Tina Ngo Bartel: Hello everyone. My name is Tina Ngo Bartel. I'm the Director of the Center of Excellence for Labor Market Research here in the San Diego Imperial Region. Today I'll be presenting to you about our regional labor market information. And this is number two of a series of three webinars that we're hosting for our K12 partners as they prepare for their SWP Applications. If you're not familiar with the Centers of Excellence, we are the number one source of labor market information for the California community colleges. There are actually 10 of us funded by both the Economic Workforce Development and Strong Workforce Program funding sources.

 If you want to see all of our statewide related reports, there's a link here for a statewide site at coeccc.net. And everything that you see on that site that is related to San Diego and Imperial Counties is also on our regional site, which is written here myworkforceconnection.org/lmi. A lot of the resources on the site will be mentioned during my presentation. So feel free to get back to the site later on whenever you do start writing your applications.

 On today's presentation I'm going to walk you through three different objectives. The first one is to understand what is LMI and why is it important. The second objective is to learn what regional LMI resources are available. And then finally, I want to give you some ideas on how you can use the regional labor market information for your SWP Application. So let's get started first with the first objective and why LMI is so important.

 First to know what LMI is, we look at the sources of research in labor market information. So labor market research is typically categorized into two categories, demand and supply. So when we look at our economy and labor market as a whole, we try to figure out where is a demand for jobs, basically what employers are looking for in terms of skills and occupations, and then we look at the supply, so what are our educational institutions producing in a specific region in order to meet that labor market demand.

 So the table that you have here is a little convoluted, but let me walk you through what it entails. So on the demand side we collect survey responses from employers and workers. And when I say we, I actually mean the Labor Market Information Division or LMID from the Employment Development Department, EDD at the state level. So EDD collects survey responses from employers and workers and they aggregate that data and they send it to the US Bureau of Labor Statistics.

 So whenever you hear information about jobs in the economy and where all the jobs are growing across the whole nation, every state has institution similar to EDD and they all send their data over to BLS. So most of the data that we get on the demand side is from EDD and other public sources.

 On the supply side, so the right side of the screen, you'll see that there are two different sources for supply. So one is the community colleges and the other is non-community college institutions. So both community colleges and non-community college institutions have to report the data to a national clearinghouse database called IPEDS. And the community colleges report to something called MIS Data Mart. So at the chancellor's office at the state level, they ask for community colleges to report their outcomes data and order for the chancellor's office to provide funding, resources and so forth.

 All of that information is gathered into something we call a COE Supply Table. So the Centers of Excellence across the states look at all of the supply data and we've created tools on our website for people to use in order to compare what the colleges and institutions are providing verses that demand that I mentioned a second ago. All of this data wraps up and then we put it into our COE reports. I didn't mention earlier, but on the demand side, it gets filtered into some data aggregation tools like EMSI. That's a program that is a proprietary source that typically you have to pay for a subscription service and because the COE has access to EMSI, we put that information into our COE Demand Table and table and then we gather it all together to be to create our COE Reports.

 For anything that we can't get publicly available information for on both either demand or supply, then we do regional employer surveys. So that creates a little bit more work on our part because we had to provide resources to survey our local employers. So now that you know where labor market information comes from, let's talk about why this is important. I shared with you a lot of data. It probably is a little bit convoluted, but I want to bring it to a higher level so you can see where it is in the more general context.

 Why do we even need to respond to labor market demand. So there was a San Diego County Economic Round Table that was hosted earlier in January this year. This Economic Round Table comes up every single year and at the Economic Round Table we look at trends in the economy and specifically in San Diego County. So I'm going to borrow a couple of slides from Ray Major who was the chief Economist at SANDAG. If you're not familiar, SANDAG is our regional planning authority. So they use population and economic trends in order to figure out how to use our local resources and planning, road transportation and other services.

 There's also a link in the slides for the Economic Round Table notes if you're interested in more regional economic information. So borrowing from SANDAG, the reason why we want to look at LMI, is that in our county, at least for San Diego County and across the entire nation actually, the population is going to grow. So SANDAG projects that between now and 2050 our population is going to grow up to 4 million people. That's an increase of 700,000 people between now and 2050.

 That means in San Diego County alone we need to create 400,000 more units and 360,000 more jobs just to sustain that population growth. So, why does it matter that population has increased over time? Well, in San Diego County if you look at the real estate market you'll see that the supply of residential housing has not kept up with the demand for the population growth. As a result of that, our median home prices have risen up to $637,000. This, of course, shows how difficult it is to survive in San Diego. The cost of living is incredibly high.

 So we at the Center of Excellence when we provide our research, we try to target in demand jobs so that way individuals that are getting out of training can get jobs that are paying well enough that they can afford to live and stay in San Diego. So according to the research that the Center of Excellence did here in San Diego Imperial we found that out of the 1.5 million jobs, nearly 1.6 million jobs in the county 38% of them are in the middle-skills job market.

 So what are middle-skill jobs? We define them as occupations that require a high school diploma or above, but below a four-year degree. When you look at this pie, or basically at employment in San Diego County, middle-skill jobs make up a larger percentage than what we call above middle-skill jobs. Above middle-skill jobs are those that require a bachelor's degree or higher. Typically, whenever we hear about the job market, we always hear about the demand for engineers or those with these really high levels of education, but when you look at this, you can see that middle-skill jobs actually make a big proportion of the San Diego economy.

 That's why the COE and career education is focusing so hard in promoting our programs because we still have that middle-skill jobs gap. So not only do middle-skill jobs make up a big portion of the overall employment in San Diego County, they actually pay very well. So in a recent report titled Opportunities for Career Education to Close the Middle-Skill Jobs Gap, we found that middle-skill jobs actually pay more than the self-sufficiency standard or the living wage in San Diego.

 And then we narrowed it down to the top middle school jobs. So out of all the middle-skill jobs, what are the highest paying ones and the ones with the most labor market demand. We found that those top middle-skill jobs pay about $26.77 per hour, when compared to the living wage or the self-sufficiency standard in San Diego County, an individual, a single adult needs to make at least $15.99 an hour. So if you look at this chart here you'll see that our middle-skill jobs and the top middle-skill jobs pay more than all jobs in general in San Diego County and above that self-sufficiency standard.

 Again, another reason why we need to look at the labor market information and focus a lot of our training into this middle-skill job market. Now that we know what LMI is and why it's important, we're going to move into what regional LMI resources are available. So I mentioned this earlier, but this is our regional website, myworkforceconnection.org/lmi. When you go to this link, you'll land on this landing page and it'll give you information about your regional COE, well, the community college's COE and has contact information for myself as well as our research analyst John Edwards.

 And this site here is basically our one shop stop for all of the LMI resources that John and I have created for the region. If you scroll down a little bit further, you'll see a thumbnail for our Career Education Guide and I'm going to walk you through each of these resources pretty quickly because at the end I want to share with you how you can use the resources for your actual application.

 In the Career Education Guide you'll find our nine priority and emerging sectors at the community college level and you'll also find some of the career pathways from the California Department of Education and what those pathways feed into or which sectors those pathways feed into. Within those pathways we also included a list of in demand jobs and some of their wages. So that's some labor market research there that you can use in your applications. Next you scroll down a little further.

 So we created nine posters for nine of our priority and emerging sectors. On our regional site you'll see a link for a San Diego County posters. Here on the webinar we included or Imperial County posters as a link either in the slide deck itself, or you can see it down below. In each of these posters you'll see that there are fun facts and some top jobs that are attainable with the community college education, either with some post-secondary education such as or certificate or an associate's degree or higher.

 So if you scroll down a little further on our regional page, you'll find our labor market briefs. The labor market briefs are more granular down to the occupation level. For each occupation you'll find information such as job growth, institutions that supply program awards for those jobs as well as some skills that employers are looking for in job postings. So if you scroll down you'll find San Diego County's labor market briefs and each link here if you click on it will take you to a separate report.

 If you scroll further down, you'll see Imperial County and a list of reports specific for Imperial County. We have about 70 different briefs, 70 plus labor market briefs on the site. So we talked about some of the regional resources. We also have a statewide resource called the Cybersecurity Labor Market Analysis and Statewide Survey Results Report. This report looks at labor market demand and program supply for cybersecurity occupations in the state of California. If you're planning on creating cybersecurity programs, you can use this report for your application. There's a link for the full report and only for the report summary.

 Next we have a report on Life Sciences and Biotech. Again, this is at the Statewide level. So the Centers of Excellence across the state teamed up together to create this Life Sciences and Biotech Middle-Skills Workforce report. In the report same thing, we look at demand and supply. This one was released in September 2017. However, the data for the report is still pretty relevant. Our reports usually at the statewide level have a shelf life of about two to three years. So if you click on the link that we provided to you, you can get access to that full report.

 Unfortunately, this one doesn't have a summary so you might have to dig in there for some data. Next thing I want to share with you is our Southern Border Region Career Coach resource. So the Career Coach is actually an online tool that our local workforce Development boards in San Diego and Imperial Counties. They purchased this to provide it for our region as a resource. The Career Coach, the purpose of it is to help students and counselors and teachers and parents essentially explore careers as well as help students take assessments so they can learn more about themselves.

 In the previous webinar you were exposed to our Career Development Continuum, and this was shown for both our middle school and our high schools stakeholders. So in this continuum, we explain the idea of self-awareness followed by career awareness, career exploration, career preparation, career preparation in terms of practicum and internships as well as career training. So the Career Coach actually helps us in this continuum if you take a look at the links that I included here or if you go onto the website and you take a look at the options that are there, there's an option to take a career assessment.

 If you take a career assessment or a student takes the career assessment, they can learn a little bit more about themselves in terms of their interests and those interests will lead to job options or job ideas for the student to explore. The second option in this Career Coach tool is that students can just browse careers. So there are over 800 occupational titles in this website as well as through many public resources and to explore that many careers might take a lot of time, which is why we at the Center of Excellence recommend that you look at some of the reports that we produced and narrow down your career search by typing in those career titles inside that search form.

 So again, this tool can help with self-awareness, career exploration and career awareness. Now that we know what the regional LMI resources are, now we get to the good part, how to use this labor market information in your application. So labor market information is mentioned in the application for strong workforce a few times, primarily on page 3 and on page 23.

 So on page 23 the application asks you to describe why the industry sectors and pathways are selected and explain the regional economic need. Labor market is mentioned a couple of times in the application. You'll see it on page 3 and on page 23 primarily is where you want to focus. On page 23 the application asks you to describe why the industry sectors and pathways are selected and explain the regional economic need using labor market information. So this is where we can take all of those resources that I just shared and apply it to your application.

 As a former grant writer myself, this is how I would use the resources that I presented to you. So here's an example using our advanced manufacturing poster. If you look at this poster, it has data in there that basically gives you a script on how to write the statement of need. If I were to write a statement of need specifically for pathways in advanced manufacturing, this is how I would use a poster.

 The advanced manufacturing sector accounts for a 111,000 jobs in San Diego County and 8% of all advanced manufacturing jobs in California. There are approximately 3,100 advanced manufacturing establishments in San Diego County, making up 8% of California's advanced manufacturing businesses. Advanced manufacturing is projected to grow 4% or 4,792 jobs in the next five years. The average earnings per Advanced manufacturing job is about $99,907. So basically again, the poster that we've provided to you has a script for the economic need for more training in advanced manufacturing jobs.

 To give you another example not using a regional resource, but a statewide report, looking at cyber security you'll see that in the summary and in the report, this is all the data that we provided for you. So one might take a look at this and say, "Oh, this is a little bit overwhelming." But in actuality again, we provided you with information that you can actually write a statement of need with. So again, putting on my grant writing hat, I would write a statement of need that is similar to this.

 The state of California is vastly under supplying trained workers for cyber security jobs. According to the Centers of Excellence for Labor Market Research, employers plan to add 14,300 cybersecurity jobs over the next 12 months. This is a labor market demand. While California training institutions only produce 3,200 awards annually, which is labor market supply, that is a potential training gap of 11,100 awards per year. Our strategy aims to close that gap by ... And then you include your strategy.

 So again, all this information that I've read out here is in the summary of the cybersecurity report. I've given you these as examples. I'm not saying that you should copy it verbatim for your statement of need and your application. But again, after providing all this research, you can see the examples that we've given you here that you can use to make it a little bit easier when you do submit your application. I have to stress how to cite the Centers of Excellence when you write your applications.

 There are approximately 10 Centers of Excellence and collectively we are known as a Centers of Excellence for Labor Market Research or COE. So if you're going to cite a Statewide report, please spell our name this way. If you're going to cite a regional report, then please write the San Diego Imperial Center of Excellence for Labor Market Research or COE. I always mention this because sometimes they mix up us as all centers. We're only one of 10 Centers of Excellence across the state.

 Again, labor market as mentioned on page 23 and the second part of the prompt asks you to identify which pathways were selected and ultimately you might have to identify some of the occupations within those pathways. If you need to go down to the occupational level, let's look at some of the resources that I just explained to you. If you look at our posters again and you scroll down a little bit, you'll see that there is a section with top jobs that are attainable with the community college education.

 So using this information again, if I were to include occupational information in my application, I would say something along the lines of, "Our pathway strategy will focus on the following advanced manufacturing in demand jobs, computer-controlled machine tool operators, machinist and structural iron and steel workers." And you can also use our posters and upload them into the Nova System when you submit your application.

 Alternatively if you don't use the posters again, we provided a link to our Career Education Guide and you can also find that on our regional site. And in the Career Education Guide it lists related pathways and programs at the K12 level, those pathways that are identified by the California Department of Education, and we try to link as much as possible K12 pathways to the priority and emerging sectors.

 So again, using manufacturing as an example, you'll see here that there are pathways in advanced manufacturing that are engineering, architectural design, welding and materials joining, machining and forming technologies and production innovation and design. So within each of those pathways, you'll see some of the top jobs that are pretty similar to what you saw in the posters.

 You want even more detailed occupational information, we can go back to the Career Coach. So as I mentioned to you earlier, there are over 800 occupational titles and browsing through all of those occupations might be difficult. So using our posters and the Career Education Guide, you can select any one of those occupations and type it into the search bar here. In this case, again, I'm using advanced manufacturing as an example and I typed in machinist.

 So when you type in machinist, you'll get a list of related occupations, top one being the machinist itself. You click on that in the Career Coach tool, you'll see that LMI is available at the occupational level, again, if you want to go to that granular level in your applications. The overview shows your salaries, some annual job openings and you can click on each one of those tabs above, overview about wages, employment and job postings in order to get to a different section of this occupational profile.

 If you click on the about section or the about tab, you'll see the different tasks, skills and typical educational attainment for that occupation that you're looking at. If you click on the employment tab, you'll see the labor markets demand as well as overall employment for that particular occupation. This one is also interesting because you see a list of employers. So if you're planning on including any kind of employer engagement in your strategy, this might be a good option to look at.

 If you scroll down to the bottom right of any of these occupational profile views, you'll see this map here. The map is by default selecting Southern Border Region, and the Southern Border Region encompasses both San Diego and Imperial Counties. If you're writing an application specifically for San Diego County just go ahead and select San Diego County, and if you're writing an application specifically for Imperial County then click on an Imperial County, and the data in each of those occupational profiles will be updated automatically specific to that region.

 I do have to caution however that if you select Imperial County some of the occupations may not have enough data or there's insufficient data and the profiles may not populate. So in those cases, if you find that an occupation that you want to train for doesn't have enough labor market information you might want to select the Southern Border Region option.

 So today I walked you through three of these objectives, understanding LMI, learning what our regional resources are available and gaining ideas on how to write your application using LMI. So I hope I've provided enough information for you to be able to use labor market information in your applications.

 I want to thank you all for your time today. If you have any questions, feel free to contact me directly. My email tngobartel@miracosta.edu. I'm hosted at MiraCosta College, but I serve the entire San Diego Imperial Region. If you need access to the slides, the link is provided. I wish you all luck in your application. And coming up next is Randy Tillery to talk about career pathways alignment.

Randy Tillery: Hello everybody. My name is Randy Tillery. I want to thank Tina for introducing me today. I'm going to present some information from a report that we've been developing for the San Diego Imperial Regional Consortium looking at the program areas in K12 career education programs, community college career education programs and looking at how those relate to each other where the programs are and looking for things like gaps and where there's alignment or misalignment in certain cases.

 We were asked to do this report for a number of reasons, one of which was to really help us understand more about the relationship between high school and college offerings. Oftentimes when you have pathway conversations between K12 and community college partners, they do it without really doing first a full exploration of what each other offers, and we thought we believed it would be helpful to do this in a regional basis to understand where programs were, the relative size of those programs and the various kinds of award types in the community college system that are available to high school students looking at particular kind of career sectors or career education pathways.

 So really we wanted the data to be able to inform pathway planning between high schools and colleges, identify places where there may be gaps for those of you who may be looking to develop new programs, where that might be the most important to do that work and to improve existing pathways because oftentimes just because you have a strong set of programs at regional high schools and strong programs at colleges doesn't mean you can't go deeper to help more students really identify how they want to transition into post-secondary education along a career education path and how that could help them really increase their relevance for future employment and access to a career.

 Third, another body of work that we're thinking about is how we can use the data we've collected from colleges and from K12 to really develop advising tools. We often hear from counselors that they just don't know all the programs at colleges have, what occupations those programs aligned to and really if we had a set of advising tools would be available to counselors and students and parents and teachers as well, that could really help strengthen the robustness of the pathways that people are building.

 So the major goal was to map an inventory every high school and community college career education program in the San Diego Imperial Region. We pulled data information from, I believe, 23 K12 districts corresponding to 100 high schools and from the 10 community colleges in the region and we looked at 1,072 program offerings in the regional community colleges that corresponded to the K12 California Department of Education career education sectors.

 So once again, we want to understand the relationship between high school and college offerings, we want to inform pathway planning and we want to develop tools to really kind of support that work. So the mapping was really designed to help us accomplish that. The frame of analysis for this were the 15 K12 CTE sectors, as put forth by the California Department of Education. The community colleges do have 10 sectors, but we felt it was important to use the K12 sector because the audience for this is really in many ways K12 in terms of helping high schools and K12 districts think about how they want to build their strength and pathways particularly in relationship to the K12 Strong Workforce Program.

 There are a few assumptions about pathway work that we use to inform the study. First of all, the days when someone went straight from high school into really a career job, like when you got out of high school and you went to work at the Ford plant in your community and worked at that job for most of your life, those days are behind us, and we know that many of the jobs that pay a sustainable wage pass through post-secondary education. In my own characterization, this is literally every job that pays a sustainable wage in California, unless it's the construction trades, really goes through at least a community college, in which case for community college is a target is often middle-skill jobs, which are jobs require some level of college education, but less than four-year degree.

 In that sense one of the things I think it's important to understand is that K12 career education pathways are more foundational than purely occupational. It is very unlikely that a student in an engineering pathway from high school is going to go straight into an engineering job. What they're doing is preparing themselves for more advanced study in a post-secondary environment to actually be able to access that job. And it's true about a number of occupations now that used to be more kind of straight out of high school into employment, things like automotive where in fact most of the important credentials you need to actually make good money as an automotive mechanic are community college degrees or certificates at this point.

 Thirdly, a K12 pathway or a sector doesn't have a one-to-one correlation to just a specific program on the community college side. A particular sector program or pathway at a high school may align to dozens of college programs and additionally dozens of occupations in the labor market. So I think it's important that we actually embrace that as a framework because what we're trying to help students understand is that even if they're pursuing their education thinking about a career up front and they really have a real strong vocational focus for what they want to do, there are dozens of college opportunities available to them. It really would allow them to pursue that as a part of going to college.

 So we're trying to blow up the I'm doing CTE so it's not really a college pathway kind of myth that kind of lives out there in the universe. And in fact, having a career focus on high school really creates opportunities and allows you to identify all kinds of things you could do in college relating to a certificate, a two-year degree or transfer to a four-year institution.

 And the other thing is that a major challenge that we hear a lot, even beyond the strength of the pathway, even beyond how well the college and the high school work together is that we need to help students understand what is actually out there. A lot of surveys with employers have really pinpointed the issue that students just don't understand what occupations are and where they're at and what different kinds of work may be within an industry.

 And so really filling out the pathway from wherever the student is starting in high school through community college potentially into a four-year institution and into the labor market and helping them be able to think about that whole path is really important for helping them think about what it means to actually to go work, what it means to actually have an occupation, to really build a career for yourself.

 So this is just an example of what we mean by that there are many, many college programs that correspond every high school program. So this is like a sample of K12 business pathways in one very large K12 district, who will remain unnamed and they're offering 11 course sessions in business pathways, and they have programs, they have advanced accounting, business, business and financial markets, business management, business, all really, really strong offerings.

 Well, that corresponds to over 30 different community college awards just in one college district. And this is the college district closest to this particular K12 district. You can just see there are lots and lots of choices, many of them look very straightforward, accounting, accountancy, business management, but then it gets more refined, computer business technology, real estate, marketing, retail management, you'll see some nice programs in entrepreneurship.

 So helping your students really understand that, and to help practitioners understand that you may have a program and you want to see that student really achieve success with, there's lots and lots of different opportunities available to them if they want to transition into community college.

 Additionally, it's the same dynamic in terms of the relationship to occupations in the labor market. This is just a different way to visualize some of the same kinds of information, adding some occupational data. This is occupational information about jobs just from the San Diego Imperial Region. These are occupations identified under O\*NET. That specific standard occupational codes or sought codes and the median wage and the annual openings in that particular occupation.

 So oftentimes when you hear very large scale sort of characterizations of labor markets or openings or things like that, it's important to be able to kind of dive down to the details and say, "Well, what kinds of occupations are really our most interesting?" And that helps you kind of refine where you want to go with your analysis. So I want to say something and this could be a weird kind of finesse thing to say, but this is not a supply and demand study.

 What I mean is we weren't counting the number of students finishing pathways in high school or finishing college programs and comparing that directly between two regional job openings to say are we producing enough people to actually get into the labor market? It's more comparing different kinds of information. So if we know that there are this many course offerings in the region in say agriculture, and there are this many programs in the community colleges, then we can compare that against what's happening in the regional labor market in ways that allows us to kind of begin to just think more holistically about what's happening in our region, but it's not to say that we're trying to really do a direct count.

 The supply and demand studies are really specifically what folks like Tina do in terms of the Centers of Excellence. So they actually count the numbers of students completing awards related to certain occupations and look at openings in a very fine grained way and then slices and dice it in different ways so it can really help practitioners understand how to use that information to inform how to improve the programs or to build new programs.

 So what we did is more irreverent proportional analysis looking at sort of the proportion of programs in K12 aligned to a specific sector and the proportion of programs in colleges also aligned to that sector understanding that there are many, many programs in the community colleges that align and there is kind of labor market information kind of sprinkled in there, but it's really it's that direct correlation between K12 and community college programs that we are mostly focused on as really kind of an important fundamental part of this study to begin to think about how can we build more alignment, where might there be gaps and how that could inform regional priorities for building pathways.

 Once again, anything you see as sort of a larger scale kind of comparison between systems needs to be supplemented by kind of deeper dives into what those programs are. We're counting lots and lots of different awards and lots and lots of different courses, but it doesn't really mean that you shouldn't go deep and really look at a much more fine grain level at the information in terms of the program you're offering and what may be your local or regional community colleges are also offering.

 So this is an example of what I mean by proportional analysis. So each of these bars here shows the relative percentage of the offerings in that system. So the red bars are the K12 offerings and this is literally counted the number of courses offered because in some cases it was difficult to tell where courses exactly correspond to kind of a more unified program that may have poor sequencing and counting course section seemed to be a pretty good way to understand where the relative priority of programming was in the K12 environment.

 And then similarly we did the same thing with community colleges. So the dark blue bars here then show the percentage of college programs that align to that same sector and it's an extremely rough cut and that's once again, I think I said that in the last slide, but it's important to really have that frame that this is just an initial thing to say like, "Oh, that's interesting." Any time you look at a data point or a set of data variables it really is the beginning of a conversation and it should help raise questions for you. It's like, let's investigate why that looks that way and have a conversation about it.

 So things that are very dramatic here are like the number of arts media and entertainment courses in the region compared to the percentage of arts media and entertainment related programs in the community colleges. And there are other things like that where say in public services you don't have a lot of programs in the K12 environment, but you have quite a few programs in community colleges.

 Similarly one of the most striking ones are energy environment and utilities where no K12 institutions in the region identified that they had a program that they would call energy and utilities, even though it's one of the K12 sectors, but there's a fair amount of activity related to that in the community colleges. It's not an enormous portion of the labor market. However, there are extraordinarily good jobs and there are jobs where employers report having difficulty finding qualified workers. So this would be a place to have a really deep discussion.

 Also, I should say that one of the things we learn from the study and I'll talk about this more in a moment is that many, many of the college programs that may align to a sector also aligned to other sectors. So there are college programs aligned to building and construction trades, engineering or manufacturing and product development that also align to energy and utilities. So if you have programs in those other sectors, you may actually already be teaching programs that actually focus on some of the underlying competencies for someone who could be interested in like energy or utilities occupations.

 This is an example of a chart that's in the report and it's just once again, it's just showing numerically the number of K12 courses in each sector, the number of college programs in each sector, and by programs what we did to actually determine what constitutes program or not is to count the number of different awards offered. So if you had a college that offers four certificates and two associate degrees in say manufacturing and product development, that would account for six programs because in theory every different type of certificates or degree program or transfer opportunity corresponds to a slightly different kind of occupational goal that that student may have, how long they want to go to college, what specific jobs they are looking for and how much education they feel they need to actually get there.

 We also included just some regional employment information in this chart. Once again, these are very large cuts looking at percentage of regional employment and percentage of annual openings. You should not use these numbers by themselves to make any grand assumptions about what's relevant or not relevant for you to build. You should look at actually the reports being offered by Tina and the Centers of Excellence to provide much more nuanced information about how to explain what's going on in the labor market, that should really guide your decision making.

 What this does do is allow us to look at some places with it could be just dramatic kinds of imbalance going on to actually inform pathway planning conversations. I look at this tool as a sort of necessarily at least in terms of this report. Something you use just to quote directly to justify your grant application in all cases, but for it to allow you to have a deeper conversation to really look at why you're offering what you're offering, what you do want to offer and to really identify what the benefits to the student would be in terms of organizing your program and a certain way or focusing on certain kinds of programs.

 Another part of the report that we've created our regional maps just to show general distribution or program. We have an enormous volume of these things that actually look at both the entire two county region or that look at small subsections of the county. These will all be available to you, that you can go through and look at, to actually kind of look at what are the programs around me doing. So the blue here is basically the number of program awards in the sector or programs offered by the college.

 The, I guess it's orange-ish here, basically shows the relative size of the high school programs. Sometimes it's hard to know what to do with this information, but sometimes certain things really stand out. In this case this is business, finance and marketing. There are a number of high schools that have programs in business, finance and marketing, but there aren't really a lot of courses offered in this area. It's a very relatively small, underrepresented pathway area in the high schools and it's an enormous area of enrollment in community colleges. It's one of the highest enrolled career education program areas in any community college that you go to because lots of students take a business course in order to get business skills related to other kinds of occupational goals they have.

 This really kind of shows some of the imbalance that's out there. Here's kind of the opposite where we know there's lots and lots and lots and lots of programs in arts, media and entertainment in the high schools and there aren't as many programs in the community colleges. And I will say in relationship to both of these areas, while the focus of the report is not on employment, business and marketing occupations are like 25% of the entire San Diego Imperial County Region and they're an area with lots of annual openings.

 So when you look at the data contained in the report and the data that Tina puts out, you're going to see some places where the data very clearly aligns and says to you, "We should be paying attention to this." Similarly with arts, media and entertainment, the number of regional jobs related to arts, media and entertainment is relatively small. So the fact that it's such a high priority area, we're not saying that these skills are not important, that the competencies students get and digital media courses is not important, but are you should just be asking yourself the question, "How should we be thinking about organizing our programs so our students have a better chance of identifying college programs that allow them to realize real career relevance?"

 So that could mean that you look at the application of digital media skills or arts and media skills to business or to manufacturing or other sectors that may become the primary industry they work in, but they're using the digital media skills to relevant to lots and lots of different careers to actually improve their options for post-secondary success and employment. Some of these we found, I mean, I think that's clearly found some places where there was a clear over-representation of K12 programs compared to college programs cases where there was pretty significant under-representation of K12 programs compared to college.

 And we found sectors that align to many of the same or nearly the same college programs, and I'll talk about that more in a second, but it's sort of goes back to this one to many dynamic I mentioned a little bit earlier, that any given pathway or sector program at a high school really can feed into dozens of college programs, which gives the student a way to both segments the things that they might want to do in college so they don't have to look at the entire buffet at their local community college, but it also allows them to realize that they have real opportunities to explore and learn about occupations and think about what they want to do and who they want to be.

 Additionally, there are more pathway programs in high schools. It really appeared like they could just be ... They were foundational as well as being pathways. I'll go back to digital media for a minute. We know that digital literacy, arts and media skills are relevant to so many occupations in ways that they just weren't 20 or 30 years ago. Colleges across the state have built on business information worker programs, which is kind of a kind of enhanced administrative assistant a higher level program that incorporates a lot of digital literacy, the ability to kind of handle social media and social media marketing for companies, so that you can see where the digital arts and media skills that a student may get in high school could be directly relevant to even though that's more of an entry level or kind of a mid-entry level position, it's relevant there as well.

 So I'm going to go spend just a little bit of time to talk about this issue about the fact that so many of the same college programs correspond to the same sectors. If you look at industrial trades and engineering as an example, construction of building trades, energy environment utilities, engineering and architecture and manufacturing and product developments and to some extent even a little bit of transportation. If you look at the crosswalks between those sectors and college programs that have been done either by the Centers of Excellence, Tina's group or by folks like Steve Glyer in Orange County. He's been doing some really nice work down there between the colleges and K12.

 There are many, many of the same programs on the college side. For example, in all four of those, the ones in blue there, drafting, and the drafting is a major part of that. And arts and digital media show up in all of those as well. Business and marketing, marketing sales and service, almost the exact same programs with a little bit of difference in emphasis. So for marketing sales and services, there are programs related to international trade that don't show up in business and marketing more generally, and you see things that are actually traditionally considered ICT programs that show up both in industrial trades and engineering and in business and entrepreneurship.

 In medicine, biology and the natural sciences, this is the way I've categorized them here, one of the things that we found when we looked at the programs, there's quite a few programs in agriculture and natural resources in the high school environment. There are quite a few programs in the colleges as well. And as both what we found in our analysis, and I know that Tina will be identifying in hers, it's just not a strong area for employment in the region. And in fact, the vast majority of the jobs in agriculture don't require any formal environment. They're really kind of frontline workers or even farm workers in many cases.

 However, students in agriculture programs like say doing animal science and FFA at their high school are really acquiring many of the same fundamental biological and natural science skills as someone who might be thinking about a career in healthcare. So beginning to look not just at the sector as something that's a sort of fixed in stone thing, you have to live within a certain way, but understanding how different sectors actually are targeting the same set of underlying competencies for students and how you can work across sectors in some cases to build a better portfolio of post-secondary opportunities for those students.

 We found some the same things in education human and public services. And then there are pathways that just seem to be foundations and they're foundations in a couple ways. So one of which is that arts, media and entertainment programs in the college environment, business and marketing programs, information and communication technology programs show up as a line programs to many, many sectors. If you want to say there are places where you would go into ICT, but you're in business in the high school side, and you may want to go into an ICT program and look at sort of business application development or business software development.

 And in fact, ICT is very interesting because in many regions the vast majority of jobs in ICT are in industries like financial services and actually not in tech companies properly. I'm not saying, recommending any particular way to sort of think about whether you would focus on one of these or not, but I'm saying as I think there's the basis for a broader conversation about how we think about if you have a pathway or area like arts, media and entertainment, which really doesn't align to as many college programs or to as many occupational opportunities for someone.

 Maybe you contextualize that across a number of occupational opportunities so you're contextualizing for arts, media and entertainment applications to business, to manufacturing or to other other programs you might do in the college side to really be sure you're providing a really integrated and holistic understanding of what students are able to do after high school.

 Another part of the report are some supplemental pull out sections that just sort of capture some of the data related to specific sectors. What I will say is that when you're using the report, there's a general section that to make some very large kind of assumptions looking at the very large data sets, but if you want to begin to dig in a little bit, you're welcome to use these to look a little deeper, to think more, to help you think more about the work you're doing within that sector pathway and how you want to think about that in relationship to how you work with your local college and how you're thinking about occupations.

 Once again, I want to really highly stress that you should be supplementing anything you see in this report with the occupational data produced by the Centers of Excellence and by Tina because they will be providing much more fine grained analysis and slices and dices the data in more ways as you begin to get clear about what it is you want to actually work on. So finally, as I said, the general analysis is really helpful for thinking about where there are imbalances and helping guide where you think there are programs or pathways you want to work on in your K12 SWP Application.

 Do you think you have a generally strong case for why you want to work? Do you work in a specific sector or pathway? For example, if you really wanted to do work in agriculture, you probably need to think really hard about how you make the justification for that and how you're building that out as a way to help students build competencies based on their interest and doing that program in high school for what they may be able to do in college. The sector breakouts are more useful to provide more background on the pathway or the sector you've chosen.

 Once again, I as noted here, that should be supplemented by the Centers of Excellence data. And I know that what I'm saying at the end of the day is it that we want you to look at this report and use it, but you shouldn't just take one set of numbers that you see immediately and just use them to justify major assumptions you may have. You should actually look at both the data in this report and the data that Tina produces to really think through why you're doing the work. It takes a little bit of time, but it also allows you to question at a deeper level what you really want to accomplish for your students and to make more informed choices about how to work with your community colleges.

 Additionally, we have maps and other background documents. We actually have an appendix that shows every type of award offered by every college organized by sector. So if you want to go through that and say, "Well, so in health care, what does this college and this college offer?" You'll be able to see that information directly in that appendix. Both the report and the appendices I think will be available for wider distribution sometime a little later in February, but in plenty of time for your local application.

 So that's all that I have to share right now. Like I said, I am with West Ed and I want to encourage you to reach out to us. It was very interesting for us doing this study partly because we have not been able to find anyone else who really took a run at doing this kind of proportional analysis looking for gaps in alignment across K12 and community college systems in exactly this way before. We're continuing to look at the data and refine it.

 We're working closely with Tina and the Centers of Excellence about the information about the implications of a relative to sort of how you organize labor market information to be useful for K12 and college practitioners in the future and we invite your questions and look forward to continuing to work with you. Thank you very much.