Welcome, and thank you for standing by. At this time all participants are in listen only mode. Today's webinar is being recorded and the recording will be posted publicly within about two weeks. If you have any objections, you may disconnect at this time. Now I'd like to turn the [inaudible] over to Kim Brown from the U.S Census Bureau. Kim, you may begin.

Thank you, Anthony. Good afternoon, everyone, and welcome to today's webinar, To Nest or Not to Nest, That is the Quest. My name is Kim Brown and I'm a training specialist here at the U.S Census Bureau. I want to thank you for joining us today for the back to data basics webinar series. The series was created by the census Academy team here at the Census Bureau. You can register for any of the webinars at the Census Bureau's home page. Just visit census.gov/academy. We think these webinars will be a valuable opportunity for you to learn from our experts about how to access and utilize a variety of Census Bureau data products, tools, and resources.

Before I introduce today's speaker, let's go over a few important housekeeping rules. As mentioned earlier, this webinar is being recorded for your convenience. It will be posted to our census Academy site within 30 business days. We'll post all supplemental materials including the PowerPoint slides. In terms of how to ask questions during the webinar, you can submit your written questions using the Q and A panel which is at the bottom, center, or right side of your WebEx screen. Please take a moment to locate that now.

Once you've found the Q and A panel make sure you choose all panelists from the drop-down menu. This will ensure we see your question. Don't send your question to an individual panelist. Also, we ask that you don't include any personal or business identifiable information with your questions. Now let's talk about the chat panel. Look for that on your screen now. It's probably right next to the Q and A panel.
Definitely keep that chat panel open, also because this is where we will provide key links and other resources. Keep in mind you won’t be able to respond to the chat. Chat is just for us to send you links and other resources. In the chat box we will be sharing throughout the webinar the link for the evaluation. We are very interested in hearing from you how we're doing. My colleagues David Kraiker and Noemi Mendez will be monitoring the Q and A panel as time allows. We will answer your questions directly through the QA panel or we will share your question with a presenter to respond to after the presentation. If we don’t get to all the questions with the response during the webinar, we will post the questions and responses with the webinar materials within 30 business days.

Lastly near the end of the webinar we'll put in to chat a link for the evaluation so you can tell us how we did. We hope you'll take the time to complete again as we always are looking for ways to improve our training. As you know, we are in a virtual environment and sometimes unforeseen technical difficulties may occur. If you have any issues, try a different browser such as Chrome and/or please consider logging out and coming back into the session.

Should you encounter any audio issues, we encourage you to change your audio from the computer to calling in. Now I'd like to introduce our speaker Lacey. Actually speakers. Jim and Lacey. Lacey, you may begin.

Good afternoon, everybody, and thank you so much for joining us. Jim and I are excited to be here today to talk about nesting geography. It's an evolving topic, and especially with the new 2020 data out and the geographies that go with those it's a hot topic. So, we're glad to be here sharing today. As Kim mentioned, this is -- this webinar is part of a bigger effort that the Census Bureau is making through census Academy.
And we also have data dissemination and training sessions across the country. That's my job. But there's one near you as well. So, while we're going to go over nesting geographies and the associated data at a national level today, just so it's for a very broad audience, if you want to understand more local data or more local geographies, you can certainly reach out to us, and we can have whoever is nearest to you reach out and do a presentation for either your group or your organization. Our objectives today are first to just understand the basics of census geography in general, and then we'll specifically look into the requirements for those we'll discuss today which are census tracts, census blocks, and block groups. We're going to review examples of those nesting geographies and talk about how you can apply those geographies and do analysis using them. And then we'll have a quick discussion about census track changes over time. And last, but certainly not least, we will go in to data.census.gov and tell you how you can find references for these geographies and then the data that you can use to populate either a map or anything else you're looking to create. Jim, would you start us off by going over just an overview of census geography? And the hierarchy is up for you to go.

Sure. Thanks. Can you hear me okay?

You sound great.

Thanks. Well, good day, everyone. Welcome to this presentation on to nest or not to nest. I'm going to give you a brief overview of census geography. To start out let's talk about the two main types of census geography. We break these down in to two general groups, legal or administrative. And the second group which we're going to focus on today, statistical geographies. If we talk about the differences here, we can point out some key elements of our legal and administrative geographies. First of all, all of these legal geographies have a governing body. A characteristic of these governing bodies is that their boundaries can change at the will of the government.
And these governments can also incorporate new areas within their jurisdictions at any time. Some examples of legal and administrative geographies are states. American Indian reservations are another example. Counties. Places or cities. Congressional districts. School districts. And voting districts. These are some of the major legal or administrative geographies that the Census Bureau tracks and manages. Well, let's switch gears for just a second and talk about some basics of statistical geography. Here for statistical geographies, there are no gaps and no overlaps in general. There are some exceptions to that rule, but by and large statistical geographies nest within each other. Thus, the title of our webinar today. They are largely created and maintained by the U.S Census Bureau. They are created and updated only for statistical purposes. And you probably should be aware that the Census Bureau is the geographical data steward for the U.S government. So, let's talk about some examples of statistical geography. In relevance to today's discussion, we're going to talk about census tracts, census block groups, and census blocks. And at this point to go through some definitions of those geographies I'm going to turn it back over to Lacey. Lacey.

Thank you, Jim. So yeah. Just we're going to focus today on the three statistical geographies that do nest and do cover the entire country, and the most common and the geographies that we produce the most data for are census tracts. So, we're going to start going through what the requirements are here. This will all come together. We have a couple of examples coming up. This will make a lot more sense, but we wanted to give you some background information as well. One of the things that I want to touch on before we even go in to that is a lot of people are familiar with political geographies. Right? You know what city you live in. You know what zip code you're in. You usually know what county and hopefully which state you're in. Statistical geographies are a little different. You probably don't know what census tract you're in. It's kind of a unique thing.
So, I want to start by saying why we create and maintain these. Administrative and legal geography. So, city. Those boundaries can change all the time, and for -- if you're doing a statistical analysis over time that can make comparing data for that city very difficult because you're not comparing the same physical place on the ground. If you're looking at, you know, data sets from 1960 and trying to compare it to 2020 you're really not comparing apples to oranges in a lot of cases. Statistical geographies are created and maintained so that they are comparable over time. And census tracts are really the hallmark and the cornerstone of that comparability, the availability of comparability back in time. So, census tracts, just some basic overview information, the optimum number of human beings that we want for a census tract is around 4,000. The minimum is 1,200 and the maximum is 8,000. The reason those are the thresholds is because at that 4,000 person or human being population we can really publish a lot and most of the most commonly used American community survey data points. So, once you get below 1,200 it's very hard for us to be able to publish a lot of the data points say for education or commuting or income and poverty simply because it's too small of an area. So, we try to keep it at 4,000. And then the maximum is 8,000 because if we have an area that's 8,000 people, we'd rather have 2 census tracts of 4,000 people so that we can publish twice as much data.

So, you can get more information about the neighborhood that you're living in. Census blocks are the statistical geography that's the next just below census tracts. These are a little bit more flexible than some of their definitions, but I did at least want to touch on the population thresholds or what we shoot for for these. The minimum is 600 and the maximum is 3,000. There is a housing unit criteria as well, that we use when we're making these delineations. And with that we're going to go straight into a demonstration which will hopefully make all of this make a lot more sense. Okay. Here we have the United States. Hopefully most of you recognize it in this light blue color.
And so, it's in the United States. We have states and state equivalents that make up the entire territory. So, I'm in Texas. This is Texas within the United States, and each state has a FIPS code. So, the state of Texas, the code for the state of Texas is 48. And this long number that we're about to write out is the geo ID and Jim will talk about that when we get to the end of this demonstration. For each state there are county and county equivalents that fill up that state. So, in Texas there are counties. And this is Travis County in central Texas. Each county also has a numerical identifier, and for Travis County it's 453. So, if you have a geo ID of 48453 you know that you're within the state of Texas and in Travis County. Going down one more level every census tract. Border to border. No gaps and no overlaps. And each census tract has a number as well. This is where I live. This bluish color. The census tract I live in is 036000.

Below the census tracts we have block groups which we've just discussed. And so, block groups are literally just a group of blocks. So, when you think about walking the dog or, as Jim still brings up and I love making fun of him, when the milkman was going around the block delivering milk, this is a block. So, you turn right. You turn right. You turn right. It's the smallest polygon that you can walk in your neighborhood. This happens to be mine so we're looking at a block group which has a one-digit numerical identifier. There can only be up to nine census blocks in each census tract. So, we are in block group one here. And last, but not least, we have a block. So that orange block is where I live. Here we are zoomed in. And because this can become very abstract very quickly, this is what it looks like on the ground. So, this is a very big census block, and the next example's going to be more urban, but we wanted to give you a feel depending on where you are. Blocks can be very different. Tracts can be very different. And so can block groups.
So, this is a more rural block, but the geo IDs when you combine every single one of those numbers on the right, and that number identifies this piece of land in the United States. And, with that, Jim, do you want to walk through the next group for us? We're back to the county -- sorry. The country-level. And we wanted to give you a more urban area example so that you can see how these all fit together. All right. So here we are in the U.S.

Thanks, Lacey. I really like this example because, quite frankly, we worked together to put these slides together a few years ago and I like how this really illustrates with colors how everything really does nest. So, starting with the country and you're going to recognize this series again we're going to look at Texas. And we see how Texas nests within the country, and now it's both a political or a legal geography and a statistical geography, but it nests within. And of course, we have the state code of Texas. It's 48. That's our FIPS code. And this time we're going to choose a different county. This one's kind of squarish. If I didn't know better, I'd think I was in Colorado where I am at the moment. Once again there are tracks within this county, and this one is Tarrant County, Texas. Those of you who know Texas, this is the Dallas Fort Worth area, and this is the county around Fort Worth. The county code for Tarrant County is 439. And if we zoom in a little bit to look at what's going on there, there's a track there within the middle of the county, and this is track 001017. Of course, like before, we can go down further into this nesting of geographies. We find a single block group, this one numbered block group two. And then once again we can zoom down even further and see this really nice squarish block of 2306. It's important to point out the fact if you're a fan of block groups and blocks blocks will always have the same number that will start off with that same number as the block group. So, if the block group is 2 you will never see a block with the number of 1,000 something or 3,000 something. The block group being 2, census blocks will always have a 2,000 series block number associated with it. And, like the last set of slides, let's look at this block on the ground.
And this one's a little better for me to give my little milk man story of how the milk man travels around the block and delivers milk, and he still does, believe it or not, in Denver Colorado. You can order milk online and have it delivered to your house. And the gentleman goes around about 3 o'clock in the morning and drops his milk at each of the housing units that subscribes to the service. Whether he goes around the block at like [inaudible] does or not I can't tell you, but in this case the city block is very much equivalent to a census block. So Lacey, back to you.

Yeah. I think this is -- yeah. Thank you so much, Jim. So, this is -- the reason we started out with these examples is a census block can be a lot of things. So, we're going to -- again we're going to focus while we've got this up on the tracts, the block groups, and the blocks. The blocks can be very diverse in size and number of humans and the stock of housing within them. So, in Manhattan or New York where our colleagues on the phone are you can have an incredibly densely populated census block simply because there's a high rise in the middle of the smallest polygon that somebody could walk on the ground. You can also have areas like where I am in Texas where there are massive census blocks that are, you know -- I think there's one that's like almost 100 square miles and there's literally no human beings living within it full time that we would enumerate there. So, they can be very, very diverse. Now by block groups we try to hit some of those population thresholds, so they are more comparable. And then census tracts will really get to something that is very, very comparable over time and spatially as well. I wanted to mention one more thing before Jim starts talking about tracts over time, and we'll see this when we go into another example, but census blocks are very difficult to compare over time. census -- because they change constantly. Block groups are also not comparable over time, but census tracts are, and they're also a very good spatial analysis tool because they have that normalized 4,000 population. So, with that, Jim will you please tell us the history of census tracts and then we will talk a little bit about how they change over time?
Sure. So, census tracts are a concept that really evolved right around in the 1910 census. They originally were designed as sanitation districts. Folks realized that as the urban environment, the built environment, evolves and more and more people live in close quarters that issues of sanitation became a concern, and so the first census tracts in the United States really evolved out of an effort to manage sanitation districts in New York City. Once that notion really caught hold people realized, "Hey, we can -- we can take these districts and use them for long range planning." So by 1940 the notion of a census tract, as we now call them, kind of took hold across the country. And the Census Bureau made an effort to establish committees who formed census tract plans for all of the major metropolitan areas in the United States in each of the capital cities in the country. By the 1990 decennial census there was full coverage of census tracts covering the United States. So, one of the notions about census tracts is that -- and Lacey mentioned this already. We -- the basic fundamental design of tracts is that they're comparable over time. And because populations change within a specific geography, we -- and we try to maintain that optimum 4,000 population in census tracts. What do we do when there's development in an area of an existing tract? So as a population grows, how do tracts change? And how do we maintain comparability? In the next few slides, we're going to try to demonstrate that. Am I missing anything?

No. The one thing I would make a note of is, you know, those thresholds are there because that's really 1910 and major urban areas and then 1990 is where you can go back and compare data back to that date, but you probably are getting this through looking at the dates most of our geographies on this, certainly our statistical geographies, are re-delineated ever decennial census for every decennial census. So, there are 10-year intervals here and that's what you're going to see going forward. So, let's look at how this area changed from the 2000 census up through 2010.
Perfect. So, I always like having this discussion with a statistician on board because geographers such as myself we look at this thing from a visual spatial construct, and our statistician such as Lacey, she has -- she will look at it from a very different perspective. And I really like working with Lacey on this because we complement each other on looking at it from a geospatial construct to a statistical -- boy do I have a hard time with that word.

Statistical. Yeah.

Maybe that's why I'm a geographer. I just could never say statistics. Well.

There you go. And, to start out, where is this?

Well, this, Lacey, is in Denver, Colorado. And this image reflects an area that was known as the Stapleton International Airport. Those of you who may know Denver would recognize this image. And this is a census tract shown in white outline. 004105. And without getting into the nitty gritty about how we number tracts locally this would be known as tract 41.05. This tract was designed by the regional planning organization as a tract to stand on its own to separate the airport from the surrounding communities. And, Lacey, do you mind commenting on why we might want to create a tract that separates an airport from the surrounding communities?

I would love to, but I'd like to do it in two more slides, if that's okay. Why don't we get through the changes?

Very good. So, let's look at the same area of Stapleton Airport in -- for the 2010 census. What we've discovered is that because the old Stapleton Airport was dissolved, was relocated to the Denver International Airport somewhat further outside of the core urban area, it was an opportunity for urban and regional planners and developers to redevelop the old Stapleton Airport into a new urban community.
And it is now called the Stapleton community. Not surprisingly. But as that development occurred there was realization that the population within that original tract now was much greater than that 4,000 person optimum. So, what is done to maintain comparability is that we keep that outer boundary of the original tract, and we subdivide that tract into smaller pieces. As we do that, we're creating smaller pieces of the original tract that equal about 4,000 people. In this case for the 2010 census, it was determined there was enough population to create 2 tracts of 4,000 population each approximately. And then a third tract. This is called a special land use tract. That begins with the 98 and its full number is 980100. This tract is special because it consists primarily of commercial warehouse district. Very little or no population within it. And Lacey will address that issue in just a moment as well. But let's move forward 10 more years and see what happened to this area for the 2020 census. Once again there's been more urban development, suburban development on the north end and densification down near the core parts of Denver. But as this densification occurred and more people moved into these census tracts new splits were required all the while maintaining that original outer boundary of the census tract. What this allows us to do as a data user is to compare those changes through time and assemble all of these pieces that you see as part of the 2020 census tract plan back into the original tract from the 2000 census. And these are those nesting issues within the tract itself. These are the splits that maintain that optimum 4,000 population. And this is how we deal with that growth over time with the census tracts. Lacey.

Excellent. Yeah. So, Jim is absolutely right, you know. This is a specific phenomenon that happened in Denver where the airport was closed and then there was, you know, both retail and residential population coming in. This actually happened in the Austin area where I am. But there are different reasons that a population in an area grows. Sometimes it is just, you know, land. Where I live it used to be mostly cattle land and now there is a development, basically urban sprawl coming out from Austin.
Airports is something we're actually seeing a good bit of or shutting down of major military bases. And again, so now you've got a re-population and a redesign of the area. So, in this case let's look at a couple of areas here. So, what Jim mentioned is, you know, we do have reasons that we're drawing these boundaries around each of these tracts as we are. So, while in most cases -- well, in all cases we're looking for that optimal 4,000 people.

We also want to isolate unique or similar populations if we can. And what do I mean by that? First of all, as a data user, we want you to be able to look at the boundaries for your census tract and for you to say, "Oh. Okay. That makes sense. That's my neighborhood. I know where that is." So, we don't want them to just be completely arbitrary, you know, pieces of land that have 4,000 people. We want them to reflect either a development -- one of the things that we might try to isolate is say a dormitory area, university housing. Certainly, if there is a neighborhood that came in as single-family homes and then right across the street there is a very, you know, large population of high density apartments, we'll try to keep those separate. And the reason that we do that is we want to make sure that when you're looking at the tract not only does the piece of land make sense, but so does the population. So I went to Texas A&M. They have seen even more growth which is kind of amazing, and they're putting in all these really cool dorms that I'm very jealous weren't there when I was. And they are right next to more traditional single family styled homes. So, like where, you know, people from the area live. And we keep those separate, A, because the housing [inaudible] the single-family homes, were there before so we want to be able to keep looking at that same piece of land, and then because, you know, you have 4,000 university kids. Sometimes they're specifically male or female depending on the situation. And you want to make sure that you're looking at these unique possibilities. I'm sorry. These unique and distinct populations as specifically as you can. So here mostly we're outlining developments. So these are neighborhoods.
When you look at 0041112, that is the neighborhood. 00411 is a different neighborhood and different development. Jim's absolutely right. The 980100 is a special land use tract. We don't have much of a residential population there so we're not going to probably be able to produce data for it, but the reason we still isolate it is because it is an area where not many human beings live. It would dilute the population densities of the census tracts around it. So, if we left that -- say if we included it in one of the surrounding census tracts, you have this, you know, kind of void of residential population that would really skew those numbers of how many people per square mile. So that's why we do that. We're about to move over to -- in to pulling up some of this data but let me go back really quickly through these slides. I just want to point out something that Jim mentioned just to highlight it. From the 2000 census this census tract was 004105. When we move forward it split and had different numbers. What's important to remember is this piece of land will always be this number. It's not that it went away. We aren't publishing data for it anymore, but this piece of land and this county and, you know, Denver Colorado will always be this number. Now going forward again we're not necessarily publishing data for it. We have. Here's the new census tract numbers. And then we retire those for data purposes, and we have new census tract numbers again. But just what's important here is you never have to worry about confusing hey is this the same census tract as this. The numbers will always be the same. And if we're not using them, we retire them. What's also important is when you're going back to combine all of these tracts to stay with that outside polygon. You can do that over time as well. One thing I want to mention or one more thing I guess is it is possible that there are areas that lose population, and they fall below that 1,200 person threshold. In those cases, we will possibly have to combine census tracts in order to have a big enough population to produce data for them. And in that case sometimes we'll just go back to the previous design I don't think so.
So, say this is an area that lost a lot of population for whatever reason. That is not the case. But we could go back to the former numbers and start publishing data for those as well. And we don't lose any comparability over time and certainly keep that outside boundary the same. With that, Jim, before we jump into TIGER and data.census.gov, either David or Noemi, is there anything that has come up that you want to throw our way before we jump in to actually pulling data?

Okay. Thank you very much. Okay. So Jim, will you talk about TIGER? You know, we're not going to have time today to actually go into TIGER in this webinar, but Jim's going to certainly talk about it in detail and how it evolved. And then we'll go in to data.census.gov where I can show you how to look at census tracts in your area and block groups in your area, things like that, because again it's probably not something that you know super intimately like you do your city, your town, or your zip code.

Sure. And I have to point out, Lacey, you used the word polygon a little bit ago. And as a geographer I'm Geography term. I've been working on that.

How about that? I'm --

I'm going to start some flashcards, some like I know what I'm doing.

I think you do. What is this thing TIGER? We, you know, were talking a lot about some geometries and some geographies. If you didn't know already, and those of you out there who are geographers or GIS practitioners, you probably know all of this, but if you weren't familiar with it the notion of TIGER. TIGER is an acronym, and it stands for topologically integrated geographic encoding and referencing. TIGER is almost 30 some years old now, almost 40 years old, and it's an implementation of geographic information science to encode features. In the case of the Census Bureau, a digital network of lines. So, we can take something that exists on the ground and map it into a computer system through a series of lines.
The relationship between those lines and the areas within them form polygons. So, kudos to Lacey for using that term. Polygons are those fundamental geographies that make up things like census blocks, block groups, and census tracts. So that notion of a geographic area whether it’s a political geography such as legal administrative areas or a statistical geography such as census tracts, block groups, and census blocks, these features are all encoded and stored in the Census Bureau's TIGER system. So that –

Can you talk a little -- one of the things that's unique about this system, and it's made my life a lot easier, but I didn't know it was happening, is if one boundary changes the others automatically will because that was confusing for me at the beginning. So, can you talk about how, you know, if a county boundary changes, then the state boundary changes from whatever reason, the domino effect? Yeah. It just makes it easier to understand what you're looking at.

Absolutely. Lacey's referring to a number of topological rules that we have in the TIGER system. TIGER is a topological system for those of you who are familiar with that. It sets up a series of rules and software procedures that define how TIGER works when one area or one polygon changes and how it relates to the features underneath them. So, as Lacey was mentioning, if a county should annex some land or more often if a city should annex some land, that polygon that makes up that city will change. If a feature changes that has a relationship to something that underlies that, then there are rules that require the Census Bureau to automatically make adjustments. And here's a specific example. There are places that we didn't talk about today called census designated places. They are statistical equivalents to cities. Census Bureau establishes these. Sometimes they nest right next to a city boundary. A city can annex, as we discussed, at any point in time. If they annex property, it would overlap in to a CDP. Our TIGER system has a series of topological rules that require that that CDP shrink, that it retract from the city boundary that has been incorporated or that change.
Similar rules are affected by census tract changes, and I won't get in to too much detail, but needless to say these topological rules are in place to help maintain the integrity of that statistical geography that TIGER maintains for us.

Yeah. And it's funny. Where I am another great example is the county boundaries have shifted slightly for I think just they were being more specific on how it was defined. The census tracts will shift very slightly as a result. The blocks. Most of the blocks will shift very slightly as a result. So, any time there's a boundary change all of that is built into the system. So, whatever is here, the new [inaudible] is always the most up to date for every geography that we have available. Before we jump in to data.census.gov I also want to point out we did make a change for 2020, the 2020 census, that specifically affected blocks. And we get a lot of questions about it. Every polygon that you see here or almost every polygon that you see here would have been a block in 2010 or the vast majority of them. And that led to a lot of blocks that didn't really have the possibility to have a population at all. And let me give you an example. On the street that I live on there is a large cactus in the middle of the cul-de-sac. It's a big cactus. It's an important cactus. Everybody loves the cactus. But that was actually a block because of the rule. Technically it was something you could walk around. There really wasn't the hope that anyone was probably going to live there, but it was a block. Another great example is major medians on either highways or wherever you live. Some of those were blocks as well. So, for 2020 we changed a little bit how we defined blocks and it was done with computer algorithms this time around. And we eliminated some of those blocks that weren't really useful for statistical purposes because they didn't have people. They weren't going to have people. And they were just in some ways erroneous. So, we get a lot of questions about the number of blocks nationwide shrank really significantly in 2020. There's no -- there's not a data loss there as far as looking at population and looking at housing, but it is very confusing sometimes to look at 2010 data and how many blocks were in an area and then to look at 2020,
Especially when most areas in the country are growing and have more streets and have more houses and have more population, why were there fewer blocks? So just wanted to touch on that. Jim, is there anything you want me to jump in to before I go to data.census.gov?

No. I think we covered everything. I think there was one question that I should try to point out that the statistical geographies we've talked about, this nesting of statistical geographies, these geographies are defined once every 10 years. So, they're done right before each decennial census, and one of the major differences between our statistical geographies and the legal or administrative geographies, the legal and administrative geographies can change at any time whereas the statistical geographies are only modified once every 10 years. So that was one of the questions in our Q and A.

Okay. Excellent. For most of you on the phone or on our webinar here you probably are familiar with data.census.gov or if you're not today is the day. This is our landing page for data.census.gov which is our main data platform. So it is about three or four years old now. It's grown-up kind of with all of us as we've been producing more data. But this is where we produce data from the decennial census, from the American community survey, also from the economic census. Most of our major programs this is the main data platform. The website is really simple, but if somebody wouldn't mind typing it in the chat even though -- or David. Just data.census.gov so that you have it in case you forget it later. If you want just basic data, we're going to focus on geographies here, but if you want just basic data or you want just a basic reference map you can type it in to the search bar.

But assuming that you're here because you're a little bit more an in-depth data user, we're going to focus on the advanced search function today. So right here, advanced search, you click here. These are the filters that you can use to zoom in on your geography or the data that you're looking for.
So basically, what you have is -- and this is pulling directly from our API is every data point that we have from our main census and surveys is here. And as you filter it's going to wattle down and just give you results for the things that check all of those boxes. I would be saying this regardless of the presentation. I would suggest that you always start with geography. And the reason I suggest you start with geography is it can be really frustrating to find a topic and you find a name for a topic. So and then you find out it's not available for the geography you wanted. If you do the geography first it will save you some of that heartache. We will only show you things that are available for the geography that you've chosen. At the very top we have the most commonly used geography that most people kind of stick in this area, but certainly we have the nation. And for nesting purposes states nest within the nation, counties or county equivalents nest within the states. Then we have places. Those are cities. Those are administrative or legal entities and zip code tabulation areas as well as metropolitan statistical areas. And then this last row is the three that we were focusing on today. So, we have census tracts, blocks, and then block groups. I'm going to look at tracts. This is again kind of the sweet spot where they're fairly small in size most of the time, have around 4,000 people, but were able to produce a lot of really great data for them. So, the first thing it will bring up is do you want to pull all census tracts within the United States. There are a lot of people that may want to do this. I'm not going to do it today. It's a large data set. But if it's something where you're doing really in-depth analysis you can download it once, save it once. You can certainly get any of this information from our API as well. I'm going to use a slightly smaller example just because it's easier to demonstrate here today and we're going to go to Arizona. For each geography you choose it is going to give you the option to do all census tracts within that. So here we have the option for all census tracts within Arizona which may very well be what you're looking for. But so that we can display this on one screen without getting too far in depth, let's look at Apache County.
If we look at all census tracts, so we will choose all census tracts within Apache County, you can also if you know what census tract, you're looking for you can pick and choose. If you know, you know, if you just want one and don't want to muddy the waters with choosing all of them. Or if there are just a few that you want to compare you can choose these individually or what we'll do is just do all census tracts within Apache County, Arizona. From here you can choose search. Let me show you what that will look like. This will pull up the most commonly selected tables, maps, and pages for people that had searches similar to yours. So, this is just the highlights. Most of the time what I'm looking for does come up here at the top. For those of you who may have been using census -- data.census.gov, just when it was released sometimes it was a little frustrating what came up as the most commonly chosen things just because it was such a new system.

I promise you come back to it. It does a really great job now of bringing things to the top that are usually what people are looking for. So, under all these are the highlights. Under tables we have the most commonly chosen tables for all census tracts in Apache County, Arizona. Under maps, and this will be relevant very quickly, we have all of the census tracts within this county. So again, most people don't know what county they're in. I'm sorry. Most people know what county they're in. Most people may not know what census tract they're in. So, this is a great way to reference that. You'll notice you don't see the numbers yet. You can zoom in. Just depends on where you are how far you have to zoom in before it -- there we go. So here are your census tracts numbers. And if you want to, you can make this -- you can minimize this so that you can really see a little more easily the boundaries for the census tracts. These are just reference maps. This is -- Jim will wrap back up talking about TIGER and how to access [inaudible] files, but this is a great reference map. If you're just trying to understand the area and the data that you're looking at and how it really associates. Okay. So that was under maps. And then pages is usually a lot of reference material. It will have methodology papers and things like that based on the geography of the area that you're looking for.
To Nest or Not to Nest, That is the Quest

Back to filters. If you do -- say you know that you want all census tracts within a certain area or whatever geography it is. Yeah. There we go. If you want to whittle it down and say look at a specific topic the way that you can do that is just here. These all have drop downs as well. So, if you are looking for information about people's employment in the area, if you're looking for educational attainment or educational enrollment, all of that information is here. So, you can go wild on this page. But, like I said, there are many sub-categories, but let me just show you, for example, if you did want to whittle down one more level under education, we have not only educational enrollment, but attainment. Let's go with attainment. And then if we were looking at the map, it will tell you the tables here, and it will give you some basic information about in this case educational attainment. Again, just gives you a really quick and easy understanding and idea so this is if this is age by total. But you can choose any of the variables. Oh. What did I just do? Sorry, guys. Clicked on the wrong thing. It's okay. We get to walk through it one more time. Again, if you're at data.census.gov, and you want to choose let's say all let's do block groups this time, and then we'll go back to Arizona. And then I'll go Apache County, Arizona. And just as another example you can choose a census tract. You can certainly choose all block groups within Apache County, but let's just choose one for an example because that's what I'm going to do next anyway. [Inaudible] happens to have one, but you can choose all block groups as well and this would map for you too. So, all block groups, and look at the map. I am not choosing the right -- I just messed up choosing. I screwed up my search and messed up the demonstration. Basically, I just want to highlight that we'll go to -- not clearing.

Here we go. Data.census.gov. Advanced search. And start with geographies. Sorry I ended the tale of that wrong by accidentally clicking to the very beginning and then it does. It keeps your search, whatever you have, currently in there. But David and Noemi, are there any major questions about how you navigate data.census.gov? Or this is a great time for anyone to type in the chat. I will mention too so here's all the topics that we mentioned right before I clicked on the wrong thing.
If you know what survey you're looking for as well, and a lot of times you will, especially if you're somebody who uses this data very frequently, the American community survey is our largest household data collection survey. So it's like 300 -- I'm sorry. 3.5 million households a year. It's a really big survey. If you know you want that data, it's here. If you're looking for say decennial census, that's here as well. And the economic census. And then specifically if you know you're looking to do for the purposes of this conversation an analysis over time, so say you want to go back looking at census tracts from the 2000 census, from the 2020 -- I'm sorry. 2010 census and then the 2020 census. You can choose your years here as well. So, if you know specifically what you're looking for, this is a great way to filter down those options. So, you can be looking at the data more specifically. And if you don't, we'll give you the most commonly chosen search options. Okay. I'll pause there.

Yeah. So, someone's asking a question. I'm going to maybe paraphrase a little bit, but they're asking when you're pulling up tracts or lower geographies and data.census.gov, the person says you're getting 2020 census info and then it would say yes. When choosing metro and micro, one level above, the data is from 2010. The 2015 [inaudible]. How do you get the latest data from metro or micro? And I'm going to -- I'm not sure that I know exactly the answer, but one thing I do want to say is coming from the geography end of things I always choose the year first and not the geography. What do you think about that?

Okay. So, it just really it depends on the -- for me the reason I don't usually choose the year first is especially because we had some delays with the 2020 APIs, and we had some delays with the decennial census. Even those of us who are very familiar with our normal release schedule, those were altered a little bit. Luckily data.census.gov, at least for me, but to each their own, does a good job of bringing the most recent releases to the top of the search. Now there is one example there.
That's the 2020 APS which is a whole other conversation. We really set it as an experimental data set. But in general, when you go to data.census.gov it will show you the most recent geography, the most recent data release. It will give you the option to go back in time, but it will give you the most current geographies and data. So, I totally get that David if you know that you're looking for a release and a date. Then certainly start there. For me I usually am looking for the most -- the latest and greatest day that we've released, and then might go back in time to see how things have changed.

Yeah. Okay. One other thing, a question I had, when you're showing the nesting and you're talking about statistical geography, you know like blocks and block groups and tracts, but the county and the state, those aren't really statistical geography. They're both. Right? Statistical geography and administrative or legal.

Right. So, we definitely don't -- you're right. We definitely don't control those. Not quite powerful, that powerful, where we're controlling the state and county geographies for the country. But what we do is we adjust them as those government bodies create and send them to us. So that is something that we, depending on, you know, the state and the county will adjust those boundaries exact as they are and then use those as the outer boundaries. So, it's kind of a unique situation where those boundaries, yes they are administrative or legal in nature, but they become the boundaries for all of our census tracts which then are also boundaries for all of the block groups. And then they're also the boundaries for all of the blocks. So certainly, those are set legally, and then we just take them and use them as they are to create the nesting geographies within.

Lacey, I don't have much time. We have one question. Just is how does the data relate to school districts? And I don't know. Do you want to answer that?
So, school districts are not -- so they are not a -- they're -- because they have governing bodies and they can change at the will of that governing body, we definitely -- what's actually little known is that we do produce most of our data for school districts. So that -- those boundaries exist. They are in TIGER. They are built in to data.census.gov. They do not nest nicely so they're not really part of this specific conversation, but we do have boundaries for all -- well, almost all school districts in the country. We maintain them and we publish data for them just like we would for any other geography. So like a census tract or a city or a state. So don't spend all your time trying to aggregate blocks of census tracts to be similar to your school district. We already have those boundaries. I think we update them. Jim, how often do we update those school district boundaries? I think it's annually. Right? And then we produce data just like we would for anything else.

Right. We have an annual outreach. We go straight to the states and ask them to make updates to their school district boundaries. And those -- all of these boundaries can be found in our TIGER line shape files. And if you want to know where to get them, just do a Bing or a Google search for TIGER shape files census and you’ll find that link where you can download that data. If you're a GIS practitioner all of that data is free along with all of the demographic data Lacey's been talking about. That's all free data. The geography is there for you to download to use in GIS if you want to. So yeah.

If there's nothing else, I actually do want to take a couple minutes to show one other tool, but Noemi, David, is there any ting else? I don't want to miss -- if we've missed something big because every now and then we've been talking about this for so many years that we just forget something very obvious and necessary to address, but I'd love to spend about three minutes on census business builder. Just put a, you know [inaudible] in there saying okay. Okay. Okay. Awesome.
So, if we go back to census.gov, you do not have to have the [inaudible] to do that, this is our main landing page. And all of the data tools and apps that we have are here. So under explore data, data tools and apps is right here at the bottom. As Jim was just mentioning, you can also use any search engine to look for I mean data.census.gov is pretty straightforward, but this is census business builder. Census business. Just make sure you include the census and it will come up with any search you do as well. If you want to navigate from here, though, under tools and applications census business builder, and what I love about this tool this was created by one of our good friends Andy Haight [assumed spelling] it was originally made for people looking to start or grow a business so you could do a quick community analysis. But we very quickly found out that there are a lot more applications that people were using it for. So, this was the first edition, the regional analyst edition, which we'll look at really quickly. It has all of the -- well, that's not true. Not all of the geographies, but most of our most common geographies already built into it. And a lot of the data already joined with it. It has a really cool mapping feature that I love to use. So, I am just outside of Austin, Texas.

The quickest way to know what's built into census business builder is just to click on that and it will tell you. So you can look at county level data. You can look at census tracts. You can look at the city, the state, the zip code, and then if you happen to be in an MSA micro or metro -- micro or -- micro macro metropolitan. An MSA. If you're in an MSA it will be here as well. I'm going to look at census tracts because that's what we've been talking about, and hopefully this looks familiar from the slideshow we were just going through. But this is a census tract that I'm currently in. This defaults to population which is not necessarily our most flashy or exciting data point that we have, but here we are. You'll notice, you know, the census tract I'm in is smaller than the surrounding. We're kind of on the outskirts of the population. More people are coming in.
But right here is where you can choose a lot of other data points to just get a quick and easy understanding of where people live within these nesting geographies we've been talking about. So demographic characteristics here. Socioeconomic characteristics. And housing characteristics under consumers and residents. We also have a lot of our business data built in. So you can choose business on annual basis because we're looking at census tracts. Most of this is available at the county level, but we have information on businesses, the workforce, building permits. We can even tell you how many building permits were issued for an area. Consumer spending. And then you can actually bring in your own data here as well. So let's just go to consumer residents. I just want to give you one example and then this tool luckily is so user friendly and so easy that you can just come here. It will be something that will be quick and easy for you to explore if you want to. Let's look at -- let's look at the percentage of people with health insurance coverage. Select variable. And this is just again you can definitely download the shape files. You can join it with the data that we were just looking at for data.census.gov. But if you just want to have a quick and easy understanding, these are the nesting geographies we've been talking about. This is a census tract. You can certainly be looking at the county as well. And just see how the population lays out with these different variables without having to do all that back work. For me specifically this is a great way to get a starting point to find out if it's worth my time and energy to go pull data, pull shape files, join them and do the analysis. This is a great, great starting place. So here we are in this census tract. We've got 90% of the population has health insurance coverage. And let's say we want to look at somewhere where there is a lower percentage of people. I'm sorry. A higher percentage of people with health insurance coverage. You can just click on the adjacent tract. You don't have to know it and go start back over which is awesome. So, in this census tract 97.8% of the population. Again, you can choose any of the geographies we've discussed today that pulled up on that first landing page. And you can join it with most of our most commonly chosen data points.
And it's just a quick way to find information that you might be looking for and kind of pull together the two main things we were talking about today. And, with that, Noemi, David, if there's nothing else that's pressing, Kim, I will turn it back over to you. And just thank you so much everyone who came. If we didn’t get to your question today, I promise we will in the near future and we will have this recorded and posted and transcribed in the next few weeks. Jim, is there anything else you want to throw in before we wrap up?

No. Thanks for your time, Lacey.

Okay. Sounds good. Thanks, everyone.

So, thank you very much for this excellent presentation. Before we conclude I'd like to thank everyone who played a role in today's webinar, and also, of course, thank you, to our audience, for spending your time with us this afternoon. Please take a moment to fill out the evaluation by following the link provided in the chat. Look out for the recording PowerPoint presentation and any other related materials to be posted to census.gov/academy within the next 30 days. We want to remind you - - remind everyone of the next webinar in the series called Puerto Rico. This will be in English, and it's offered June 7th at 2 PM. There will also be a Puerto Rico Spanish version also offered June 9th at 2 PM. This brings us to a close, so we thank you again and hope you have a great afternoon.

This concludes today's webinar. Thank you for your participation. You may disconnect at this time.