

# *Using the Census Application Programming Interface (API) with the American Community Survey Webinar Transcript*

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## **Slide 1 – Using the Census Application Programming Interface (API) with the American Community Survey (ACS)**

Coordinator: Welcome and thank you for standing by. At this time all participants are in a listen-only mode until the question-and-answer session of today's conference. At that time you may press star 1 on your phone to ask a question.

I would like to inform all parties that today's conference is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the conference over to Mr. Tyson Weister. Thank you. You may begin.

Tyson Weister: Thank you and thank you all for joining our webinar this afternoon on using the Census application programming interface or API with the American Community Survey. My name is Tyson Weister. I work in the American Community Survey Office and I'm joined today by my colleague Tammy Anderson. She works in the Decennial Information Technology Division with background in the API and in training so we're excited to give a tag team presentation today on this joint topic for you all.

## Slide 2 – Outline

Prior webinars that we have given on this topic, you all have said that you'd like less basic background information about the ACS and more demonstrations, examples of the API in action. So we're here to deliver that to you this year around.

Our goal is that you all walk away with an understanding of the Census API, how to use it and build an API query so those first three bullets that you're seeing on the slide are understanding the different components of an API call.

Then we'll turn gears and do a live demonstration of the API in action so you can see how to do your API, get multiple variables and make sense out of what you're seeing. We'll talk about resources for learning more and ways to stay in touch and then open it up for questions.

## Slide 3 – American Community Survey is Foundational

So hopefully you all are already familiar with what the American Community Survey is. The ACS is foundational. We are the flagship program here at the Census Bureau outside of the decennial census and we produce characteristics on America's people and housing.

Every year we're sampling 3 and 1/2 million addresses and it produces critical information for small areas down to the block group level and small population groups. So that's what sets us apart from other surveys and programs, our large scale and our high response rates that allow that detailed information for you all.

If you aren't familiar with the ACS hopefully what you're hearing right now and seeing on the slide, you're already aware but if not, visit our website on [census.gov/acs](https://www.census.gov/acs) or check out one of our intro to the ACS training presentations for more information.

## **Slide 4 – Availability of ACS Data Products**

We do want to give you a little bit of background information particularly relevant to what you're going to be seeing in the API up front. So we do release our data three times each year in the form of our 1-year, 1-year Supplemental and 5-year estimate. And the releases for those depend on the population in particular geographic areas.

So our one-year estimates are available for geographies with 65,000 people or more. We also release a simplified version of our tables with very high-level statistics. So because there's less detail in terms of the topic, there's more detail in terms of geographies available, and that set of simplified tables is available for populations that have 20,000 or more in a particular geography.

In addition we have our 5-year estimates. Those are available for all geographic areas regardless of the population size. As an example we'll be releasing the 2013 to 2017 ACS 5-year estimates on December 6th which are based off of responses received over that entire five-year period of time that have been pooled together to create those estimates.

## **Slide 5 – Types of ACS Tables in API**

Also when you are working in the API, there's lots of different types of tables and profiles for the ACS. There are four for the API that you should be aware because you need to choose them up front in those 1 and 5-year datasets.

We have tables for the ACS as well as profiles. Our tables include Detailed and Subject Tables. They cover the most detailed ACS statistics as their title suggests. Each table covers one primary topic, so as an example maybe poverty and then because they're so detailed, they often contain cross-tabulations as well, so as an example poverty by educational attainment.

But to put it into perspective, if you're in the 5-year dataset of 2016 for the API, you'll be seeing over 30,000 different variables through our tables in the ACS whereas the profiles is closer to 2,500 variables in the API. They're a collection of some of the most common ACS statistics so if you're not sure where to start, check out our Data Profiles or Comparison Profile.

The information contained in those are derived from our tables and each profile covers many topics. And also as you see in the upper right-hand slide or upper right-hand portion of this slide are Data Profiles include percentages and our Comparison Profiles have an indicator for statistical significance over time.

## **Slide 6 – Table/Profile Numbering**

And finally we do want to point out our table numbering system that you'll be seeing in the API calls today. This is an example of B06004APR. It's the most complex example of a table numbering system in the ACS and although it looks kind of random, all of those characters are very meaningful.

That first character B specifies the data product type which in this case is a base Detailed Table. Those next two characters 06 specify the subject which happens to be place of birth in this example. 004 is the sequential number that just differentiates place of birth Table 4 from place of birth Tables 1, 2 and 3.

Some tables you'll notice end in A through I which tells you that the table provides characteristics that are repeated for different race and Hispanic origin groups. And then some tables end in PR which tells you that the data came from the Puerto Rico community Survey instead of the American Community Survey. So that's one example broken down for you and if you want the full set of combinations, we encourage you to visit the link at the bottom to make sense of all of our table IDs.

Tammy Anderson: Anything else?

Tyson Weister: Okay, sorry about that, we were trying to clear-up some technical issues that we're having here on the call. So anyways, that wraps-up the background information that we have on the ACS particularly relevant to the API that we did want to let you know up front and with that I'm going to turn it over to Tammy and she's going to talk about the API queries.

## **Slide 7 – The Census Data API**

Tammy Anderson: Good afternoon. Okay, the Census data API, API stands for the application programming interface and it is a data service. You use it to retrieve data. This API enables the Census Bureau data providers here within the Census Bureau to put their data out to the public in a standardized way.

It gives those of you who are software developers the ability to create custom apps and it is also for data scientists and allows them more flexibility to develop data analytics.

## Slide 8 – Advantages

The advantages of the API, okay, it reduces the learning curve by standardizing across multiple datasets. So if you know how to query or request data from the API for one dataset, with a little tweaking you can retrieve data from other datasets.

And with the API you access only the variables, geographies and the table cells that you need. So instead of downloading an entire table from American FactFinder like some of you have been doing, you can pull the variables, geographies, and just the cells that you need.

Also with the API there is no need to host data on your servers. We host it here at Census and as we update data here at Census, you get immediate access to that data and there's no complex interface. There's not a complicated tool that you have to use to access the data. And in this webinar you're going to learn how to build a request from a browser.

## Slide 9 – Uses

With the API the data API it is used to support mobile and web applications and within those applications you can create interactive data visualizations. And the API is also used with statistical analysis software such as R, so the queries can be embedded in the code in the software.

## Slide 10

I want to show you some apps that have been built using the Census data API. This first one that I'm showing you is from Cornell University and this is an app on poverty status. It uses data from Table B17001 from the American

Community Survey the 2014 5-year estimates. And at the bottom of this screen I've provided the URL for that.

## Slide 11

Another app is from Penn State. Again this is one that accesses ACS five-year data. In this case it's poverty data for Bucks County shown here.

## Slide 12

Another app that uses the Census API data is this one from [cleargov.com](http://cleargov.com) and this app pulls data not only from the Census API but APIs from other government agencies.

## Slide 13

Okay, just a couple of more apps that I want to highlight here. One, the next two that I'm going to show you are web apps that are on the Census website. And this first one is one called My Tribal Area. And this is the sex and age breakdown for the Navajo Nation Reservation and this pulls data from the ACS and also okay, that one is ACS only.

## Slide 14

The next one My Congressional district is API data from ACS and also County Business Patterns.

## Slide 15 – Outline

So let's get into using the API.

## Slide 16 – Example: American Community Survey data.census.gov

Before we jump into that, I'm going to show you a table that is from [data.census.gov](https://data.census.gov). This will be the replacement at some point for FactFinder but for now continue using FactFinder.

This is a table for 2016 ACS 5-year estimates, poverty status in the U.S. and it's Table B17001. And we're looking at the data for the U.S. but we're going to focus on the states and the number of people in the U.S. and in these states living below the poverty level in the past 12 months. So you see the data on the table.

I want to show you in contrast what it looks like from the API, the output.

## Slide 17 – Output

So this is the query that we are going to be building. I'm going to do that step by step but you just need to know that the data return not in a table format but in a raw form where in this json format where the first line, the first row would be your list of variables and then for each state you have your data.

And back on the table I'll go back one I forgot to mention that we're looking at the estimates and the margins of error. And here in the API query and what's returned, we have the estimates and the margin of error.

## Slide 19 – API Request – Four Easy Steps

So to build a request - to build this query - there are four overarching steps. First decide what dataset you want to use such as the 2016 ACS. And we have over 270 let's see this morning we have 276 datasets that you can choose from

and you can find them at either this link or the second link is our developers page which I will talk about.

So identify the datasets you want to use, so the 2016 ACS for example. And then identify the items you need, the variables and the geographies.

## **Slide 20 – API Request – Four Easy Steps**

And then after you decide what variables and geographies you want to look at, you build the request using this syntax, the get statement for the variables and the variables are separated by commas. And for geographies you start with an &for= statement and then you put it all together. We're going to break this down even more.

## **Slide 21 – Example: American Community Survey data.census.gov**

So we're trying to get to something that looks like this, this table.

## **Slide 22 – API Discovery Tool**

And a great place to start is here in the discovery tool. So we're going to spend a little bit of time here. I use this to create queries. It's the place to go so let's go out.

I'm going to go to Firefox. And we're going to <https://api.census.gov/data.html>, okay. And we're going to look for the 2016 ACS 5-year Detailed Tables and I'm going to do this simply by doing a search on 2016 in this discovery tool.

The datasets are sorted by year and then by dataset. So I'm already here at 2016 for the ACS 5-year Detailed Tables and I'm going to show you the different links for this dataset. Here we have a link for the geography so if you were to click that, you would see all the geographies available for the 2016 ACS 5-year Detailed Tables. There are 87 different geographies.

And I'm just going to go back and I want to warn you about clicking the variables link because we have over 30,000 variables and it can take a moment for that to load especially with a number of us hitting that.

So I have already opened this and I'll show you what that looks like. Here are the variables and like I said over 30,000 of them. And if you take a look at the top you have the variable name, the label for that, whether that variable is required in your query or not, and some more information that we will get into in a moment, but I want to bring your attention here to this variable B01001\_002E and that is the estimate for the total number of males.

Over in the attributes column you have the margin of error for that variable and you have the annotations, any notes about the margin of error and EA would be the annotation for the estimate so if there are any notes associated with that. Now I'm going to go back to the discovery tool. We looked at the variables, okay, for the 5-year Detailed Tables for 2016.

I'm going to come back to groups. Examples I'll show in a minute but documentation I just want you to know that this takes you to what we have what we call the developer's page and I'll be touching on that and this is the base URL so you start any query with that.

Now, okay, so back to our presentation, that is just a quick look at our discovery tool.

## Slide 23 – Start Your Data Request

So we're going to breakdown this thing of building this query even more. So you start every data request with what I have highlighted here. Okay, the `api.census.gov/data` and don't forget the S.

## Slide 24 – Add the Dataset Name

And then the dataset, the dataset that we have selected is the 2016 ACS 5. And this dataset has it starts with the ACS and goes into ACS 5 because we have ACS 1 and ACS 3-year for you to choose from but you can find -- you don't have to remember this -- you can go here to look for your dataset name in the discovery tool that I just showed you.

## Slide 25

Okay, this is where we get the dataset name, the 2016 and the ACS, ACS 5 or you can use this base URL to start your query.

## Slide 26 – Start Your Variable Request

Okay, and then we start the variable request with a question mark get equals, that's the syntax you use.

## Slide 27 – Add Your Variables

Then your list of variables and you can use this link for the variables for this dataset.

## Slide 28

And I showed you earlier where you can find your variables.

## Slide 29 – Add Your Geography

And then you add your geography starting with and for equals and this is for all states so we have state, colon and an asterisk for the wild card all states.

## Slide 30

And you can find your geographies here.

## Slide 31 – Put it all Together

And then you put it all together and it returns the data in a json format just like this.

## Slide 32 – Output

I want to go back to the discovery tool and show you the examples and that will simplify how you build your queries. Okay, so for this dataset that we're in the ACS 5-year Detailed Tables, go over here to examples.

Okay, and the examples are laid-out for every geography and within each geography you have a few examples. So if we look at the state example, this is pretty close to what we just-the example you just saw-with the wild card for the state, but if you wanted just specific state, Alabama I believe that is, that would be an 01 so for these geographies you have a colon.

Now for multi-level geographies, you have the and for statement and then the in statement. And before we close today you will see an example of these multi-level geographies.

## **Slide 33 – Groups Functionality**

Now back to the presentation, I want to mention groups functionality. This is useful for calling or building a query for all the variables within one table. That's how they are grouped in most cases for ACS. And here you have the groups for the 2016 ACS, you can go here are back on the discovery page with the groups link. And here is an example using Group B17001 to that table, you would get group and this is the syntax you would use.

And with this output you will see a list of variables and then the values will follow.

## **Slide 34 – Stay Connected: The Developers Page**

Great, now that is how you build a query. That is a quick overview of that but I want to point you to our developers page for resources. On this developers page and here's where you can find it. We have an API forum where you can go online and ask your questions, the list of available APIs, more information on geographies, the geography API, a user's guide is found here-guidance for developers-and you come here for news and we have our terms of service and any updates.

I want to mention an API key. You will see that in the examples and when do you need to register or request a key? This is for those of you who will make more than 500 queries or your apps will make 500 or more queries per day to a dataset on the API. And it's also good to have the key so that you receive e-

mail updates for your particular datasets in case there are updates to that dataset.

## **Slide 35 – Available APIs for ACS**

And this is from the developers page, the available APIs for ACS

## **Slide 36 – Available APIs for ACS**

And I also want to list them here what years we have available.

## **Slide 37 – Outline**

Okay, okay, at this time I'm going to hand the presentation back over to Tyson who will walk you through a demo.

## **Slide 38 – Live Demo**

Tyson Weister: Thank you, Tammy. All right so now that you all have a good understanding of those components of an API query, let's look at this in action of how to get those results and make sense of what you're looking at. We're going to walk through one example here where we're going to pull multiple variables from the API for multiple different geographies.

So in our example, given hurricane season kind of underway, we're going to take the perspective of an emergency planner in the State of Louisiana who wants to look at a few variables across all of the parishes which is a county equivalent in that state. So we're going to look at populations that may be a little vulnerable if there was a need to evacuate. Emergency planners may be interested in the population that have a disability, that have income below the poverty level, or the households that don't have a vehicle available at home.

## Slide 39 – Example: Disability, Poverty, and Vehicle Availability for all Louisiana Parishes

So to get started, I'm going to open up Firefox. If you want to view the results in your web browser, please be sure to use Firefox or Chrome, not Internet Explorer or Edge because you'll just be able to get the json results through that. So on [census.gov/developers](https://census.gov/developers) see on the left-hand side that fourth option, I'm going to click available APIs and those ACS datasets are conveniently located for you all right at the top.

For my example I'm going to choose the ACS 5-year dataset to make sure we get data for all of the parishes regardless of the population size that lives there.

## Slide 40

Scrolling down here on the page I see different years. I'm automatically tabbed into the most recent 2012 to 2016 ACS 5-year dataset. And then I see here those four different types of tables and profiles we talked about earlier that I do need to choose up front.

Because I want common statistics as well as percentages, I'm going to go ahead and work with the Data Profiles here and choose that fourth bullet point that says examples and supported geography so I've clicked that here.

## Slide 41

Just like if you were using American FactFinder or any other data search we would recommend starting with whatever is most important to you and in the case of the API that's going to be a URL to work off of which also can

include your geographic selection. So I'm going to click here where it says examples

## Slide 42

And this shows us all the different geographies. There's 53 available for this dataset on the left-hand side and within each of these hierarchy levels there's multiple different API calls that we can choose from. So since we're interested in parishes, I'm going to select county as my geographic hierarchy and we can start reading the first API query example here.

We see the one at the top provides data from the 2016 American Community Survey 5-year dataset. It's pulling from the Data Profiles, specifically an estimate from Data Profile 4, that very first line that would show on that table if you were to look at it in American FactFinder. And then this one at the top has ampersand/for/equals county with that wild card.

So this example would give us data from this dataset for all county or county equivalents across the country, but we want something a little more fine-tuned to focus on Louisiana. So with that in mind, I'm going to choose the third option here as my foundational URL to work off of. I'm going to copy that and open a second tab here in Firefox.

## Slide 43

So I've pasted that into Firefox and I'm going to start editing as we go along. So the first thing I'm going to do because I'm not doing 500 calls to the API today, I'm going to delete that and key equals your key goes here and press enter.

And because I'm in Firefox or Chrome I'm seeing those results in real time and they're very fast that they're populating for us here. So we see that this example URL gives us a particular estimate for Aleutians East Borough which is a county equivalent in Alaska that has the State Code of 02 and a County Code of 013. So that's not quite the geography that we wanted for our analysis but we can edit that very quickly here

## Slide 44

So in my URL where I see the County 013 if I just replace that with the wild card and press enter, I see that I've updated to get all of the county equivalents in Alaska.

And I'm pressing enter step by step just in case we were to make a mistake here we'd be very clear as to what part of the process we maybe had a little mistake in. So then for the state code I'm in Alaska which is state code 22 or 02. I know that the state code for Louisiana is 22 so I'm going to replace state with 22 and press enter.

If you're even not sure what a code is for a particular level of geography, using the wild card is a good way to get a list of all the geographies and then your codes are in your results here.

So as an example we see at the very top towards the end, we see name, state and county so that name would be the label Acadia Parish, Louisiana, state code 22, county code 001. So just using those wild cards we could go to the exact geography we were looking for and find the codes that way.

All right, so we've narrowed down our geography to what we're looking for, all parishes in Louisiana, but we haven't specified the exact variables that we're interested in yet.

## Slide 45

So I'm going to flip back over to my first tab and I'm actually going to click the back button to go back to where I was before I clicked on the examples.

Here we can click on variables which as you may have guessed gives you a list of all of the variables from this dataset.

## Slide 46

And because we're in the Data Profiles, these are pretty easy to search a single keyword in to get pretty closely to where you need to be. So we want disability, poverty and households with no vehicles available.

I'm going to start with disability, press Control F and start typing in disability as my keyword to get me close to where I need to be, right. So first we see here that I'm in Data Profile 02, the 70th line of that table is the section for disability status of the civilian non-institutionalized populations so that's good. But this particular estimate is an estimate for the total civilian non-institutionalized populations so that's the universe for disability.

I want to go a couple down actually to where it says DP02\_0071E, again also in the same section of that Data Profile. This is an estimate of the total civilian non-institutionalized population with a disability so that's really what we're looking for, but below it we see something very similar that ends in 0071PE. So E is the estimate and PE is your percent estimate.

So I'm going to copy here on the left-hand side that DP02\_0071PE. That's the percent of the total civilian non-institutionalized population with a disability.

## Slide 47

I'm going to go back over to my second tab and put that result in place of that variable that was already part of our sample URL. So I've pasted it, I press enter and I get that instant update of results.

So as this example shows we see 18% of the population in Acadia Parish, Louisiana has a disability.

## Slide 48

So in the interest of time, I've already went back to this previous page. I've done my Control F for poverty as well as vehicles and I've quickly found my other variables of interest.

So I'm going to put those into the URL here after the first variable. The one for poverty is DP03\_0128PE. Add a comma. My next variable DP04\_0058PE and a comma, so that was for households with no vehicles available. Right, so we've added that in. We have multiple geographies and multiples variables in the same call, all of related interest to us as an emergency planner.

In our example, 18% of the population in Acadia Parish with a disability, 20.6% living in poverty, and 7.7% of households with no vehicles available. So while it's nice to be able to view this in a web browser particularly to make sure that your calls are correct as you're going and learning the API for the first time, you maybe want to look at it in a little bit more cleaner format.

So we're going to show you one way to do that. Anywhere on this page you can right-click and select save page as and then start typing a filename.

## Slide 49

I'm going to choose Vulnerability\_LA\_Parishes and then if you want a nice clean look we're going to save it as csv so you do need to manually put that .csv in your filename.

In addition please make sure the save as type is all files. So sometimes the format will be json. Make sure it says all files, click save and then open it up from wherever you saved it at and just one moment while we get back over here.

## Slide 50

So you should all be able to see now my screen in Microsoft Excel. So the benefit of saving this as a csv and opening it in Excel is you get a nice clean look, right, so each variable has its own column.

## Slide 51

You see there's a little bit of extra junk in here we probably don't want with those brackets. We can clean that up really quickly here though by using find and replace. So on the home tab the very far right side under find and select I click that and then click replace, I can start getting rid of some of this junk I don't want.

Right, so I've copied the open bracket, I've pasted into find what and then I don't want to replace it with anything so I'm going to select replace all. And

it's telling me that it has made all 66 replacements. I can repeat this process for that quote mark, copy, paste in to find what, select replace all, as well as the bracket here on the end, copy, paste into find what and replace all.

All right, so we see here that we've been able to get a very quick clean look in something that we can view, but maybe we kind of forgot what some of those obscure variable names actually mean, so DP02\_0071PE.

## Slide 52

Going back to Firefox very quickly here. On the page where we did the Control F and got disability, just so you know you can go to the very top if you're in Firefox or Chrome where it says dot HTML, if you delete that and press enter, you get the API query for that information. So the variable name as well as the label for all of the variables in the Data Profile dataset.

Again on the page we can right-click save page as, save it as a csv and clean it up.

## Slides 53-58

I've already done that here on another tab. So here we have just what we were looking at before with our information for disability, poverty and households with no vehicles available across the parishes in Louisiana as well as a list of all of the variable names, labels, and Data Profiles that they come from on this second worksheet here.

So in Microsoft Excel I have already found the information to do a function using the VLOOKUP. So I'm not going to walk through step by step how to

do the VLOOKUP but it is documented for you step by step with instructions in Slides 54 through 58 of the PowerPoint.

So using that information I can copy that VLOOKUP function, paste it into cell A2, and press enter. So what Excel has done is searched for a match in cell A1 for DP02\_0071PE. It's searched this whole table here and once it's found a match somewhere in the table, it's pulled the corresponding label from Column B.

If you do something like this, it's very easy, you know, if you've done this on a much larger scale and have more than just three variables, you can drag it across your screen to cells B2, C2 and so on. And because we went through the work to use a function, we can kind of automate this process to pull in the matching labels here.

So you should be seeing some of the benefits of using the API. You get exactly what you need, all in one nice presentation format.

## Slide 59

Go back here to our API call to show you another benefit of the API. Once you've gone through the trouble to get your variables, under the 2016 in this call, you can update this over time. So as an example we can change it to 2015, press enter and then we see those results updated very instantaneously for us.

## Slide 60 – Outline

All right, so let's go back here to the presentation with wrapping up just a couple of resources for learning more.

## **Slide 61 – New/Modified/Deleted Tables**

Particularly into that last point, most variables in our API ACS datasets are consistent from year to year, but when we have table changes, it can affect the variables' consistency.

So in this example if you visit the link at the bottom you can see our table changes for the ACS. We're looking at table changes between 2015 and 2016. With an example Table B28002 was modified to match the changes in our questionnaire regarding Internet subscriptions

## **Slide 62 – Visualizing Table/Variable Changes**

And visualizing what this means in our American FactFinder tables and the API, we're looking at API call for this table ending in 004E. In 2016 that would give you data for the fourth line of this table which are households that had broadband Internet subscription of any type. If you use this in 2015 that same API variable would pull a different estimate for households with DSL Internet subscription which is a subset of the broadband. And that was-just in comparison you can see the 14 million households versus the 96 million households. So please do take a look for table changes

## **Slide 63 – Benefits of API Compared to American FactFinder or Summary File**

And to recap the benefits of the API compared to American FactFinder or Summary File, you get the exact variables and geographies you need. You quickly update to get that data across years and you can also easily merge your results.

So this is an example of searches and queries for all parishes in Louisiana. On the left-hand side you see API results. The right side American FactFinder. So on the left we see we get truly all-consistent lists of all parishes in Louisiana for this dataset even if they don't have data. So in our results we're seeing on the left-hand side a null value for Ascension Parish but there is a line there. In American FactFinder you only get geographies that the table is available for.

So if you were trying to merge your results in the API you would get a nice one-to-one match, but in American FactFinder that wouldn't necessarily be the case because you may have different numbers of columns between table and table.

## **Slide 64 – Outline**

Let's talk about ways to stay in touch.

## **Slide 65 – Source Us!**

We do love if you source us so people know the information you're using is powered by the American Community Survey.

## **Slide 66 – Data Tells Stories. Tell Us Yours!**

In addition on Monday we're very excited to roll-out a new web form for you all to tell us your data stories for the ACS. So particularly we're interested in learning about how you're analyzing the data and what decisions and outcomes are being made based on that analysis to help us be better connected

with our data users and showcase the value of the American Community Survey. That link on the bottom will be live sometime next week.

## **Slide 67 – Continue the Conversation #ACSdata**

And of course continue the conversation with us. On the left-hand side we have our phone numbers and e-mail addresses and on the right-hand side – so the left-hand side are the official contacts for the Census Bureau - the Gitter and Slack forums are very convenient for our data users as well. So feel free to ask your questions on there as well, but do know that the left-hand-side are those official channels.

## **Slide 68 – Questions?**

So with that we'd like to leave some time for questions. Operator, will you please open it up for questions?

Coordinator: Thank you. We will now begin the question-and-answer session. If you would like to ask a question, please press star 1 on your phone and record your name clearly. Your name is required to introduce your question. If you need to withdraw your question, you may press star 2.

Again to ask a question, please press star 1 and record your name. It will take a few moments for the questions to come through. Please standby.

## **Slide 69 – Upcoming/Recent Webinars**

Tyson Weister: And while we're waiting for questions to come in, we do have some upcoming webinars we'd like to advertise on June 27th is the ACS Planning

Database. As well on the bottom of this screen we have some recently-recorded webinars that you can access that we've done earlier this year.

## Slide 70 – American Community Survey Data Users Group

We also have the American Community Survey Data Users Group and there is a specific subgroup for the API. Again another online forum for you to share your expertise with other ACS API data users. Operator, do we have any questions in the queue?

Coordinator: We do have several questions. The first comes from (Riley Rogers). Your line is open.

(Riley Rogers): Yes, I think you partially answered this. I was looking at finding sources. This webinar is very informative and necessary but I need to look at it again to test the detail so can you give me the URL where I can replay this webinar?

Tyson Weister: Absolutely, so on this screen you're seeing now on [census.gov/programs-surveys/acs/guidance/training-presentations.html](https://www.census.gov/programs-surveys/acs/guidance/training-presentations.html) we will in the next two weeks for sure hopefully within the next one, record this webinar and have it live at the very top of the list of trainings, presentations and webinars at that site.

(Riley Rogers): All right, and also my second question and last question is being relatively new to this process of using the API, you gave a number earlier as -- what did I write down -- 866-437-0171. Is that a place to get some assistance if I need it?

Tyson Weister: Correct, you can contact either of those two numbers listed here on this slide as well as both of those e-mail addresses and we will make sure to get you to the correct technical expert for your question.

(Riley Rogers): Oh, I'm good, okay, thank you.

Coordinator: The next question comes from (John). Your line is open.

(John): Notice that the API calls for 2015 and afterwards have an extra ACS forward slash in them compared to the previous years. Is there a way around that so that you can write the same path but with a different year? I see you changed the call in 2015 ...

((Crosstalk))

Tyson Weister: Correct, yes sir, I was just confirming with our technical expert here in the room. This is the slide that covers what I showed you in just a little bit more detail. You are correct, that there is an extra ACS in the 2015 and 2016 API calls.

This is the new process. So we are in the process of making this consistent over time and going back to our previous datasets so you have a consistent experience. So right now there's no workaround, but we internally at the Census Bureau are going to make that easier for you.

(John): Okay, thank you.

Coordinator: Next question comes from (Mary Butler). Your line is open.

(Mary Butler): Hello, I'm a disaster prevention consultant and I'm trying to utilize the Census Bureau but I notice that they don't have a lot of what someone like me is looking for.

Is the Census Bureau going to start addressing like contaminated properties, you know, in the United States because that does affect financial industries within the United States when we have just in my area alone over 1,000 properties that are contaminated with illegal and legal drugs that have been smoked in the buildings, apartments, bathrooms, whatever, you know, restaurants, hotels and stuff it's smoked in the bathrooms and stuff.

Is the Census Bureau going to start picking-up on the disaster of contaminated properties in the U.S. so we can try to get a full scope of the contamination issue because it does affect retail as well as the selling of properties?

Tyson Weister: Yes, thank you for your question. We at the Census Bureau do not have any plans to address that with our current selection of datasets but you may want to check with other federal agencies. And if you'd like to make any connections with that, we can research this more. If you could e-mail your question in to [acso.users.support@census.gov](mailto:acso.users.support@census.gov), we'd be happy to address this more with you offline. Thank you.

Coordinator: Next question comes from (Bernard). Your line is open.

(Bernard): Yes, the first question is already answered. I was just trying to find-out if you would post this and where would you post it but you already answered that with the first question, thank you.

Tyson Weister: Thank you.

Coordinator: The next question comes from (Essa Moon), (Esa Moon).

(Esa Moon): (Esa Moon), (unintelligible) financial consultant.

Coordinator: Your line is open.

(Esa Moon): Sorry, Esa Moon, yes, sorry, so I have two questions. One is can we use a wild card to include all available years for particular levels of the ACS?

Tyson Weister: The answer to that is no.

(Esa Moon): Okay, and when it comes to - I read a little bit about the master address files that the Census Bureau uses to get a lot of the household data - and I was wondering so I work in (unintelligible) industry and I want to measure the effect of increased rates or a particular population and usually there are separate rates for residential customers and businesses and I know that that distinction is available in the master address file. Is there a way to access that using the API or no?

Tyson Weister: No, there is not a way to access the Master Address File. That's an internal file for us here at the Census Bureau just to make sure that we have a complete list of addresses for our surveys to create the public data that is available on the API.

(Esa Moon): Okay, actually I have one last question which relates to the changing of variable names from one year to another. Is there an Excel file or anything that summarizes these changes or would I have to go for and check every single year, check for that particular table and see if it's changed?

Tyson Weister: Checking if the tables have changed on the ACS website is the only resource the Census Bureau has available. There may be better ways to do it using the API data itself in a raw format, but that's what's available from the Census Bureau is what I showed you.

Are there more questions on the line (Tara)?

## Slide 71 – Need Local Stats?

Well, while we are waiting for more questions, I do want to let you all know about another resource that's available to you. It's our data dissemination specialists. They are located throughout the country eager to give you in-person webinars, training, anything you might want, a local data request, feel free to reach out to them using their contact information, 1-844-ASK-DATA or e-mail us at [census.askdata@census.gov](mailto:census.askdata@census.gov). Operator, are there more questions on the line?

Coordinator: Yes, I do apologize, my line had dropped. The next question comes from (Louise Fundis). Your line is open.

(Lois Fundis): It's (Lois Fundis). Yes, could you show that slide again that had the information about how to obtain the slideshow or the rerun of the webinar?

Tyson Weister: Absolutely, there it is.

(Lois Fundis): Thank you very much. I'll save that on the printer, okay, thank you.

Tyson Weister: You're welcome.

Coordinator: The next question comes from (Philip). Your line is open.

(Philip): Yes, good afternoon. I'm interested in Caribbean data or datasets. How easy is it for me to extract data for education, occupation, income levels, and spending power for our Caribbean population?

((Crosstalk))

Tyson Weister: Hi, may you repeat your question, please? Thank you.

(Philip): Yes, I am interested in Caribbean datasets like education, occupation, income and spending power. How easy it is for us to access that data?

Tyson Weister: You want characteristics of the population from the Caribbean, is that correct?

(Philip): Yes, right, yes.

Tyson Weister: On like, okay. So I am not sure offhand that that data are available from the API. You may need to go to American FactFinder for our Selected Population Tables. There are resources available to you on the ACS website that walks through how to use that information. So on [census.gov/acs](https://www.census.gov/acs) we have a special release we do only once every five years that has not made its way into the API yet for the ACS.

But under data on the left-hand side of the ACS website, race, ethnicity and American Indian Alaska Native data, we have both a flyer that has some relevant information even though I know you're not accessing tribal data, as well as the pre-release webinar that walks through that process on American FactFinder. And then of course you can e-mail your question into us and we'd be happy to help you in more detail.

(Philip): Thank you.

Coordinator: The next question comes from (Pat). Your line is open.

(Pat): Yes, I'd like to know if this information is used by local EMS and by federal EMS to aid in the evacuation for the general public?

Tyson Weister: I'm sorry, me, for EMS, can you expand?

(Pat): The local EMS is this open for local EMS to use and for the Federal Emergency Management System to use to aid in evacuating people? Because I know during Katrina those who were stuck at home that didn't have cars, don't the city buses and school buses could have been used to evacuate those people and they weren't. Could this be used by them to do that?

Tyson Weister: Absolutely, it's publicly available so anyone is welcome to use it. As one example the City of New Orleans has a nonprofit collaboration between Evacuteer and the City of New Orleans itself. So they actually use ACS data on things like poverty, vehicles or households with no vehicles available, and a number of other ACS variables in order to determine the locations where I believe it's 17 different Evacuteer evacuation points throughout the city to reach those populations in need the most. So that they have a system in place that can evacuate I believe over 40,000 people in less than 36 hours. So it's definitely being used and we hope to get more of those stories through our new form.

(Pat): So will that reach people who cannot get to those places like me personally, I can't walk very far with my disability and I don't have a car. Would they come to get me and take me to those places or ...

Tyson Weister: The way that local areas are using it, I'm not an emergency management expert. It was just a data example so your local area would probably be able to answer that question. We would hope that there's ways that they're working with data and other maybe non-data sources to address populations as in your example.

(Pat): I used to be a nurse an EMS person (unintelligible) medical technician and after the hurricanes or whatever we would go out to sites where we knew people didn't have telephones or cars or whatever and we could go and check on them to see how they were doing.

Tyson Weister: Great, thank you for your question.

Coordinator: The next question ...

Tyson Weister: Do we have, go ahead, sorry.

Coordinator: ... next question comes from (Yvonne). Your line is open.

(Yvonne): Hello, I am a child abuse and community advocate and activist and I'm looking for data on child and youth mental youth status in diverse populations of poverty. Do you all have that?

Tyson Weister: We do not have I'm not aware that we have mental health through the ACS. It depends on what your definition is but we could definitely investigate that more if you can e-mail your question into [acso.users.support@census.gov](mailto:acso.users.support@census.gov).

(Yvonne): Well, how do we it's very important that our, I mean, I'm really going to be pulling my hair out trying to wait for two weeks to try and get these slides so is there a quicker way that we can get this information?

Tyson Weister: So the recording's not available for two weeks but the slides are available now. We'll share that link again through the chat.

(Yvonne): Okay.

Tyson Weister: It's posted on the Census ACS website. Thank you for your question. (Tara), do we have more on the line?

Coordinator: We do. The next question is from (Elizabeth Peterson). Your line is open.

(Olivia): Hi, this is like can you hear me?

Tyson Weister: We can hear you, thank you.

(Olivia): Okay, okay, my name is (Olivia), I was confused if that was me. But I'm new to using this and I am looking for information for Macedonian Americans or people using Macedonian language and I saw I guess a database for language and then I was trying to create a query and I guess my confusion was at the end when I was trying to search by state but I got an error, unknown unsupported geography hierarchy.

I thought it was like and - for equals states and then just a number so I guess I'm a little lost there.

Tyson Weister: Yes, thank you for your question. If you could send the exact API query that you have to one of our two e-mail addresses that we have here on the slide, we could better investigate what's causing your error message and pinpoint you in the right direction.

(Olivia): Okay, thank you.

Coordinator: The next question comes from (John Frabel). Your line is open.

(John Frabel): Hi, what is the smallest go that you can get data on? You had the example where you got it by the parish in Louisiana. Can you get it by town or ZIP Code?

Tyson Weister: Absolutely yes! So that's one of the benefits of the American Community Survey is to provide that portrait of America across many different types of geographies. You definitely can get the places that you mentioned. In addition it goes down to the census tract and block group level which we would consider like a neighborhood level of geography.

(John Frabel): Okay, so like if I had an address and I was interested in getting something like the average household income of that address, is it impossible in an address way or would I have to convert that address into like a geographic location like latitude and longitude or how would that work?

Tyson Weister: Right, so you couldn't get it for a particular address because that would be at like the household level. Also the ACS does not have block level available. It has block group which those geography have been about 600 and 3000 people in general. But if you did want to search those geographies that belong to that address, one resource you could use that I'm showing here on our screen, the American FactFinder.

On the advanced search tab, if you click geography at that second blue box and then click on the third tab that says address so as an example here we could put-in the address for the Census Bureau headquarters, 4600 Silver Hill Road here in Suitland, Maryland and then we can go ahead and click go.

Got a little carried away here with that ZIP Code. And it will give us all of the different geographies that belong to that address. So it's loading up now but it would give you different geographies to click-on for you to find exactly what you're looking for household income in that area around the address.

Coordinator: Next question comes from (George). Your line is open.

(George): Hi there so I'm really new at this kind of thing and I'm wondering if you could recommend a resource for helping me understand how to use an API in say a business intelligence software package?

Tammy Anderson: Hi, this is Tammy Anderson. Let's see I will take okay, to our do you have the slides available?

(George): I can certainly download them, yes.

Tammy Anderson: Okay, within the slides there's information about the developers' page but we pulled this up just now. Do you see the developers' page on your screen now?

(George): Yes, I sure can, thank you.

Tammy Anderson: Okay, so if you go there, we have guidance for developers and if you click that, you'll see a user guide.

(George): All right, fantastic, thank you.

Tammy Anderson: And let me give you an e-mail address if you have questions, it's `cnmp.developers.list@census.gov`, okay, we're going to highlight it right here at the bottom here. Oops, sorry, made a mess. Okay, there you go.

Tyson Weister: Thank you. Do we have more questions in the queue?

Coordinator: Yes, the next question comes from (William). Your line is open.

(William): Good afternoon, I really enjoyed the presentation. We have been doing what you've been showing trying to build we work with municipalities in Delaware in their comprehensive planning.

So it's kind of a standard suite of like 15 or 20 general demographic and economic or social characteristic tables that they generally use and using Google docs we've been trying to make a template so they can just say, you know, this is the name of my town and their data will auto populate.

And we're having decent success but we found the process of finding the variables really laborious. Sometimes if you look at American FactFinder and you look at the URL like in the code you can get a hint.

But I noticed you got the new Census portal coming-up and I wonder you know, if I go to that and I click on a profile of general population characteristics, you know, somewhere in there you know, when you find the table and you see what you want, will you be able to click on it and get what the variable name is, the variable symbol?

Tyson Weister: Well, just to make sure I understand your question, what you're looking for is something like American FactFinder where you have a nice clean view of the tables, what they look like, but then that that contains the API call which

includes the variable if you wanted to access that information through the API?

(William): Exactly, we're trying to help people go from doing it the old way to the new way, exactly what you're presenting. So in the past we've made all of our tables using American FactFinder, but so when I do that now - when I look at American FactFinder - nowhere in American FactFinder does it give me any hint as to what the variable is, what the coded variable is. I'm wondering will the new Census like do that?

Tammy Anderson: Okay, this is Tammy again. On [data.census.gov](https://data.census.gov) the direction we're going with replacing eventually replacing FactFinder, that is on our wish list. So that you can see the API call behind that table, you have the value in the table cell and I will certainly pass your comment forward that this is a need.

(William): Yes, thank you very much. It was a great presentation. We really learned a lot from it.

Tammy Anderson: Okay, thank you.

Tyson Weister: Thank you.

Coordinator: The next question comes from (Sandra Brown). Your line is open.

(Sandra Brown): Hi, I enjoyed the presentation. I can see right now I'm going to probably have to go over it a couple of times to kind of get it down pat. I was trying to find-out in listening to some of your other callers, if we wanted to develop some type of query of our low-income populations in San Bernardino County, is there a way that this could be done by legislative districts?

Tyson Weister: Sorry, which districts are you referring to, Congressional districts or state legislative districts?

(Sandra Brown): Both, Congressional definitely.

Tyson Weister: Oh, okay. Yes, that geography is available in the API.

(Sandra Brown): And so to start this where would I begin, just go to ...

Tyson Weister: So on the example - I'm used to going to our site on the ACS - so on [census.gov/developers](https://census.gov/developers), once you get to one of the examples, you will see where we had chose county before. You'll see Congressional districts as one of your options.

(Sandra Brown): Oh, okay.

Tyson Weister: So you want to look at the very end of whatever's in that hierarchy to see what level of geography is the level that would give you results in. So you would want to go to the one that says state arrow Congressional district.

(Sandra Brown): Okay, and to get additional assistance, you mentioned earlier about we could contact the data specialist I didn't get the information but ...

Tyson Weister: Yes, it's back here on the screen so you can get that down.

(Sandra Brown): ... okay, thank you.

Tyson Weister: You are welcome.

Coordinator: The next question comes from (R. Carr Lesata). Your line is open.

(R. Carr Lesata): Yes, so I have two questions. The first one is regarding the people who want to act as the APIs, you pointed-out that for those who need to run more than 500 queries a day on a table, they need to get a key so basically is there a way to do some sort of self-registration maybe just use your ID and password to figure-out who's accessing the APIs, how they are running, it can be use that information later on?

Tammy Anderson: Okay, your question is you want to know who else is accessing the data?

(R. Carr Lesata): Well, I would just wonder if there is a way that people should register self-register on the website before they can access the APIs, you know, with some ID and password so later on it can be identified who is accessing and who is running these APIs.

Tammy Anderson: Okay, okay, right now we're showing you how to register for a key from the developers' page but yes, here at Census we are able to see who is accessing our data. We have, you know, we capture your e-mail so that we can notify you when there are major changes when you need to be alerted so it's a way for us to communicate back to you.

(R. Carr Lesata): Right, but I think this is only for those users who want to run more than 500 queries on a single table per day. The rest of people don't need a key so do you still track them by any chance?

Tammy Anderson: No, no, we do not track those who do not have a key. Now if you want to register for a key and you run only 50 queries a day, that's fine. But I hope that answers your question and gives you ...

(R. Carr Lesata): Yes, yes, yes, yes. The second question I had was for so all of this data is publicly available. How about the data that you provide that for whatever reason is not publicly available because of some security concerns or whatever, is there a way to give like a permit access to people based on their credentials when they need access to certain data that is not publicly available?

Tyson Weister: So in terms of the American Community Survey dataset, I can answer your question somewhat on that. Our publicly available data is our statistics that are pre-tabulated through data tools like American FactFinder as well as in to the APIs.

We have our public use microdata sample or PUMS. Again this is a publicly-available dataset but it's a sample of the microdata so we take about 2/3 of the responses, we remove information so you won't be able to identify any particular person or household. We put additional edits in place to protect confidentiality, but then we provide that data to give you more flexibility to create custom tables that you don't see in American FactFinder.

In addition to that on our data tab on the ACS Website under custom tables, if there is information we collect through the ACS but we don't tabulate it the way you want and you can't meet the need through American FactFinder, you can also request a custom table.

So those are your options beyond the standard of what's available in the API as well as American FactFinder. Thank you for your question and (Tara) I think if there are more questions we're open to taking maybe like one or two more. Do we have more in the queue?

Coordinator: We do have two questions left.

Tyson Weister: All right, excellent.

Coordinator: Our next comes from (Brian Conty). (Brian Conty), your line is open. (Brian Conty), your line is open.

(Brian Conty): This is (Brian Conty). I would like to see if you can review the operator that's used the URL when you have two variables. I believe in your example you were looking at disabilities within a geographic area and the lack of a vehicle. If you could and if you could blow-up the screen so I can actually see where the connector is in the URL, that would be helpful.

Tyson Weister: Oh, between those two variables, it's just a comma, if that's your question.

(Brian Conty): Yes, is it, okay, all right.

Tyson Weister: I don't have it pulled-up anymore because I went to other sites but it is in the PowerPoint so if you make the PDF kind of full-sized, you should be able to see it in the PowerPoint as well, just commas in between those.

(Brian Conty): Okay, and how many of those can you run?

Tyson Weister: You can run 50 in one call and then if you want all of the variables in a table and one particular table, that does not have the 50 limit. It does give you all of the variables in that table and that was the group's functionality that Tammy pointed out in her section.

(Brian Conty): Okay, thank you.

Tyson Weister: Thank you.

Coordinator: Our last question comes from (Steve Ross). Your line is open.

(Steve Ross): Hi, thank you, it was a great presentation. My magazine has had quite a bit of success running Census data against FTC data, NCI, USDA, the National Broadband Map, that sort of thing but there's a key data that's very fuzzy and I was wondering if Census has any plans whatsoever to improve it?

Basically you can tell me whether how many people in a block group have broadband but not whether they don't have broadband because they can't get at all, you know, and since the National Broadband Map grotesquely overestimates broadband access, that's a big problem for us.

Tyson Weister: Yes, thank you for your question. We do not have any information beyond like a yes/no "Do you have Internet access" but if you want to e-mail your question in to [acso.users.support@census.gov](mailto:acso.users.support@census.gov) we'd be happy to connect with some of our colleagues and see if they might be able to point you in another direction to help with that.

(Steve Ross): No, we have all of the data that can be had but yes, that answers the question. I mean, it's just a lot of people don't have access because they can't afford it but a lot of people don't have access because it's not available. We have shown easily that a quarter of all world population loss is due and we've got the causality is due to lack of broadband access since 2010, a quarter.

Probably half of all world population loss and we've been using that as proxy for job loss so it's critically important, it's vital and it's not your fault that the data isn't being collected. It's a very difficult question to ask. A lot of people wouldn't know if they have access or even what broadband is.

But no one else it's not on anyone else's plate as well so NTIA has indeed asked for advice and suggestions on this and I've been privy to what the responses have been so far and everyone's pointing to only Census could ask enough people but could actually divine that information so but yes, that answers the question.

Tyson Weister: Okay, thank you. All right ...

Coordinator: We have no other questions.

Tyson Weister: ... excellent, well thank you all for joining in our webinar this afternoon and we hope that you all enjoyed it. Take advantage of our resources, the slides that are currently available, the upcoming recording that will be posted and then we'll be sending out an evaluation.

If you haven't got a chance to complete it already, please do complete that because we always look for ways to improve our webinars going forward. Thank you. You all have a good afternoon.

Coordinator: That does conclude today's conference. Thank you for participating. You may disconnect at this time.

END