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>> I am just doing a sound check. We will get started in five minutes at 2:00.

>> We are trying to rectify a technical glitch. Hold on.

>> We are still trying to work out the issue. It should only be a few minutes. Please, hold on.

>> Good afternoon. Sorry for the delay. We should be good. My name is Joe from GPO. I am with my colleague Corey. Welcome to the Academy. We have a terrific webinar today. I tried to get the BLS for a long time and did not have good luck. My colleagues did. We are happy to have this webinar today. Titled, the occupational Outlook handbook information on hundreds of occupations in the United States. With us is our presenter, Domingo. He is an economist in the employment projection program. Where he has served since 2011. He has worked on numerous occupation, occupational profiles for the Occupational Outlook Handbook. And is the author of several articles for the career outlook. He works on updating the Occupational Outlook Handbook and career outlook websites which involve occupational research and creating interactive charts. Infographics and videos. Domingo has a bachelors degree in economics from the University of Maryland. And a Masters degree in applied economics from Johns Hopkins University. If you have any questions or comments on the presentation, feel free to chat them in the chat box. I will keep track of all the questions. At the end of the presentation, I will read them back to Domingo and he will respond. This presentation is different. Domingo, is screen sharing the presentation. In order to get to the chat, go to the blue box at the top. You should be able to access the chat. You will exit his screen sharing at the end of the presentation. We are recording today's session and we will email a link to the recording and the slides to everyone who registered for this webinar. We will also be sending you a certificate of participation using the email you used to register for today's webinar. If you need additional certificates, because multiple people watch the webinar with you, email and include the title of today's webinar along with the names and email addresses of those needing certificates. If you need to zoom in on the slides

, click on the fullscreen button at the bottom left side of your screen. To exit full-screen mode, mouse over the blue bar at the top of your screen so it expands and click on the blue return button. To get back to the default. Finally, we will be sharing a satisfaction survey with you at the end. We will let you know when the survey is available and the URL will be available in the chat box. Also, keep in mind to reserve your comments about presentation style and value for the webinar survey. And use the webinar chat box for questions you would like to ask the presenter and to report any technical issues you may encounter. I will hand the microphone over to Domingo who will take it from here.

>> Good afternoon everyone. Thank you for the introduction. And thank you everyone for joining us on this webinar. Today's presentation, I will go over, employment projections, background and publications, the state of the Occupational Outlook Handbook. And features of it. At the employment projections program, we produce and deliver career information, labor market analysis and projections to support an informed decision-making by students, jobseekers, educators, policymakers and researchers. I will stop by first going over the uses for our data. A wide variety of people use employment projections data. This includes but is not limited to, career counselors and students making career decisions. Jobseekers looking to find work or switch occupations. State education programs. Reviewing curriculum. Researchers interested in how the economy is changing. We have two publications. The first is the Occupational Outlook Handbook . And the second is the career outlook. A bit of background about the OOH . It was first published in 1949. To provide career guidance to World War II veterans. It provided occupational information such as what they do and how to become one. It was a physical handbook until 2012. The cover is on the right-hand side of the slide, it is an actual cover from past handbooks. In 2012, we released a web only version. Meaning the entire OOH and all 300+ occupational profiles were available online. In the last three months, we have received about 6.5 million

page views. Which makes the OOH currently the most viewed product on the BLS website. The handbook has 325 occupational profiles. Which covers 568 occupations. And it is available at BLS.gov. A second publication, the career outlook is published throughout the year. And includes articles with practical information on jobs and careers. We also have articles which focus on specific data set, often times it will be about employment projections data and we plot it on interactive charts and include a paragraph, to provide the users context and explain the data. We also have interviews with every day workers. And interviews with workers in unusual careers. The career outlook is available at BLS.gov. Today my focus will primarily be on the OOH . In the OOH we include occupational wage data . Our bread and butter, we have employment projections data. Specifically we have projected fastest-growing occupations. We have projected most new jobs. Projected occupational openings. And education and training assignments. Let's take a break from the background information and test our knowledge. The question is, if you were to guess which occupational group is projected to have the fastest employment growth from 2018 until 2028, which would you guess? Construction, legal, education, healthcare support occupations or management occupations. I will give everyone a minute to think about that. The answer is, healthcare support occupations. This group includes occupations that assist in providing healthcare like home health aide's, nursing assistants, occupational and physical therapy aids and assistance. Medical assistance and pharmacy aids. Let's jump into some of the data. Here we have the 10 fastest projected growing occupations. On the left-hand side, we have the percent change. And to the right of that we have employment change. In numerical terms and to the right of that we have median annual wages for May 2018 for those occupations. Looking at this chart, eight of the occupations have a median annual wage higher than the median annual wage for all occupations. Which was 38,000. At the top, solar installers are projected have the fastest employment growth at 63.3%. But this occupation will add relatively few jobs. 6.1 thousand from 2018 until 2028. Because of the small employment size in 2018. The same could be said about wind turbine service technicians which is growing at 56.9%. In actuality, it is only amounting to 3.8 thousand occupations over the projection period. Because the occupation is so small. You will notice that six occupations on this list are in healthcare. You have home health aide, personal care aide, occupational therapy assistant, physician assistant, nurse practitioners and speech language pathologists. With respect to healthcare occupations, what explains this is demographic changes. The population is aging and the demand for healthcare is projected to increase. And our projections reflect that. We have the 10 occupations projected to have the most new jobs between 2018 and 2028. Along with the median annual wages for May 2018. The top four occupations I would like to highlight, which are the personal care aide, combined food prep and serving workers including fast food, registered nurses and home health aide. Again, the aging population and the demand for healthcare are expected to drive the growth for these healthcare occupations. And population growth is leading to demand for more food made outside the home, which leads to increased employment combined food prep and serving workers, including fast food. Take note here, registered nurses, software developers and general and operation managers had a median annual wage higher than the median for all occupations. Which is \$38,640. The other day to what that we produce are occupational openings. The sources of openings over the projection are openings from new jobs from projected growth and openings from existing jobs from the need to replace workers who leave permanently. Either due to occupational transfers or due to workers leaving the labor force such as retirement. On this slide, projected occupational openings due to separations are broken into two components in yellow. The first bar, occupational transfers. These are workers who are projected to separate due to permanently transferring from an occupation. In the second bar, workers who are projected to leave the labor force. Occupational opening is due to separations. Are projected to outnumber openings due to growth. The bar in green. Because most occupations can expect higher rate of laborforce exits -- over the decade. Here we have another look at the data. But also this graphic shows us that some of these components gives us the total number of job projected openings on your

for the 2018-2028 decade. The example we looking at is for registered nurses. The annual average in thousands for registered nurses is about 210,000. Occupational openings. This data is useful because the projected job openings total gives us a measure of opportunities, jobseekers may expect annually in a given occupation. Opportunities, because jobs were created from projected growth or from the need to replace workers who leave permanently. On this slide we have 10 occupations expected to have the most total occupational openings due to both employment growth and separations. Noting here that of these occupations, none make more than the median annual wage for all workers. \$38,640. And for some of the occupations such as retail salespersons and cashiers, openings are expected to result from the large number of workers leaving the occupation permanently. For other occupations including personal care aide, openings that result from leaving the labor force permanently. Such as to retire. With that background information provided, where do you get the data? This slide shows the employment projections. The first thing you would do is click on data. You will click on databases. And the data set that you are interested in will be the occupational projections data. We want to click this right here. And it will take you to this page. I have gone ahead and already entered my keyword which is registered nurses. The role we are interested in is the third row. Because we are looking at occupational openings, the column we are interested in is right here. As you can see, it shows us that the occupational openings

, annual average for the 2018-2028 decade is 210,000 on average per year. By default this page will include all the data that we provide. You can see that you can show or hide whichever variable you want to show. If you do not want to see typical on-the-job training, you can click and it will hide that. When you have the data that you do want, you can then export it to a CSV file. You would be able to work with it in Excel. I will take a little bit of time to talk about the education and training classifications. We have three categories of information we assign for each occupation. The first is education typically needed for entry. The second is work experience in a related occupation typically needed for entry. And then we have on-the-job training typically needed to obtain competency in the occupation. These are education and training classifications. Each detailed occupation has been assigned by us with a classification. I will go into detail here. There are eight levels of education typically needed for entry. For each detailed occupation we assign one of eight classifications. And those eight classifications are no formal education credential. High school diploma or equivalent. Some college, no degree. Post secondary known degree award. Associate degree. Bachelors degree. Masters degree and doctoral or professional degree. With respect to work experience, in a related occupation typically needed for entry, there are three possible assignments. There is the assignment of nothing. Less than five years and five years or more. We have assignments for on-the-job training. Typically needed to obtain competency in the occupation. This is after someone is already in the occupation. And there are six possible assignments. The first is nothing. Short-term on-the-job training, moderate term on-the-job training, long-term on-the-job training, apprenticeship, and internship, residency. Here we have the eight education classifications. I will preface this slide by saying educational assignments are based on the level of education most workers typically need to enter the occupation. On this slide in 2018, most employment was in occupations that typically required a high school diploma or less. About one third of occupations in 2018 were in occupations in which workers typically need some post secondary education to enter. Important to note here. This data reflects the sum of 2018 employment four occupations assigned to each education category. This is not the same as account for the number of workers on a specific level of education in each of these categories. Since workers may have attained education that is either higher or lower than typically needed for entry in the occupation in which they are employed. The median annual wage for all workers was, \$38,640. You will notice that wages are much higher in the bachelors and higher degree categories. With the median annual wages above \$69,000. In all three categories. Occupations in the Associates degree category were about \$53,700. And wages fall off considerably after that. The median annual wage for occupations that typically require a Haskell diploma for entry was about \$37,000. There are

higher paying occupations in this category. But all of the higher-paying high school level, high school occupations require additional preparation in the form of work experience, on-the-job training or both. We looking at projected percentage growth by typically, by typical entry-level education. Occupations that typically require a Masters degree for entry are projected to have the fastest employment growth during the 2018-2028 decade. That is followed by Dr. Or professional degree occupations. And then occupations that typically require postsecondary degree award or higher education are projected to have faster rate of employment growth than the average for all occupations, which is 5.2%. Now let's get into the features of the OOH. We are looking at the OOH homepage. The conventional way of finding an occupational profile that you're interested in, is to look at first the occupation group. Find something you are interested in. For example I will click on architecture and engineering. From this landing page you select an occupation you are interested in. I will click on architects. At that point it will take you to the occupational profile. You will notice there is the summary tab, what they do, work environment, how to become one, pay and job outlook. In the job outlook section, you will see the projection for this occupation, which for architects is projected to grow 8% over the decade, 2018-2028 decade. Which is faster for all occupations. Which is 5.2%. We see the projection for architects compared with the total for all occupations on this chart. This paragraph provides a little bit of narrative for the projection. And you have the projection table for this occupation, which I will get into later. There's nothing wrong with going about that approach. Being on the homepage and going to an occupational group and finding a profile that you're interested in. Often times you may not know what occupation you are interested in. There are different ways to find occupations in the OOH. There are three different paths or entry points. Occupation finder, using the a-Z index. And using the occupation industry tables. Which gets into the occupation industry relationship. The first is the occupation finder. You are not sure what occupation you are interested in. One piece of information that you have is that you have a high school diploma. What you do is you will click on entry level education and you select high school diploma or equivalent. And you click, go. It will take you to the results page. What I have done here already is sort the data to show median pay in descending order. \$80,000 or more. And read off some of the occupations from the list. The first is transportation, storage and distribution managers. Then you have nuclear reactor operators. And it skips ahead. Commercial pilot. And elevator installers and repair. You can click any of these links and it will take you to the occupational profile. Another example, let's say you want to do a more specific search. You want to look at the highest paying occupations. You click on 2018 median pay. You click on \$80,000 or more. And you want to look at occupations that are growing the fastest. You click on for the growth rate faster than average. And you click, go. With those categories selected, it will take you to this list. In this case I have gone ahead and sorted by the projected number of new jobs. In descending order. These are occupations that are projected to grow 50,000 or more. We have financial managers, management analysts. And skipping ahead we have physical therapists and software developers. Clicking on this again will take you to an occupational profile. You end up in an occupational profile but the way in which you got to that profile is different. You are not sure about which profile you wanted to look at to begin with. The other approach for navigating the OOH is to use the A-Z index . Let's say you don't know what the occupation title is but you have an idea. This is helpful when you have a job title in mind but you are not sure which profile in the OOH that job title you are interested in, is in. We are on the OOH homepage and the A-Z index is available here. You will click that. Let's say you went to get a new prescription for your eyes. And you got interested in the eye doctor profession. And you are not too sure about where I doctors are in the OOH. What you could do is click on the A-Z index and do control F. Find keywords in the page and you type in eye doctor and you see that I doctors are actually covered in the optometrist profile. You would go ahead and click the optometrist link and it will take you to the OOH profile for that occupation. Another example, whenever we go to Michael local high schools to present the OOH , they oftentimes have an idea of what they want to do. They say they may want to be an anesthesiologist. When they go to the

OOH they are not sure about where anesthesiologists are. In this case, the A-Z index is helpful. You can do control F and look for and seize geologist. And see that they are a type of physician and surgeon. They are in the physician and surgeon profile. A final example, let's you want to be a movie critic. And know idea where that would be in the OOH. It is in the reporters corresponded and news analyst profile. The final entry point for the OOH is using the industry occupation tables. Here we are in the job outlook section. Looking again at this table for this occupation. What you want to click is this link where it says, get data. And it will take you to this page. This is architect employment broken down by industry. We all know that architects can work in different firms. But often times people don't think about that they can work in different industries as well. For example, architects work in construction, they work in manufacturing. One way to look at the data is to sort 2018 percent of occupation. Here sorted. It is in descending order. We see that architects in large part are employed in the architectural engineering services and related services. About 68.7% of them are employed in that industry. What we can do now is click on this link. This is the industry. Now we are looking at occupations that make up the industry. Which occupations are employed in the architectural engineering services industry? Again, we can sort by the 2018 percent of the industry. And we can see which occupations make up the most of the industry. For example we see that engineers make up about 25% of the industry. And specifically civil engineers make 11.5%. Looking at architects we see the make up 6.2% of the industry. That gets into a little bit of the industry occupation relationship. Which is important to consider. It broadens the opportunities when considering occupations. Certainly it is important to think about what occupation you want to be in. You also want to think about what industry you want to be in once you are in the occupation. I want to take this opportunity to advertise our new OOH app . Which is called career info. We are hoping that it will be available by September 30. Will be available on the App Store for Apple and for android it will be available on Google plate. As of now the first iteration of this mobile application is re-creating the occupational Outlook handbook in a mobile application platform. Moving forward, we are hoping to include other features such as the ability to browse occupations and swipe left to say you are not interested in the occupation and to swipe right to say you are interested in the occupation. Any end you will have a list of occupations that you selected and something you like. And you will have the ability to compare the occupations quickly. So at a glance you will be able to see the projected growth, wages and the education typically required to enter the occupation. If anyone has any questions, I am happy to answer any inquiries you have.

>> Thank you. A great presentation. Anybody have any questions for Domingo? I do not see any. Please send those in. Domingo, do you want to stop the screen sharing and we will go back to the other screen. There we go. I think you are still screen sharing. You may want to go to the last slide. It shows your contact information. There you go. Here we go. Here is a question from Lisa. A shout out. She says I cannot wait to try it. I feel the same way. Would you be considering combining some of the features and the career outlook in the upcoming app for OOH?

>> Of course. The great thing about having the career outlook in the OOH we already have content that we are ready to put in the mobile application. If that is a possibility, we are going to do that.

>> Any other questions? I have a couple of questions myself. One of the slides, I think you had, a breakdown salary, certain education levels. Was that ever broken down by -- for colleges. The various majors and what various majors would make? I don't know if that is there somewhere in all of your data. We thought about that. Is a product we are working on now. As of now, it is not available. At some point in the future, we will have available degree pages. We may include that in the mobile app as well.

>> I think some kind of initiative to have colleges list out their information by their majors. I have another question. The various occupations and wages, is there any information on wage growth? In other words, let's say start in an occupation at a certain level. And estimated five years, 10 years or

whatever. You would hope to grow to a certain level. Anything like that contemplated or in existence right now?

>> Nothing at the moment. The wages that we use come from a different program called the occupational employment statistics. That may be something that they can look into. As of now, no. No information to indicate growth with respect to wages.

>> Okay. Some occupations, you get in them and you stay there. Others, you can jump pretty well. Any questions for Domingo from the audience? This is a great presentation. I will jump into this app. Here is a question. Is there a state-by-state data available? Comparing states.

>> Thank you. That is a good question. What I did not mention, the projections are for the national level only. However, states use our data. And the website for that sort of repository for state projections, I believe is [projections central.org](http://projectionscentral.org). -- Projections central.org.

>> Thank you. Any other questions?

>> It looks like we have a question. Is there an email feature for the OOH ? Do you mean submitting inquiries for specific occupations? If you email OOH info at [BLS.gov](mailto:OOH@BLS.gov), we will get back to you with any specific questions about an occupation you may have.

>> Another shout out from Lisa. Any other -- Patricia says, great presentation. Can you repeat the website for state data.

>> [Projections central.org](http://projectionscentral.org). I believe it is correct. That is the site in which the data is available from the states.

>> Any other questions? We have time. We have a good bit of time if we need it. Now is a good opportunity to get some great information from Domingo. The app is available on the 30th. I will definitely download that.

>> Hoping that it will be available on the 30th. We will be advertising the app on the BLS.gov OOH homepage. If everyone is familiar with QR codes, you can just point your phone to the screen and scan the QR code. It will take you to the App Store or the Google play store and you can download the app. If you're interested in downloading the app, check the OOH homepage .

>> Will it contain everything from the regular OOH accessible via the app?

>> For now, because will be the first iteration, it will contain only information from the summary tab of the OOH profile. We will be building upon it.

>> Okay. We have a couple of comments. Holly says, the website is [projections central.com](http://projectionscentral.com). She put that in the chat box. Nancy says, is there a description of how or where the source data is collected?

>> Yes. We have a handbook of methods which goes over the methodology behind putting together the 2018 data, the base year data. And 20/20 a projection. Just to give you an idea, Nancy, to get the base year data we use QC EW. Which is another BLS survey. We use their industry employment, excuse me, I think it is a staffing pattern for the industry. We use CES industry employment. And we use OES occupational staffing patterns to get a number for the 2018 occupational employment.

>> Great. Are all those things you mentioned lengths off of your website somewhere?

>> It is. I follow-up with an email to you Joe or Nancy directly if you would like. As to where that page is available.

>> That is great. Anime questions for Domingo? We are still good on time.

>> Patricia, as of 2012 the OOH is no longer in print . It is completely online now. But you will see the OOH available on the bookshelves still. Those are coming from private publishers. Good information. Any other questions for Domingo? A thank you from Patricia.

>> In the past, the OOH was updated every two years . This year is exciting because it is the first time we are updating it on a yearly basis. Moving forward it will be updated every year.

>> That is terrific.

>> Let me correct myself.

>> It is probably too much work to update it more frequently than yearly.

>> Let me correct myself. Every year we update the projections. But the OOH is updated on a flow basis.

>> Good. Any other questions? Patricia gives you a thank you. We have time for questions. Here is a good question from Alice. At the beginning of the presentation there was previous OOH in print . Will there ever be digitized -- that is for GPO. That is a good question. I will take it up with some of our GPO staff that work with that. Or anywhere. Have you guys digitized your old OOH ?

>> I am not sure.

>> I will definitely ask the question in GPO. We are always adding to get info. That may be a good add. That would be very interesting. Any other questions for Domingo? This is good. Much more than we usually get. We have time to go into this. That is good. Okay. Keep the questions coming. I will go into my wrap-up comments but we have a good bit of time for questions. We can go until 3:00. Corey just put a satisfaction survey in the chat box. Please fill that out. We would like your input on that. Corey will also put the information about the Academy, if you want to see this webinar. It should be up tomorrow or the next day. We have two places. A really nice searchable place with the webinars from the last two years and we have the older site which includes older webinars. Which you can access. Here is a good article by my former colleague used to be a writer, editor. Talks about the Academy. Webinars, conferences. We have a conference coming up next month. Please register for that. A lot of programs we are streaming and recording a lot of them. It is in Crystal city. Right outside of Washington near the Pentagon from October 21 until 23. Think about that. Another shout out. Keep the questions coming. I will go into the wrap-up comments. I would like to thank Domingo for a terrific webinar. We would love to have him back. He has a wealth of expertise and can talk about other BLS issues and update us on this topic. We are hoping he can come back. This is the last webinar. I would like to thank Corey for keeping everything running smoothly today. And thank you audience. I hope you enjoy the webinar as much as we did at GPO. This is the last webinar for September. The conference, think about that seriously. It is a great conference. We have on-site attendees, about 300. We have vendors. Exhibiting. A lot of good programs. Check that out. About 200 people come in virtually for some of the major programs. You will receive notice of all of our upcoming webinars when they are announced. You can sign up for our email alerts. From the webpage which is linked to the index at the bottom, you can view a calendar of upcoming webinars and other events, access past webinars from the webinar archived and you can also fill out a web form to give webinar. We have library and to give webinars for us. On any topic. If you presented at a conference or presented training locally or in your library. It has brought application. Think about presenting a webinar with us. Let's see if we have any last comments. Any other questions for Domingo? Last chance. You are getting shout outs. A lot of good praise, Domingo. It looks like you have covered all the bases, Domingo. And answered all the questions. I think I will close it out. It is almost 3:00. I would like to thank you one last time, Domingo. Fantastic job. Thank you Corey and thank you audience. Come back for more webinars and our conference. Have a great rest of the day. [Event Concluded]