 smaller because that is the size of your computer  
10 screen. And you can't get it outside of that.

11           So with the 3D modeling cave, you can make  
12 the product as large or as small as you want, you can  
13 make it 1 to 1 scale. So you can see what that product  
14 is going to look like on a life like scale, and you  
15 can also see that 3 dimension down. You can move  
16 through your product, go inside of your product, look  
17 at it from different angles and perspectives, it is  
18 something you can't do on a two dimensional flat  
19 screen.

20           And now that those companies can virtually  
21 prototype what they are doing, so the idea is, instead  
22 of building a physical prototype from the get-go, you  
23 would do a lot more virtual prototyping on the front  
24 end, and get your product optimized as much as  
25 possible, and then build your physical prototype. So

1 instead of wasting time, money, energy, people, on  
2 making mistakes, a lot of mistakes, then having to  
3 redo that through a physical prototype, you would make  
4 all of your mistakes on the virtual world which  
5 doesn't cost you anything. A lot of companies like the  
6 Boeing's of the world, use this type of technology.  
7 Fords of the world use this to design their next car,  
8 their next airplane, whatever.

9           Small or medium sized companies tend not  
10 have access to this type of technologies, because it  
11 is so expensive and so cumbersome. They don't have  
12 overhead to be able to absorb that. So we make those  
13 investments into those types of technologies into  
14 those types of technologies that other companies,  
15 medium, small sized companies, can access and stay  
16 competitive with the rest of the bigger companies that  
17 do have this technology. Next slide.

18 **(WHEREUPON, the next slide was displayed as Exhibit**  
19 **16.)**

20 We also have an internship program where we have  
21 worked with high school level students, and college  
22 level students in modeling and simulation. What we  
23 have done is really try to play on this idea of  
24 gaming. A lot of kids now a days, in high school, are  
25 interested in 3D gaming. The play stations, the Xbox,

1 all of that. Some of them get involved with how to  
2 make their own 3D games, and want to learn how to do  
3 that themselves.

4           So we realized that there is students in our  
5 region, Southern Virginia, that wanted to do this  
6 through initial science foundation grant that was  
7 given to Longwood University in our region. And they  
8 had a Digispired program, its called Digispired, and  
9 the students that they were working with were learning  
10 computer programing, because they had some kind of  
11 interest in gaming. What we did is we took some of the  
12 students from that program, and we brought them into  
13 our modeling and simulation program. We started to ask  
14 them to use the same technologies that are being used  
15 in designing 3D games. And to retrofit that or to  
16 readapt that to help with manufacturing problems to do  
17 virtual reality design and engineering.

18           So students came to our center, they worked  
19 with us for several years. We took off the shelf  
20 technologies like Oculus Rift headset, we took hand  
21 tracking technology, body tracking technology. We  
22 emigrated that all together into applications that  
23 these students developed to help companies go into a  
24 virtually reality world and design their products and  
25 play around with them. Something that we have ongoing,

1 in addition with what we have going on inside the  
2 cave. Next slide.

3 **(WHEREUPON, the next slide was displayed as Exhibit**  
4 **17.)**

5 Now this slide here is about manufacturing. Once you  
6 have designed your product in virtual reality, now you  
7 are going to try to build the first prototype. What  
8 resources do we have in our region for companies to do  
9 that? Well at the Southern Virginia hired education  
10 center, which is right down the road from us, two  
11 miles down the road. They were designated as one of  
12 the five energy centers throughout southern southwest  
13 Virginia. They have the R&D Center for advanced  
14 manufacturing in energy efficiency. That lab right  
15 there in advanced manufacturing lab, that lab has C&C  
16 machining equipment, laser cutting, welding, water jet  
17 cutting, 3D printing, all of that. Machining, waving,  
18 those types of state of the art machining technology  
19 is available at the Howard Education center.

20           They work with the industry to help them  
21 adopt new technologies to help machine cards to do  
22 prototypes of different types of products, etcetera.  
23 They are training their work force, they do a lot of  
24 work force training. They are really focused on that.  
25 They are one of the centers of excellence that have

1 been designated by the state for workforce training  
2 around the aerospace industry with what is going on  
3 with CCAM. CCAM, you might have heard about, the  
4 Commonwealth Center for Advanced Manufacturing, it is  
5 in Petersburg. They do have a strong initiative to  
6 title about two hundred people across the state. They  
7 have skills in welding, mechatronics, and precision  
8 machining.

9           The Howard Education Center has been  
10 designated as one of the three sites throughout the  
11 state that will be training to level one, level two  
12 certifications, national credit standards in those  
13 three disciplines to support the whole CCAM  
14 enterprise. A lot of that is built around aerospace,  
15 but the skills transport across many industries.

16           So we are excited that they are a partner  
17 with us, and to work with them, but this is one of the  
18 ways that we can help companies prototype their  
19 product after they have virtually designed it to get  
20 it into a machine environment, and to actually create  
21 the product. Next slide.

22 **(WHEREUPON, the next slide was displayed as Exhibit**  
23 **18.)**

24 One of the things that we are working on is being able  
25 to work with lighter weight, more advanced materials

1 other than just metal. Some of you may have heard or  
2 know about carbon fiber composite materials. Those are  
3 a very high strength, low weight materials that is  
4 used primarily in a defense industry that is now  
5 making its way significantly into the aerospace and  
6 automotive centers to cost to that common fiber and  
7 technologies to make it are becoming more stream line.  
8 Companies are starting to adopt that, and bring it out  
9 to the commercial consumer center.

10           So BMW cars, for example, now have carbon  
11 fiber components on the body and the shell of their  
12 car. This, the stream liners, mostly made out of  
13 carbon fiber now, aircraft and boating. The airbus as  
14 well, the new airbus that has become competitive to  
15 the stream liner, there aircraft is made out of carbon  
16 fiber.

17           So, we want to be able to support those  
18 industries, EOY industry, on monaro- vehicles, and  
19 things of that nature are going to be made out of  
20 carbon fiber products. So having that capability here  
21 in Southern Virginia is important to be able to  
22 support those high tech companies. So we are putting  
23 in, right now as we speak, a carbon fiber production  
24 facility in our building here, along side our coating  
25 center to be able to support companies. It will be a

1 pile line production facility where companies come in  
2 and manufacture carbon fiber component that will be  
3 staffed by a company called TMI auto tech, which I  
4 will talk to you about in a moment. Next slide.

5 **(WHEREUPON, the next slide was displayed as Exhibit**  
6 **19.)**

7 Then last but not least, coating. So we realized that  
8 a lot of regions, and other states have great programs  
9 and C&C machining, and welding, and those types of  
10 things, but coating was really not being addressed at  
11 all, that we could see, from an economic development  
12 perspective. So we thought long and hard about what  
13 can we do about putting in a coating center. We worked  
14 with the higher education center on this product, we  
15 had thought leaders, and community leaders in our  
16 region, from the Halifax county that thought about  
17 this. We started to put together a business plan and a  
18 model for CCAM and started to raise funds for that,  
19 for that enterprise.

20 That was built out over the last several  
21 years, and we had ribbon cutting in October of 2012.  
22 It is a 12,000 square foot lab and has state-of-the-  
23 art manufacturing equipment that you would see in a  
24 high tech manufacturing operation and manufactures any  
25 type of product. A wood product, a plastic product, a

1 metal product, etcetera. We have the type of  
2 application technology that they would use.

3 So industry helped us design the lab, the  
4 vendors that manufactures the equipment, that  
5 manufactures used helped us design the lab, so we put  
6 in real world manufactured equipment so they could  
7 play around in this playground, and figure out what is  
8 the best coating technology, what is the best coating  
9 equipment to use that is automated, or applied  
10 manually. We can do liquid, we can do powder, we can  
11 do water based solvents, or just solvent based  
12 solvents. We are trying to help them be switched over  
13 from VOC, free coatings to go over to more water  
14 based, more green based chemistries, which is  
15 important which manufactures now a days.

16 But this center right here, you are really  
17 rounded out what we are going to be able to offer  
18 companies. Next slide.

19 **(WHEREUPON, the next slide was displayed as Exhibit**  
20 **20.)**

21 We have robotics in the facilities, which act as  
22 robotics, Kawasaki, are great partners of ours, they  
23 make robotics for the automotive industry. We want  
24 companies to be able to use this space for workforce  
25 training, for research and development, process

1 engineering, testing invalidation, to be able to put  
2 coatings on their products and test them.

3 I will mention that the initial business  
4 model that we have when we first opened CCARE, was to  
5 work on a project by project bases for a different  
6 manufactures. We marketed it, and went to conferences  
7 and trade shows, etcetera. And we marketed what we  
8 had, we are still doing that. But the idea back then  
9 was to bring in products on a project by project  
10 bases, and then have contract and personnel inside a  
11 CCARE that would preform that work.

12 So, we are moving away from that business  
13 model to look for more permanent industrial members  
14 that can use a lab to become annual members with is.  
15 We are looking for four to eight members. Over the  
16 last year, we have been marketing CCARE from that  
17 perspective, and in bringing in companies, and having  
18 discussions with them about partnering with them about  
19 partnering with them about using the lab on a more  
20 permanent bases. So that we are not managing every  
21 product that comes in and out of the lab.

22 **(WHEREUPON, the next slide was displayed as Exhibit**  
23 **21.)**

24 So here is some more pictures of the coating center.  
25 You can see we have very clean facilities. State-of-

1 the-art equipment, so this is a resource that we call  
2 the National Center for Coatings. Meaning that we want  
3 it to be out there for everyone to use throughout the  
4 state of Virginia. As you know CCAM is working on  
5 coatings as well, in their research program with CCAM,  
6 they are working on a lot of the high temperature  
7 thermal barrier coatings. We are working on the lower  
8 temperatures, liquid sprays, and powdered coatings.  
9 Like paint, and things of that nature, that would go  
10 on a car or an airplane. CCAM tends to be focusing  
11 more on the high temperature coatings that go inside  
12 of the jet engine to help those parts work at really  
13 high temperatures, like three thousand degrees.

14           So we got different focus, but we are all  
15 working together in the same umbrella of coatings.  
16 Which is a really important component to  
17 manufacturing. Next slide.

18 **(WHEREUPON, the next slide was displayed as Exhibit**  
19 **22.)**

20 So now, those are the resources that companies have  
21 access to help them develop their parts all the way to  
22 the final coating. Then what we try to do is help  
23 identify companies throughout the state or surrounding  
24 states that have technologies that are getting past  
25 the point of basic research, and really have a proof

1 of concept model and are starting to have a business  
2 plan come around that with investors starting to put  
3 money in that idea or concept, and now they want to  
4 try to perfect their idea and get it out to the  
5 market.

6           So that's the area that we come to play in.  
7 We don't work with technologies that are still in the  
8 early stages of TR level 0 through, say 6. Those are  
9 really early stage technologies, still at the bench  
10 scale, they really haven't proven themselves out yet.  
11 They haven't gotten to the point yet where they are  
12 ready to start being commercialized incubated. So we  
13 work to more mature technologies that are coming in.  
14 Because we want to see job creation and economic  
15 development in a relatively short period of time. So,  
16 what that means is maybe five years. Some of the  
17 earlier technologies, they are still maybe twenty  
18 years out. So we hope those technologies will advance  
19 throughout the state of Virginia, through the  
20 universities, and the great work being done in the  
21 Department of Defense, and NASA, and things of that  
22 nature. Some of those ideas have matured enough out of  
23 the universities, or the NASA'S of the world, and we  
24 can take them, and we can grow them into a commercial  
25 venture here in Southern Virginia.

1 So, our business incubation program, we help  
2 companies in developing their business plan, we help  
3 them access R&D grants, and financing. You know,  
4 capitalizing your idea to get capital behind it. We do  
5 have the R&D as I told you earlier, that is part of  
6 the business incubation, so if they are here, they  
7 would have access to the modeling and simulation, the  
8 advanced manufacturing assets we have here, prototype,  
9 and the coating.

10 **(WHEREUPON, the next slide was displayed as Exhibit**  
11 **23.)**

12 We offer office space, and things of that nature as  
13 well, things that they need. Now after they incubate,  
14 where are they going to manufacture this? We hope that  
15 they manufacture it in Southern Virginia, so one of  
16 the ideas is to put together a advanced manufacturing  
17 center in Southern Virginia. The Halifax county IDA  
18 has really spear headed this. They bought an old  
19 factory that is 330,000 square feet that where jobs  
20 have been lost from the furniture industry, and went  
21 over seas. They bought this old factory, and they have  
22 been renovating it with grants and they are now in the  
23 third phase of that. It should be finished here, in  
24 early spring. Going into the second quarter next year,  
25 we will have the renovations complete on the first

1 section. The whole roof has been replaced, but this is  
2 a shell right now; it is empty. But the idea is to  
3 have multiple users, multiple industries, in this  
4 building working together, all sharing a commonality  
5 of, you know, advanced manufacturing.

6           Some of the spaces that we are going to set  
7 aside, about 15% is what we are estimating. What we  
8 set aside for research and development, and pilot line  
9 scale up, and workforce line and education. So that  
10 industries that are in here will sit on a panel of  
11 advisors, or a committee, that will decide what  
12 workforce training programs are needed for their  
13 workforce. What type of R&D is needed, and that space  
14 will be available for them to use in the building by  
15 the overhead of the leases that they are paying. That  
16 will come back to provide the cost sharing to run  
17 those other areas for workforce training, and R&D. So  
18 it will be like its own little ecosystem. So the  
19 companies that are incubations, and they need to grown  
20 into a larger facility to really start mass  
21 manufacturing their product, they can just start  
22 graduate naturally into this advanced manufacturing  
23 center. Next slide.

24 **(WHEREUPON, the next slide was displayed as Exhibit**  
25 **24.)**

1 So now I am going to talk about some of the projects  
2 that we have worked on in the past. Giving you some  
3 specific examples, so you can keep your mind wrapped  
4 around, so it is not so theoretical. One project that  
5 we worked on in our coatings facility, a large auto-  
6 manufacturer that you would recognize, and I cant  
7 mention their name. But they were building a new auto-  
8 plant in another state, and they didn't have it up and  
9 running yet. They couldn't shut down production at  
10 another facility, because that would stop profit from  
11 coming. So they needed help with developing a new  
12 coating process for their next car that was going to  
13 be manufactured.

14 They came here to our coatings facility and  
15 used the faculty, along with Kawasaki robotics, along  
16 with the companies that make the coatings themselves,  
17 the vendors that produce the coatings, the paint. And  
18 they worked, and they developed the processes on how  
19 they were going to coat this car on our simulation  
20 lines for coatings, and all that worked out of here.  
21 So that is the type of project that we can do; we can  
22 help companies do big projects like that.

23 The second project, over to the right there.  
24 Is that we work with Kawasaki in our modeling and  
25 simulation program to really, you saw the Kawasaki

1 robot in our coatings facility. That robot, you have  
2 to program with a hand pen; you have to type in manual  
3 commands with a hand pen to teach the robot the path  
4 that it should go along to spray paint, or whatever.

5 Well now they are starting to work with  
6 programs that you can do that in a computer, using  
7 simulation technologies, care technologies inside of  
8 the computer. You program it right there. Now we took  
9 that to another level. We said well can we take that  
10 automated, computerized, animated, path programing and  
11 bring it into the virtually reality 3D world.

12 So we worked on developing in computer  
13 software, out rythm that would take, this virtually  
14 reality world, and bring it into our cave. Our interns  
15 actually helped us do that, the interns that we have  
16 been working with. So the first time Kawasaki has ever  
17 had this type of capability, and it will show  
18 programming the robot inside a virtually reality  
19 world.

20 So you can do the programming first without  
21 doing it on the shop floor, you can do it and you can  
22 test out the program in the virtually reality cave;  
23 and then send that same program to the robot, and the  
24 robot will actually do it out on the shop floor.

25 The third project is in the lower left hand

1 corner. The University of Virginia had won an award  
2 from the school of architecture for disaster recovery  
3 homes. What this means is a small modular home that  
4 would be a rapidly manufactured and deployed to  
5 regions that would be some type of hurricane or  
6 national disaster that has displaced a lot of  
7 individuals from their homes, and need temporary  
8 shelter to stay in quickly. So the idea was to design  
9 a small modular structure that could be rapidly  
10 manufactured, flat packed into boxes and shipped all  
11 the way around the world and then rapidly assembled at  
12 the site within a day or two.

13           And it would also be energy efficient and  
14 low cost so the University of Virginia, school of  
15 architecture won an international award for their  
16 design, and they received grant funding in partnership  
17 with that award that they won to actually prototype  
18 these homes. In Southern Virginia, we had a lot of  
19 people that helped with this project. The southern  
20 Virginia Howard Education Center, R&D center for  
21 advanced manufacturing there, our modeling and  
22 simulation program did all the modeling, 3D modeling  
23 of the homes in a virtually reality world. We did all  
24 the coatings on the house, from the interior to the  
25 exterior coatings.

1 Local manufactures were used for the wood  
2 products that went into the home, like Huber that made  
3 the OSB boards. Then they actually made, what they  
4 call the stitch panels, the energy efficient panels  
5 that make up the house. All that was manufactured here  
6 and then sent to Haiti for field testing.

7 So those homes are now in Haiti, and I  
8 believe that they have one at the University of  
9 Virginia as well that people can go in and see the  
10 ideas to take these and start mass manufacturing and,  
11 commercializing. They are not there yet with the  
12 commercialization, they are still in the testing phase  
13 of all this.

14 The fourth is a new car, TMI auto-tech, so  
15 we will talk about them in the next slide. We will go  
16 into a little bit more detail about them.

17 **(WHEREUPON, the next slide was displayed as Exhibit**  
18 **25.)**

19 TMI auto-tech came out of Canada. They had the North  
20 American licence to make the car that you see in this  
21 slide; it is called the Ariel Adam. It is one of the  
22 fastest cars that we have ever tested on the top gear  
23 show.

24 It goes from zero to sixty in 2.5 seconds.  
25 It can go 180 miles per hour. They are actually

1 manufacturing these cars in Halifax county. They are  
2 situated at the Virginia International Race Way, which  
3 is here. Because of the Virginia International Race  
4 Way, companies like TMI auto-tech, are starting to  
5 build out a automotive cluster here, a manufacture  
6 cluster. We have a number of research assets that  
7 support the automotive industry, which I haven't  
8 talked about yet, but I will in the next coming  
9 slides. TMI auto-tech came here to manufacture this  
10 car in 2009, and the idea was to try to make twenty  
11 cars per year. They are actually making more like  
12 seventy cars per year, so it has done much better then  
13 we initially thought, or planned for. They had twenty-  
14 five employees now, and these are high skilled labor,  
15 advanced manufacturing type jobs.

16 Now they are wanting to design a new car. A  
17 high performance sports racer car that would look more  
18 like a formula one type of vehicle that has an  
19 inclosed body and shell around it. And to be able to  
20 make most of that car out of composites, like we  
21 talked about before.

22 So we helped them get research, helped them  
23 with their business plan, helped them get research and  
24 development funding to fund this new project, which  
25 you will see in the next slide.

1 (WHEREUPON, the next slide was displayed as Exhibit  
2 26.)

3 So the new car that they want to design, they are  
4 actually going to use all the research and development  
5 assets that are here in Southern Virginia to help  
6 design and build and test this car. From modeling and  
7 simulation to advanced manufacturing prototyping, to  
8 the composite slab that will be put in place. They  
9 will staff that many carbon fiber components from this  
10 facility, and then hopefully they will be able to use  
11 those carbon fiber composites to support other  
12 companies. So they want to sell that service to other  
13 UAV companies, aerospace, automotive companies, that  
14 need carbon fiber deposits. They are opening up a new  
15 business segment that will be a O&M provider of  
16 services to come to use these carbon fiber composites.  
17 But they are also going to manufacture them for their  
18 own cars.

19 So that is why we put one-of-a-kind that  
20 composite slab, and continued here. The coatings,  
21 again, it will be coating the cars in the CCARE  
22 facility, the components that go into the car. The two  
23 on the bottom, are acids that I haven't talked about  
24 before, but I am going to talk about them now.

25 In Halifax county we have the National Tire

1 Research Center which is a world class, facility. All  
2 of the GM tire's come through here to be tested. GM is  
3 a partner with Virginia Tech, this is a really,  
4 really, I think it is the biggest one of its kind in  
5 all the world. It can test timers up to 200 miles per  
6 hour on this test device. They get all the data back  
7 about that tire, and it builds the models. Physical,  
8 mathematical model around that tire, and how it forms  
9 dynamics of it, and then they build the rest of the  
10 car. The chassis, the suspension system all around  
11 that model, around that tire. So a lot of  
12 manufacturers are really starting at the tire level to  
13 be able to design the rest of the car, and that is  
14 what TMI is going to do with this new high performance  
15 car. They are going to start with the tire,  
16 mathematical model to better design the vehicle  
17 dynamics around that.

18           Then the last thing on the right there is  
19 the Solvomotion which is a vehicle that dynamic  
20 testing. It can shake the car 8 post shake rig and get  
21 the dynamics about suspension system about how the  
22 cars body handles under certain conditions.

23           So all of those facilities and assets are  
24 here in Halifax county, and TMI will be able to take  
25 advantage of all of those things to really design this

1 new car, and test it. Next slide.

2 **(WHEREUPON, the next slide was displayed as Exhibit**  
3 **27.)**

4 So we are coming up towards the end here. So how do  
5 you access these facilities here that we have? You see  
6 a lot of things here today, heard about a lot of  
7 things. They are really all readily accessible. You  
8 just contact me, Doug Corrigan, there is my email,  
9 dcorrigan@svpac.com., there is my phone number, there  
10 is my website, I am the point of contacts so if you  
11 need help with modeling and simulation or coatings, or  
12 business incubations, or whatever it is; just call me  
13 and we will talk about it. We will figure out what  
14 your needs are and how can we help you, so we will  
15 help companies in a lot of different ways. Depending  
16 on what you need, if we can't help you then we try to  
17 connect you with some of our partners that can help  
18 you. For example, we have connected people to the  
19 institute of Advanced Learning and Research and..., I  
20 think you had a webinar about that.

21           Sometimes they are better situated to help  
22 them and if it is a plant biotechnology type of  
23 project, then...can really help with that. We have  
24 connected projects to Virginia Tech, to UVA, to  
25 Virginia State, depending on who the experts are in

1 that field, we kind of know what is going on around  
2 the state. If you need help with R&D, or  
3 commercialization in some specific sector, we can  
4 usually connect you to the right people if we don't  
5 have the assets here already. So with the coatings  
6 center, like I said, we are moving into a new business  
7 model. So if you need help with coatings, let us know  
8 where you are at with that, and we will try to connect  
9 you with the industries that we are working with and a  
10 coating center that can help you. Other than that,  
11 next slide.

12 **(WHEREUPON, the next slide was displayed as Exhibit**  
13 **28.)**

14 I also wanted to let you know that Matt Leonard is a  
15 director of the IDA, and there is his contact  
16 information. He will be glad to talk to you too, about  
17 any of this stuff. If you need help with economic  
18 development in our region, or any other thing that he  
19 can help with, he is available as well. So either I or  
20 Matt can help you. Just give us a buzz, we are really  
21 open with talking with anyone to try to help them.

22 **With that, I think I will take questions.**

23 **BRENT SHEFFLER:** Great, Doug, thank you very  
24 much. Most of you who joined us in the middle of the  
25 program, you have been listening to Dr. Doug Corrigan,

1 executive director with the Southern Virginia Product  
2 Advancement Center. Doug it is just great to have a  
3 scientist that can put all this into layman's terms  
4 for you, which we very much appreciate what you have  
5 shared with us today.

6 So yes, we do have some time for questions,  
7 if our listening audience has a question, please post  
8 it in the question panel. Connie Long will communicate  
9 those questions to us, and we will take as many  
10 questions as we can before the close of the hour. So  
11 Connie, please go ahead with any questions that you  
12 might have.

13 **CONNIE LONG:** Thank you Brent, first  
14 question. What companies are using your very  
15 impressive facilities, and are you operating at  
16 capacity?

17 **DR. DOUG CORRIGAN:** Okay, so it depends on  
18 what you are talking about, which facility you are  
19 actually talking about. With modeling and simulation,  
20 TMI auto- tech will be using the virtually reality  
21 center to prototype their entire vehicle. We  
22 are working with other companies that are either in  
23 the process in moving to Halifax county to develop  
24 their next product line that will be here. So we are  
25 working with them on research and development, putting

1 together grants with them, etcetera. So I can't  
2 mention what their names are, but I will mention that  
3 they are in the, what you consider to be, the unmanned  
4 vehicle down type of space. So they will be taking  
5 advantage of the facilities we have here as well. We  
6 are not up to capacity, we definitely have more  
7 capacity to support more companies. That is something  
8 that we are always really keenly aware about. What is  
9 our capacity to help other companies? We are in a very  
10 rural area of Virginia. We are not in the tropical or  
11 metropolitan statistical area of the state, where  
12 there is a lot of research and activity happening.

13 So we have to go out and market ourselves  
14 and recruit companies here. So that is a lot of what I  
15 do, is go out to conferences where investors, and new  
16 technologies and new companies hang out. I attract  
17 them to come here. So by no means are we at capacity,  
18 but there are companies that are using the facilities.  
19 And some of them I can't say, because you have  
20 confidentiality agreements with them.

21 **CONNIE LONG:** Doug, is the product  
22 advancement center self sustainable, or will it always  
23 be need to be supported by Halifax?

24 **DR. DOUG CORRIGAN:** Right now its not self  
25 sustainable, it is that grant funds and other soft

1 money has been supporting for the last several years.  
2 We do have a plan to transition that to something that  
3 can be self supporting. It will probably take a couple  
4 more years to get to that point.

5 **CONNIE LONG:** How many of local people are  
6 employed at the facility?

7 **DR. DOUG CORRIGAN:** Okay, so right now there  
8 is myself, we have inters that work here. We also draw  
9 upon the resources of the IDA, which has three  
10 employees. So between all of us, I think that there is  
11 five people here that work together.

12 **CONNIE LONG:** Do other states have similar  
13 facilities to the product advancement center?

14 **DR. DOUG CORRIGAN:** That is a good question.  
15 A lot of states have business incubators. Business  
16 incubators are all over the place, we are apart of the  
17 National Business Incubator Association. In terms of  
18 being an advanced manufacturing incubator with the  
19 modeling and simulation and the coatings, and  
20 everything else we are trying to do in that continuum  
21 that I showed you. I don't know of any other research  
22 and develop and commercialization center that does  
23 what we do, and that is what I think is so unique.  
24 When you really add together carbon fiber composites,  
25 coatings, modeling, I am hard pressed to find another

1 example of that anywhere else. But there are other  
2 incubators that focus on other areas, you know. So  
3 like...focuses on the biotech, and CCARE focuses on  
4 wireless technologies and nuclear energy. When you go  
5 to other states, you start to see other examples, and  
6 other types of biotechnology or medical devices. But  
7 that space of modeling, and the coating, is very  
8 tangible product, no I don't know of any other  
9 examples of that.

10 **CONNIE LONG:** Doug, what are your  
11 measurements for success, physically, number of new  
12 products launched to the marketplace, number of new  
13 jobs created, and now that you have grown a new  
14 generator for the client companies.

15 **DR. DOUG CORRIGAN:** Yeah, so again a good  
16 question. Certainly since we are trying to bring  
17 products to market, we are very specifically geared  
18 towards innovated products. So things that are  
19 innovatively advanced state-of-the-art, erratic given  
20 product or technology. So how many, what is the number  
21 of innovative products that we have helped get to the  
22 market, or solutions we have, model solutions that we  
23 have helped use inside of their own operation.

24 Of course this is all geared around job  
25 creation, so that at the end of the day, how many jobs

1 have been required, created, in our region, what are  
2 the pay-scale of those jobs? Are they greater then the  
3 average in our region? The high paying, high skilled  
4 jobs for people that have to have a higher educational  
5 training level to do it, so that is another  
6 measurement of success. And this is a more of an  
7 intangible, a thing that we can not wrap a number  
8 around. But have we created an ecosystem where high  
9 tech companies can thrive here? So are we starting to  
10 create a cluster here? That the rest of the world can  
11 see this cluster forming, and it starts to have an  
12 attractive component to it where companies start to  
13 move here, or know more about us in Southern Virginia.  
14 So that is one of our greatest challenges in our  
15 region, is just getting noticed by other companies,  
16 getting noticed by the state, at the state level,  
17 getting noticed on a national scale. Because we are in  
18 a rural part of Southern Virginia, so are we able to  
19 move the needle with being recognized, and being put  
20 on the radar map for companies? I think we have done a  
21 really good job of that, you know just getting  
22 recognized with the programs and the unique facilities  
23 that we have put in place. You know, it has gotten us  
24 a lot of attention, and we have had people travel here  
25 from all around the world, around this country, to

1 come and see some of these things that we have in  
2 place now that is so unique.

3 So we have moved the needle there, and we  
4 hope over time this will start to prove itself out, or  
5 companies will come here, and we will be able to  
6 report job creation numbers, and it will be able to  
7 back all of that up.

8 **CONNIE LONG:** Does the product advancement  
9 center turn companies away that need help, but aren't  
10 quite the right fit for the business model?

11 **DR. DOUG CORRIGAN:** No, we never turn  
12 companies away, we might...I always try to help a  
13 company if they are not the right fit. We cant do all  
14 things to all people, obviously, we don't do  
15 everything and anything. So if a company comes to me  
16 and says "hey, we need to develop a new way to  
17 manufacture this palmer, this plastic material." You  
18 know, so how would I help that company? Well we would  
19 direct them to the Institute of Advanced Learning and  
20 Research.

21 Usually we can direct companies to any one  
22 of the universities or some of the other research, or  
23 one of the other energy centers, to get help if we  
24 cant help them with coatings or something else. We  
25 don't do everything in the coatings world either, so

1 something comes to us with a coatings need and it is  
2 just a type of company that we don't have the  
3 technologies for, it is so specialized, we will  
4 connect them to one of our partners or to one of our  
5 vendors to help them.

6 We have done that a lot of times. So, if it  
7 is a company that is going to incubate here, wants to  
8 move and grow here, and located their company here,  
9 then of course they get...they are a high priority for  
10 us, so we help them with raising funds, and grant  
11 funds, we help them with providing office space, and  
12 commercialization space and helping them develop their  
13 business family. We do put a lot of energy and time  
14 into the companies that locate here, but the companies  
15 that don't locate here, but just need access to the  
16 coatings facility for a small project, or they needed  
17 to use the modeling and simulation center. Yeah, we  
18 will help those companies. There is a fee, to use the  
19 modeling and simulation center if you want to use that  
20 for a day, or if you want to come to the coatings  
21 facility and use it. If you want to do something with  
22 advanced manufacturing, I would direct you over to the  
23 Howard Ed. Center, and they have their own way of  
24 working with business there, at the R&D center for  
25 advanced manufacturing. So, no we don't ever turn

1 anybody away, we try to connect you if we can, or help  
2 you here.

3 **CONNIE LONG:** Great answer, okay, I think  
4 this is probably our final question. In addition to  
5 what you described for the product advancement center,  
6 are there other models of tech transferring in  
7 commercialization that you would say represent a best  
8 practice?

9 **DR. DOUG CORRIGAN:** Yeah, you know different  
10 regions are known for different things. Like everyone  
11 knows a Silicon Valley Model, and how that has turned  
12 out. That story is a great model, or course we are  
13 never going to be...here. If you go to Memphis, they  
14 really have put the stake in the grass, and we are  
15 going to go over to medical device companies. People  
16 that manufacture orthopedics, and those types of  
17 things. So they are becoming known because of that. So  
18 that is a best practice. Boston, you know, they have a  
19 trillion dollar industry surrounding MIT, around  
20 biomedical. Research Triangle Park, not far from us,  
21 farm of bio and IOT. These are things that took 30,  
22 40, 50, years to develop. You know, Silicon Valley  
23 Model took that long, RTP took that long, Memphis is  
24 just getting started with their medical device. They  
25 are probably five to six years...so these things take

1 decades to reach their full potential. But you have to  
2 have a vision, and you have to have a focus area, and  
3 you have to stick with it for a number of years, and  
4 you really have to market yourselves, and just let  
5 that cluster just start to grow slowly, and it starts  
6 to accelerate as it becomes like a magnet. So you have  
7 to stick with it, you have to have people in the  
8 region that have a vision that will stay with the  
9 program, and invest the money in the resources in a  
10 period of decades. And if you people that want to see  
11 results in two years, and they try something for two  
12 years, spend some money, and nothing works, then they  
13 quit, then you are probably not going to see the  
14 results you want. So you got to have a region where  
15 everyone is working together, collaborating together  
16 with a strategic plan that spans over an entire  
17 region, and then have everyone work over years to make  
18 that happen, and that is what we are trying to do  
19 here. We are, you know like I said, since 2008 been  
20 doing this. So we are just getting started on that  
21 time scale.

22 **BRENT SHEFFLER:** Dr. Corrigan, thank you  
23 very much for your comments. I think that that was our  
24 last question. Thank you very much, Dr. Corrigan.

25 **BRENT SHEFFLER:** Thank you.

1           **BRENT SHEFFLER:** Thank you, I really think I  
2 got your enthusiasm for the Southern Virginia Product  
3 Advancement Center as contagious, and I think that in  
4 a decade this will be quite well known around the  
5 country side for a product advancement center, and  
6 what you are doing as a technology advancement center  
7 and commercialization. Those were wonderful examples  
8 that demonstrates the technology and the application  
9 that is taking place there, so thank you very much.

10 **(WHEREUPON, the next slide was displayed as Exhibit**  
11 **29.)**

12           Before we end today's session, I would like  
13 to acknowledge and thank the many people and  
14 organizations who contributed to make today's webinar  
15 possible. Here are just some of the names of those who  
16 have served, and I would also like to especially make  
17 a shout out to Matt Leonard, the executive director of  
18 Halifax county industrial authority, for his  
19 leadership, and supporting this type of development  
20 center in the region, and for that regions, and for  
21 that communities support for the Southern Virginia  
22 Product Advancement Center. What a great research  
23 center that we have in Virginia for that. And Connie,  
24 thank you for your efforts, and of those of you at  
25 VEDP, and also the Veterans Reporters for

1 transcription services that we enjoy as a result of  
2 the sessions.

3 **(WHEREUPON, the next slide was displayed as Exhibit**  
4 **30.)**

5 Just a reminder, those of you who would like to review  
6 this, and the transcripts, can go to the VAallies.org  
7 website to review the webinars today, and also this  
8 one that will be posted here shortly. This session is  
9 being recorded, and will be posted on the Virginia  
10 Allies. org website.

11 **(WHEREUPON, the next slide was displayed as Exhibit**  
12 **31.)**

13 Those of you who attended today's webinar, thank you  
14 for joining us. And thank you for your participation,  
15 those were great question. We hope that you will be  
16 joining us again on Wednesday, January 21, 2015. That  
17 is next year, for our next third Wednesday Webinar,  
18 and the topic is Virginia Jobs and Investment  
19 Partnership. We will provide you will a new, I am  
20 sorry, that is Virginia Jobs and Investment Program.  
21 And we will provide you with a new program update,  
22 just sharing with you what is taking place  
23 organizationally, and also what the program is all  
24 about for those of you who might like a refresher.  
25 During this webinar, we will not only provide you with

1 that, but our speaker will be Frank Strickler, senior  
2 manager with the Virginia Economic Development  
3 Partnership. There is no cost for registration. My  
4 colleague, Lauren Steeleger, will be your host. I will  
5 be out of town that day, but she will serve as your  
6 host. We look forward to having you with us on January  
7 21st, in the new year. For the start of our 2015 Third  
8 Wednesday Webinar series. Until then, goodbye  
9 everyone. Merry Christmas, and have a happy new year.  
10 Thank you.

11 **(WHEREUPON, the Webinar was concluded at 2:57 P.M.)**

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## 1 STIPULATION

2  
3 The foregoing matter was taken on the date, and at  
4 the time and place set out on the title page hereof.

5  
6 It was requested that the matter be taken by the  
7 reporter and that the same be reduced to typewritten  
8 form.

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