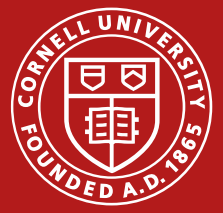
A flexible Excel tool to retrieve ACS/Census data

Jan Vink

Cornell Program on Applied Demographics

Presented at the 2025 ACS User Conference



Cornell Brooks Public Policy

Case study: Share of children age 10-14, enrolled in private school

- Table B14003: Sex by School Enrollment by Type of School by Age for the Population 3 Years and Over

In data.census.gov

All | Tables | Maps | Charts | Profiles | Pages

B14003 | Sex by School Enrollment by Type of School by Age for the Population 3 Years and Over

American Community Survey | Universe: Population 3 years and over | 2023: ACS 5-Year Estimates Detaile...

Notes | Geos 3 | Topics | Codes | Dataset | Year | Colum

Label	Tompkins County, New York	Ithaca city, New York	Ithaca City School District, New ...
	Estimate	Estimate	Estimate
Total:	100,931	31,639	67,344
Male:	49,306	16,157	33,328
Enrolled in public school:	7,110	1,821	4,393
3 and 4 years	367	195	252
5 to 9 years	1,667	320	1,042
10 to 14 years	1,742	181	830
15 to 17 years	1,210	171	632
18 and 19 years	449	70	304
20 to 24 years	1,037	692	933
25 to 34 years	548	160	323
35 years and over	90	32	77
Enrolled in private school:	12,465	7,912	11,628
3 and 4 years	351	97	249
5 to 9 years	397	89	164
10 to 14 years	210	28	160
15 to 17 years	186	52	99
18 and 19 years	4,189	2,491	4,083
20 to 24 years	5,264	3,997	5,129
25 to 34 years	1,584	978	1,505
35 years and over	284	180	239
Not enrolled in school:	29,731	6,424	17,307

Downloaded from data.census.gov in Excel or csv and opened in Excel

	A	B	C	D	E
1	Label (Grouping)	Tompkins	Ithaca city	Ithaca City School D	
2	Total:	100,931	31,639	67,344	
3	Male:	49,306	16,157	33,328	
4	Enrolled in public school:	7,110	1,821	4,393	
5	3 and 4 years	367	195	252	
6	5 to 9 years	1,667	320	1,042	
7	10 to 14 years	1,742	181	830	
8	15 to 17 years	1,210	171	632	
9	18 and 19 years	449	70	304	
10	20 to 24 years	1,037	692	933	
11	25 to 34 years	548	160	323	
12	35 years and over	90	32	77	
13	Enrolled in private school:	12,465	7,912	11,628	
14	3 and 4 years	351	97	249	
15	5 to 9 years	397	89	164	
16	10 to 14 years	210	28	160	
17	15 to 17 years	186	52	99	
18	18 and 19 years	4,189	2,491	4,083	
19	20 to 24 years	5,264	3,997	5,129	
20	25 to 34 years	1,584	978	1,505	
21	35 years and over	284	180	239	
22	Not enrolled in school:	29,731	6,424	17,307	
23	3 and 4 years	305	15	69	
24	5 to 9 years	248	20	127	
25	10 to 14 years	23	0	15	
26	15 to 17 years	6	0	0	
27	18 and 19 years	508	70	324	
28	20 to 24 years	1,842	530	973	
29	25 to 34 years	3,995	952	2,377	
30	35 years and over	22,804	4,837	13,422	
31	Female:	51,625	15,482	34,016	

Using API

Data.census.gov can be cumbersome

- Especially when wanting many, but not all geographies
- When wanting to extract data from multiple tables
- When automating

Example Census Bureau API request:

https://api.census.gov/data/2023/acs/acs5?get=GEO_ID,NAME,B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E&for=county:*&in=state:36

Finding variable names

- Variable names are: TableID_RowNumber(Postfix)
- Can find them:
  - Documentation on available APIs
  - Table shells
  - Download table as .zip from data.census.gov and open Column-Metadata:

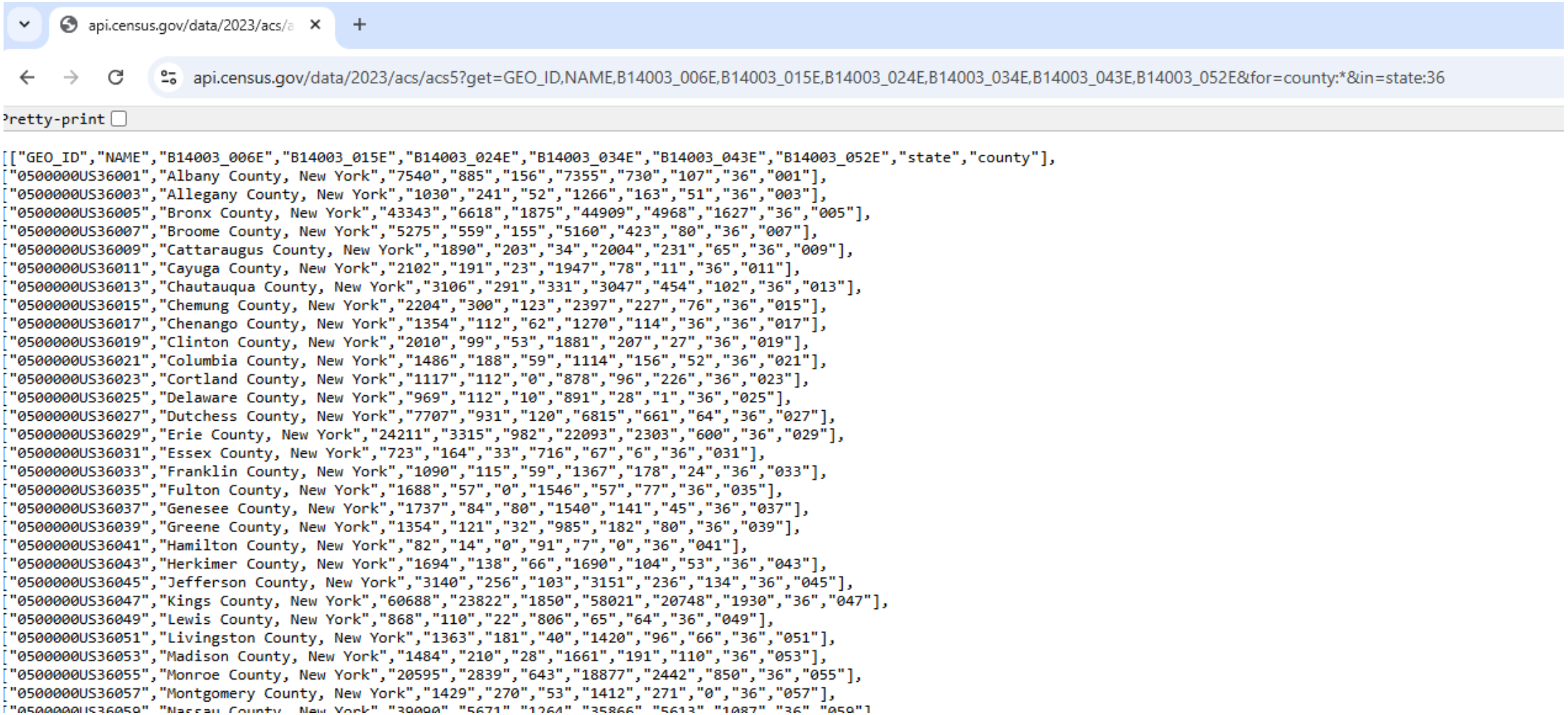
	A	B	C	D	E	F	G	H
1	Column Nam	Label						
14	B14003_006E	Estimate!!Total:!!Male:!!Enrolled in public school:!!10 to 14 years						
32	B14003_015E	Estimate!!Total:!!Male:!!Enrolled in private school:!!10 to 14 years						
50	B14003_024E	Estimate!!Total:!!Male:!!Not enrolled in school:!!10 to 14 years						
70	B14003_034E	Estimate!!Total:!!Female:!!Enrolled in public school:!!10 to 14 years						
88	B14003_043E	Estimate!!Total:!!Female:!!Enrolled in private school:!!10 to 14 years						
106	B14003_052E	Estimate!!Total:!!Female:!!Not enrolled in school:!!10 to 14 years						
118								

Example API call elements

https://api.census.gov/data/2023/acs/acs5?get=GEO_ID,NAME,B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E&for=county:*&in=state:36

Domain		https://api.census.gov/data
Path	Year/survey/product	2023/acs/acs5
Query	Get parameter (list of fields to retrieve)	get=GEO_ID,NAME,B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E
	Geography parameters	for=county:*&in=state:36

Default response in web browser

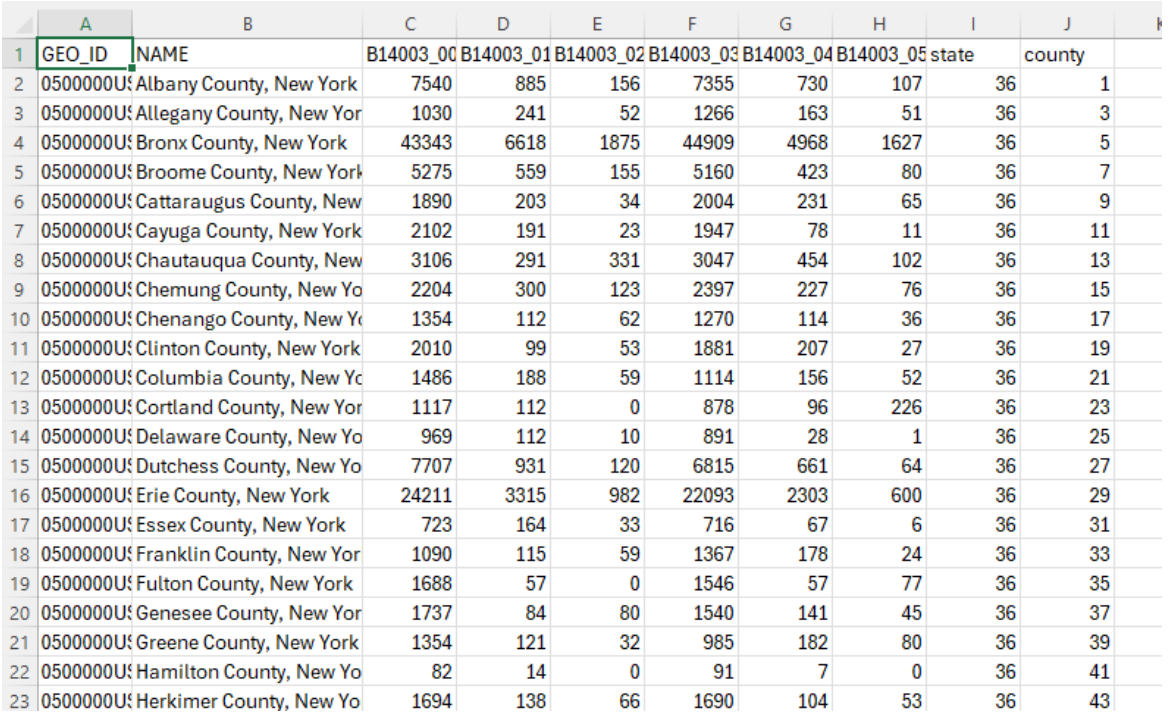



```
[["GEO_ID","NAME","B14003_006E","B14003_015E","B14003_024E","B14003_034E","B14003_043E","B14003_052E","state","county"],
["0500000US36001","Albany County, New York","7540","885","156","7355","730","107","36","001"],
["0500000US36003","Allegany County, New York","1030","241","52","1266","163","51","36","003"],
["0500000US36005","Bronx County, New York","43343","6618","1875","44909","4968","1627","36","005"],
["0500000US36007","Broome County, New York","5275","559","155","5160","423","80","36","007"],
["0500000US36009","Cattaraugus County, New York","1890","203","34","2004","231","65","36","009"],
["0500000US36011","Cayuga County, New York","2102","191","23","1947","78","11","36","011"],
["0500000US36013","Chautauqua County, New York","3106","291","331","3047","454","102","36","013"],
["0500000US36015","Chemung County, New York","2204","300","123","2397","227","76","36","015"],
["0500000US36017","Chenango County, New York","1354","112","62","1270","114","36","36","017"],
["0500000US36019","Clinton County, New York","2010","99","53","1881","207","27","36","019"],
["0500000US36021","Columbia County, New York","1486","188","59","1114","156","52","36","021"],
["0500000US36023","Cortland County, New York","1117","112","0","878","96","226","36","023"],
["0500000US36025","Delaware County, New York","969","112","10","891","28","1","36","025"],
["0500000US36027","Dutchess County, New York","7707","931","120","6815","661","64","36","027"],
["0500000US36029","Erie County, New York","24211","3315","982","22093","2303","600","36","029"],
["0500000US36031","Essex County, New York","723","164","33","716","67","6","36","031"],
["0500000US36033","Franklin County, New York","1090","115","59","1367","178","24","36","033"],
["0500000US36035","Fulton County, New York","1688","57","0","1546","57","77","36","035"],
["0500000US36037","Genesee County, New York","1737","84","80","1540","141","45","36","037"],
["0500000US36039","Greene County, New York","1354","121","32","985","182","80","36","039"],
["0500000US36041","Hamilton County, New York","82","14","0","91","7","0","36","041"],
["0500000US36043","Herkimer County, New York","1694","138","66","1690","104","53","36","043"],
["0500000US36045","Jefferson County, New York","3140","256","103","3151","236","134","36","045"],
["0500000US36047","Kings County, New York","60688","23822","1850","58021","20748","1930","36","047"],
["0500000US36049","Lewis County, New York","868","110","22","806","65","64","36","049"],
["0500000US36051","Livingston County, New York","1363","181","40","1420","96","66","36","051"],
["0500000US36053","Madison County, New York","1484","210","28","1661","191","110","36","053"],
["0500000US36055","Monroe County, New York","20595","2839","643","18877","2442","850","36","055"],
["0500000US36057","Montgomery County, New York","1429","270","53","1412","271","0","36","057"],
["0500000US36059","Nassau County, New York","39090","5671","1264","35866","5613","1087","36","059"]
```

Adding &outputFormat=csv

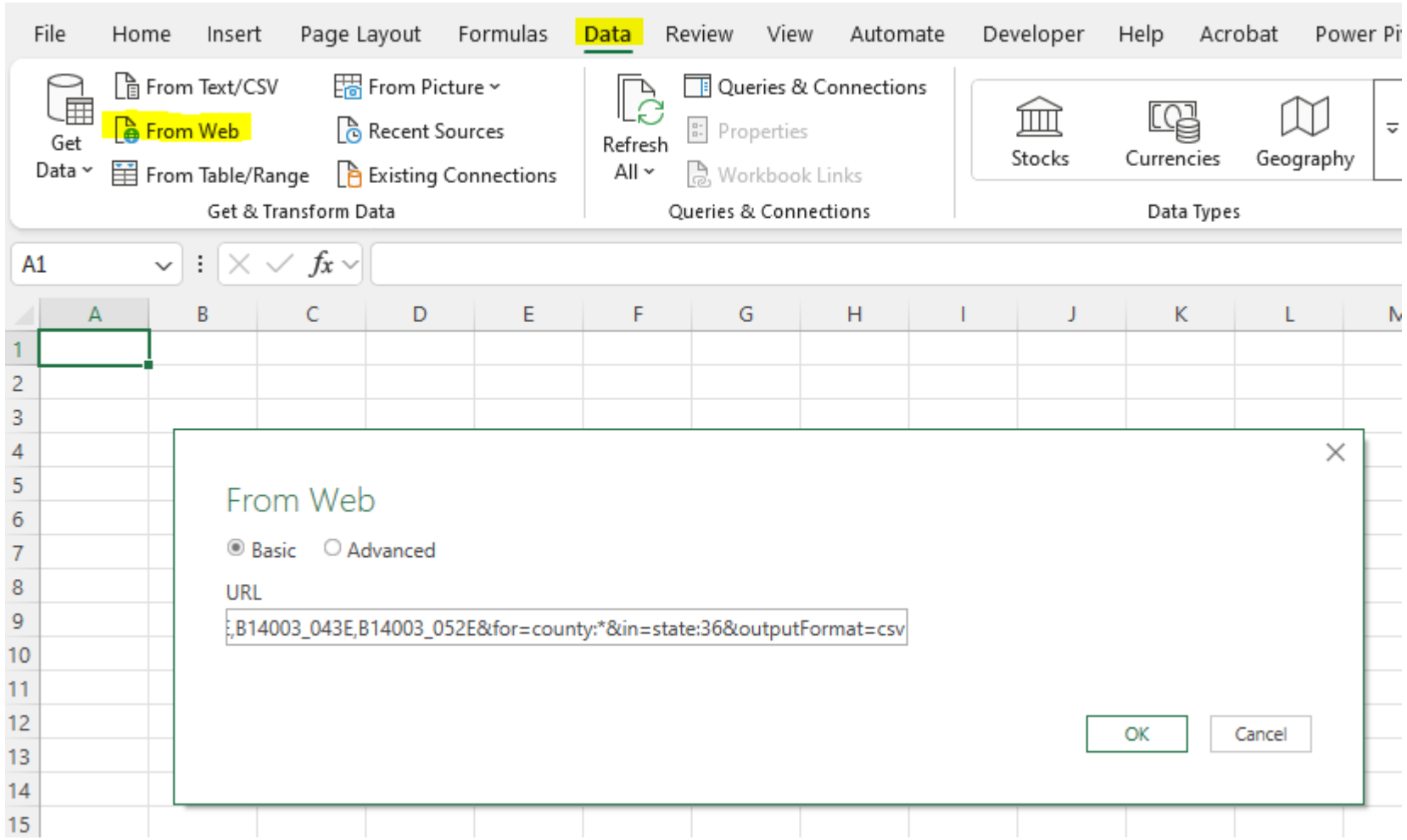
https://api.census.gov/data/2023/acs/acs5?get=GEO_ID,NAME,B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E&for=county:*&in=state:36&outputFormat=csv

- When used in browser:
  - Creates and downloads a .csv file that can be opened in Excel

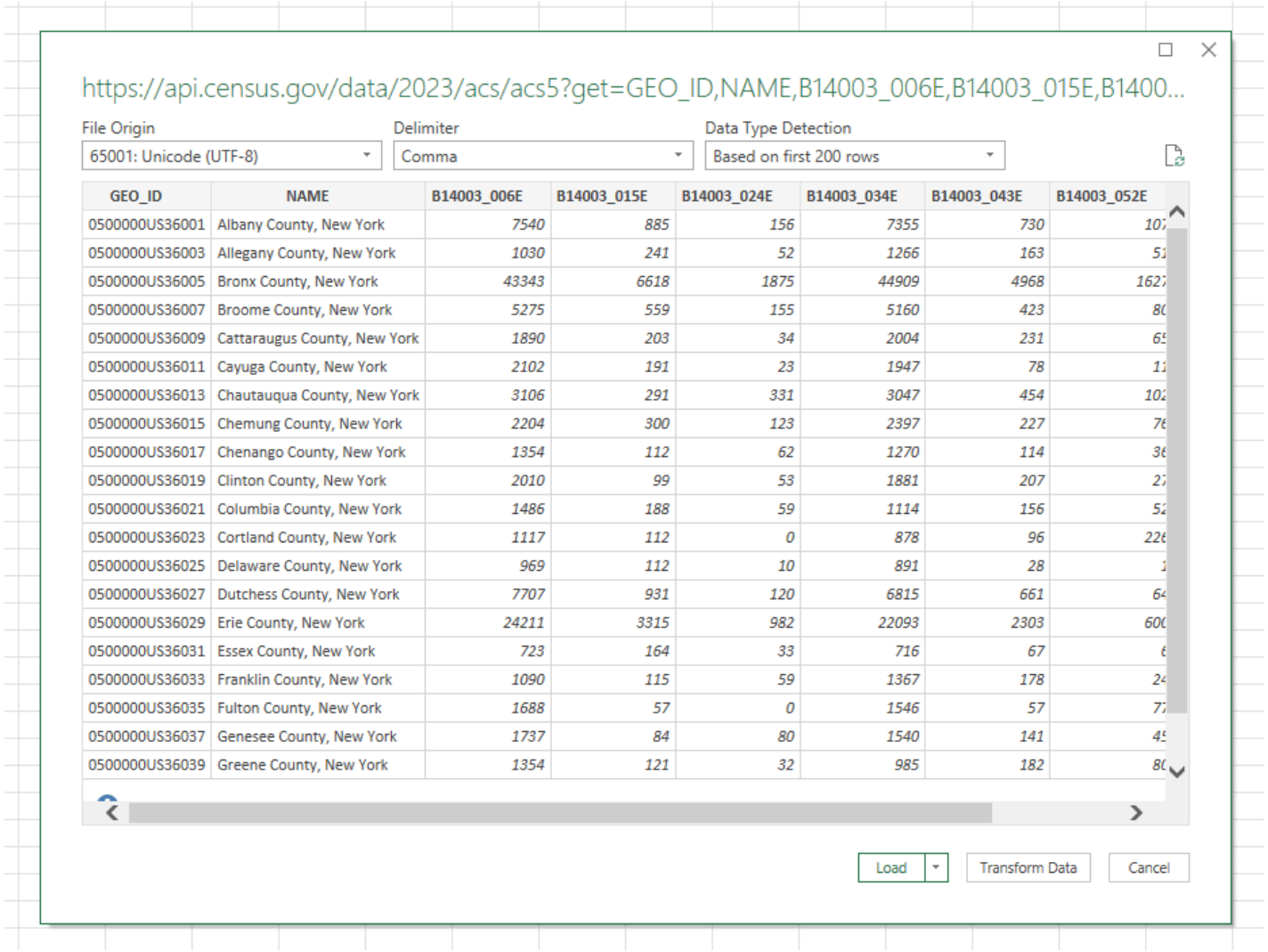


	A	B	C	D	E	F	G	H	I	J
1	GEO_ID	NAME	B14003_00	B14003_01	B14003_02	B14003_03	B14003_04	B14003_05	state	county
2	0500000US	Albany County, New York	7540	885	156	7355	730	107	36	1
3	0500000US	Allegany County, New Yor	1030	241	52	1266	163	51	36	3
4	0500000US	Bronx County, New York	43343	6618	1875	44909	4968	1627	36	5
5	0500000US	Broome County, New York	5275	559	155	5160	423	80	36	7
6	0500000US	Cattaraugus County, New	1890	203	34	2004	231	65	36	9
7	0500000US	Cayuga County, New York	2102	191	23	1947	78	11	36	11
8	0500000US	Chautauqua County, New	3106	291	331	3047	454	102	36	13
9	0500000US	Chemung County, New Yo	2204	300	123	2397	227	76	36	15
10	0500000US	Chenango County, New Y	1354	112	62	1270	114	36	36	17
11	0500000US	Clinton County, New York	2010	99	53	1881	207	27	36	19
12	0500000US	Columbia County, New Yo	1486	188	59	1114	156	52	36	21
13	0500000US	Cortland County, New Yor	1117	112	0	878	96	226	36	23
14	0500000US	Delaware County, New Yo	969	112	10	891	28	1	36	25
15	0500000US	Dutchess County, New Yo	7707	931	120	6815	661	64	36	27
16	0500000US	Erie County, New York	24211	3315	982	22093	2303	600	36	29
17	0500000US	Essex County, New York	723	164	33	716	67	6	36	31
18	0500000US	Franklin County, New Yor	1090	115	59	1367	178	24	36	33
19	0500000US	Fulton County, New York	1688	57	0	1546	57	77	36	35
20	0500000US	Genesee County, New Yor	1737	84	80	1540	141	45	36	37
21	0500000US	Greene County, New York	1354	121	32	985	182	80	36	39
22	0500000US	Hamilton County, New Yo	82	14	0	91	7	0	36	41
23	0500000US	Herkimer County, New Yo	1694	138	66	1690	104	53	36	43

Calling API in Excel



Intermediate step



https://api.census.gov/data/2023/acs/acs5?get=GEO_ID,NAME,B14003_006E,B14003_015E,B1400...

File Origin: 65001: Unicode (UTF-8) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

GEO_ID	NAME	B14003_006E	B14003_015E	B14003_024E	B14003_034E	B14003_043E	B14003_052E
0500000US36001	Albany County, New York	7540	885	156	7355	730	107
0500000US36003	Allegany County, New York	1030	241	52	1266	163	51
0500000US36005	Bronx County, New York	43343	6618	1875	44909	4968	1627
0500000US36007	Broome County, New York	5275	559	155	5160	423	80
0500000US36009	Cattaraugus County, New York	1890	203	34	2004	231	65
0500000US36011	Cayuga County, New York	2102	191	23	1947	78	11
0500000US36013	Chautauqua County, New York	3106	291	331	3047	454	102
0500000US36015	Chemung County, New York	2204	300	123	2397	227	76
0500000US36017	Chenango County, New York	1354	112	62	1270	114	36
0500000US36019	Clinton County, New York	2010	99	53	1881	207	27
0500000US36021	Columbia County, New York	1486	188	59	1114	156	52
0500000US36023	Cortland County, New York	1117	112	0	878	96	226
0500000US36025	Delaware County, New York	969	112	10	891	28	1
0500000US36027	Dutchess County, New York	7707	931	120	6815	661	64
0500000US36029	Erie County, New York	24211	3315	982	22093	2303	600
0500000US36031	Essex County, New York	723	164	33	716	67	6
0500000US36033	Franklin County, New York	1090	115	59	1367	178	24
0500000US36035	Fulton County, New York	1688	57	0	1546	57	77
0500000US36037	Genesee County, New York	1737	84	80	1540	141	45
0500000US36039	Greene County, New York	1354	121	32	985	182	80

Load | Transform Data | Cancel

API data loaded in an Excel Table

	A	B	C	D	E	F	G	H	I	J
1	GEO_ID	NAME	B14003_006E	B14003_015E	B14003_024E	B14003_034E	B14003_043E	B14003_052E	state	county
2	0500000US36001	Albany County, New York	7540	885	156	7355	730	107	36	1
3	0500000US36003	Allegany County, New York	1030	241	52	1266	163	51	36	3
4	0500000US36005	Bronx County, New York	43343	6618	1875	44909	4968	1627	36	5
5	0500000US36007	Broome County, New York	5275	559	155	5160	423	80	36	7
6	0500000US36009	Cattaraugus County, New York	1890	203	34	2004	231	65	36	9
7	0500000US36011	Cayuga County, New York	2102	191	23	1947	78	11	36	11
8	0500000US36013	Chautauqua County, New York	3106	291	331	3047	454	102	36	13
9	0500000US36015	Chemung County, New York	2204	300	123	2397	227	76	36	15
10	0500000US36017	Chenango County, New York	1354	112	62	1270	114	36	36	17
11	0500000US36019	Clinton County, New York	2010	99	53	1881	207	27	36	19
12	0500000US36021	Columbia County, New York	1486	188	59	1114	156	52	36	21
13	0500000US36023	Cortland County, New York	1117	112	0	878	96	226	36	23
14	0500000US36025	Delaware County, New York	969	112	10	891	28	1	36	25
15	0500000US36027	Dutchess County, New York	7707	931	120	6815	661	64	36	27
16	0500000US36029	Erie County, New York	24211	3315	982	22093	2303	600	36	29
17	0500000US36031	Essex County, New York	723	164	33	716	67	6	36	31
18	0500000US36033	Franklin County, New York	1090	115	59	1367	178	24	36	33

Put data in an Excel Table, create Query connection

Behind the scenes: Power Query

- Power Query is a tool embedded in Excel
  - Retrieve data (from file or API)
  - Filter rows/columns
  - Change data types
  - Clean data
  - Sort
  - Add columns based on calculations
  - Combine data sources (merge and/or append)

Out of scope for this presentation

Limitations of this process

- Result often don't have information on API call used
- API Results come from one data product, year and set of geographies at a time
  - Often need for combining data from different API calls
- Excel macros can overcome some of these limitations
  - Making use of Power Query capabilities
  - Macros enable multiple calls and automatic data manipulation

Excel macro demo

Ultimate goal: create a table with select variables or derived variables for a set of geographies from one or more Census Bureau data tables

Two worksheets that define the desired content

- One to define the rows (geographies)
- One to define what variables needed to produce the columns (select variables or derived variables)

Define geographies

	A	B	C	D	E	F
1	**BaseURL**	**GeoRequestID**	**Geography requests**			
2	https://api.census.gov/data/2023/acs/acs5	State	for=state:36			
3		SouthernTier	for=county:007,015,017,025,097,101,107,109&in=state:36			
4		AlbanyMCD	for=county%20subdivision:*&in=state:36&in=county:001			
5		ICSD	for=school%20district%20(unified):15570&in=state:36			
6		TompkinsBOCES	for=school%20district%20(unified):22140,06420,09330,13020,15570,16710,20790,28980&in=state:36			
7						

Requests for multiple geographic levels:

- New York State
- Counties in the Southern Tier
- Sub-county areas in Albany County
- Ithaca City School District
- Tompkins-Seneca-Tioga Boards of Cooperative Educational Services (BOCES)

Define variables and derived calculations

	A	B	C	D	E	F	G	H
1	Columns		API elements (prepended by https://api.census.gov/data)					
2	**IndexID**	**Description**	**Year**	**Survey**	**Product**	**Variables**	**Calculation**	**IncludeTotal**
3	TotPop	Total population	2023	acs	acs5	B01001_001E	[B01001_001E]	x
4	ShPrivate10_14_2023	Share children age 10-14, enrolled in private school	2023	acs	acs5	B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E	100*([B14003_015E]+[B14003_043E])/([B14003_006E]+[B14003_015E]+[B14003_024E]+[B14003_034E]+[B14003_043E]+[B14003_052E])	x
5	ShPrivate10_14_2013	Share children age 10-14, enrolled in private school	2013	acs	acs5	B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E	100*([B14003_015E]+[B14003_043E])/([B14003_006E]+[B14003_015E]+[B14003_024E]+[B14003_034E]+[B14003_043E]+[B14003_052E])	x
6	ShPrivate15_17	Share children age 15-17, enrolled in private school	2023	acs	acs5	B14003_007E,B14003_016E,B14003_025E,B14003_035E,B14003_044E,B14003_053E	100*([B14003_016E]+[B14003_044E])/([B14003_007E]+[B14003_016E]+[B14003_025E]+[B14003_035E]+[B14003_044E]+[B14003_053E])	x
7	MedHHIncome	Median HHIncome	2023	acs	acs5/profile	DP03_0062E	[DP03_0062E]	
8	ShareHHincomeGE100K	Share households with income >= 100,000	2023	acs	acs1/profile	DP03_0051E,DP03_0059E,DP03_0060E,DP03_0061E	100*([DP03_0059E]+[DP03_0060E]+[DP03_0061E])/[DP03_0051E]	x
9	LandArea	Land Area (sq miles)	2023	geoinfo		AREALAND,AREALAND_SQMI,INTPTLAT,INTPTLON	[AREALAND]/2589988.110336	x
10	Census10_14	Children age 10-14 Census 2020	2020	dec	dp	DP1_0004C	[DP1_0004C]	x
11								
12								
13								

Retrieve data

Power Query Syntax

Result

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	GeoF	GeoRequestName	GEO_ID	NAME	TotPop	ShPrivate10_14_202	ShPrivate10_14_2	ShPrivate15_17	MedHHInc	ShareHHir	LandArea	Census10_14	
2	1	State	0400000US	New York	19872319	14.83925864	12.8895866	15.0711071	84578	42.08394	47123.41	1191583	
3	2	SouthernTier	0500000US	Broome County, New York	197738	8.427737727	4.734369353	8.005307386	61059	29.65463	705.6506	10704	
4	2	SouthernTier	0500000US	Chemung County, New York	82805	9.892997935	7.444633731	11.80400891	63469	29.55522	407.3333	5131	
5	2	SouthernTier	0500000US	Chenango County, New York	46685	7.666214383	4.326364692	6.888763411	62093		893.4431	2906	
6	2	SouthernTier	0500000US	Delaware County, New York	44551	6.961710592	3.397711016	5.24137931	60226		1442.596	2388	
7	2	SouthernTier	0500000US	Schuyler County, New York	17749	7.40393627	8.789514264	0	65625		328.3434	940	
8	2	SouthernTier	0500000US	Steuben County, New York	93034	9.43334957	7.8125	4.403927069	64740	29.11722	1390.508	5809	
9	2	SouthernTier	0500000US	Tioga County, New York	48106	8.211794547	9.05511811	13.22666667	71791		518.7669	3112	
10	2	SouthernTier	0500000US	Tompkins County, New York	102879	11.48762317	5.023255814	12.18309859	73012	34.48228	474.6436	4372	
11	2	SouthernTier	Total_SouthernTier		633547	8.969544121	6.105311519	8.443235894		30.58406	6161.285	35362	
12	3	AlbanyMCD	0600000US	Albany city, Albany County, New Yo	100081	19.48974224	16.47668394	14.99599038	59485	26.85237	21.40371	4857	
13	3	AlbanyMCD	0600000US	Berne town, Albany County, New Yo	2685	0	22.68041237	0	99375		64.03004	123	
14	3	AlbanyMCD	0600000US	Bethlehem town, Albany County, N	35002	6.616097767	9.052273693	0.086730269	122856		49.03076	2169	
15	3	AlbanyMCD	0600000US	Coeymans town, Albany County, N	7235	0	4.423380727	10.47619048	90156		50.18154	407	
16	3	AlbanyMCD	0600000US	Cohoes city, Albany County, New Y	18043	5.846422339	4.953917051	2.7696793	62111		3.7727	912	
17	3	AlbanyMCD	0600000US	Colonie town, Albany County, New	85426	6.272147413	7.223942208	6.365565323	99196	49.81522	55.95631	4687	
18	3	AlbanyMCD	0600000US	Green Island town, Albany County,	2966	0	4.819277108	13.68421053	70281		0.747132	137	
19	3	AlbanyMCD	0600000US	Guilderland town, Albany County,	36922	11.07124552	2.665995976	4.405594406	107488		57.90433	1970	
20	3	AlbanyMCD	0600000US	Knox town, Albany County, New Yo	2553	0	3.743315508	25	121042		41.76247	155	
21	3	AlbanyMCD	0600000US	New Scotland town, Albany County	9084	8.316831683	5.30191458	18.40193705	114375		57.50006	564	
22	3	AlbanyMCD	0600000US	Rensselaerville town, Albany Coun	1895	19.04761905	22.05882353	19.14893617	106750		61.46432	100	
23	3	AlbanyMCD	0600000US	Watervliet city, Albany County, New	10285	6.036217304	10.05385996	7.329842932	55897		1.34172	582	
24	3	AlbanyMCD	0600000US	Westerlo town, Albany County, New	3197	0	6.081081081	13.13131313	81184		57.79281	187	
25	3	AlbanyMCD	Total_AlbanyMCD		315374	9.628569725	9.462623494	8.034830794		36.67648	522.8879	16850	
26	4	ICSD	9700000US	Ithaca City School District, New Yo	68261	15.0212565	2.105263158	14.04682274	71277	34.52127	155.5131	2272	
27	5	TompkinsBOCES	9700000US	Candor Central School District, Ne	4991	0	0	0	54983		83.95103	304	
28	5	TompkinsBOCES	9700000US	Dryden Central School District, Ne	13002	9.490740741	13.08304892	14.62765957	75158		99.61827	627	

Result formatted

	C	D	E	F	G	H	I	J	K	L
1	GEO_ID	NAME	TotPop	ShPrivate10_14_2023	ShPrivate10_14_2013	ShPrivate15_17	MedHHIncome	ShareHHIncomeGE100K	LandArea	Census10_14
2	0400000	**New York**	**19,872,319**	**14.8 %**	**12.9 %**	**15.1 %**	**$ 84,578**	**42.1 %**	**47,123.4**	**1,191,583**
3										
4	0500000	Broome County, New York	197,738	8.4 %	4.7 %	8.0 %	$ 61,059	29.7 %	705.7	10,704
5	0500000	Chemung County, New York	82,805	9.9 %	7.4 %	11.8 %	$ 63,469	29.6 %	407.3	5,131
6	0500000	Chenango County, New York	46,685	7.7 %	4.3 %	6.9 %	$ 62,093		893.4	2,906
7	0500000	Delaware County, New York	44,551	7.0 %	3.4 %	5.2 %	$ 60,226		1,442.6	2,388
8	0500000	Schuyler County, New York	17,749	7.4 %	8.8 %	0.0 %	$ 65,625		328.3	940
9	0500000	Steuben County, New York	93,034	9.4 %	7.8 %	4.4 %	$ 64,740	29.1 %	1,390.5	5,809
10	0500000	Tioga County, New York	48,106	8.2 %	9.1 %	13.2 %	$ 71,791		518.8	3,112
11	0500000	Tompkins County, New York	102,879	11.5 %	5.0 %	12.2 %	$ 73,012	34.5 %	474.6	4,372
12	**Total_SouthernTier**		**633,547**	**9.0 %**	**6.1 %**	**8.4 %**		30.6 %	**6,161.3**	**35,362**
13										
14	0600000	Albany city, Albany County, New Yo	100,081	19.5 %	16.5 %	15.0 %	$ 59,485	26.9 %	21.4	4,857
15	0600000	Berne town, Albany County, New Yo	2,685	0.0 %	22.7 %	0.0 %	$ 99,375		64.0	123
16	0600000	Bethlehem town, Albany County, N	35,002	6.6 %	9.1 %	0.1 %	$ 122,856		49.0	2,169
17	0600000	Coeymans town, Albany County, N	7,235	0.0 %	4.4 %	10.5 %	$ 90,156		50.2	407
18	0600000	Cohoes city, Albany County, New Y	18,043	5.8 %	5.0 %	2.8 %	$ 62,111		3.8	912
19	0600000	Colonie town, Albany County, New	85,426	6.3 %	7.2 %	6.4 %	$ 99,196	49.8 %	56.0	4,687
20	0600000	Green Island town, Albany County,	2,966	0.0 %	4.8 %	13.7 %	$ 70,281		0.7	137
21	0600000	Guilderland town, Albany County, I	36,922	11.1 %	2.7 %	4.4 %	$ 107,488		57.9	1,970
22	0600000	Knox town, Albany County, New Yo	2,553	0.0 %	3.7 %	25.0 %	$ 121,042		41.8	155
23	0600000	New Scotland town, Albany County	9,084	8.3 %	5.3 %	18.4 %	$ 114,375		57.5	564
24	0600000	Rensselaerville town, Albany Coun	1,895	19.0 %	22.1 %	19.1 %	$ 106,750		61.5	100
25	0600000	Watervliet city, Albany County, New	10,285	6.0 %	10.1 %	7.3 %	$ 55,897		1.3	582
26	0600000	Westerlo town, Albany County, New	3,197	0.0 %	6.1 %	13.1 %	$ 81,184		57.8	187
27	**Total_AlbanyMCD**		**315,374**	**9.6 %**	**9.5 %**	**8.0 %**		36.7 %	**522.9**	**16,850**
28										
29	9700000	**Ithaca City School District, New Y**	**68,261**	**15.0 %**	**2.1 %**	**14.0 %**	**$ 71,277**	**34.5 %**	**155.5**	**2,272**
30										
31	9700000	Candor Central School District, Ne	4,991	0.0 %	0.0 %	0.0 %	$ 54,983		84.0	304
32	9700000	Dryden Central School District, New	13,002	9.5 %	13.1 %	14.6 %	$ 75,158		99.6	627

Separate worksheets for all data retrieved

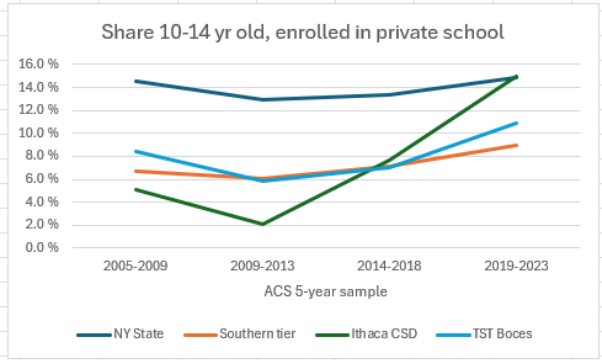
	A	B	C	D	E	F	G	H	I	J	K
1	GeoRequestID	GeoRequestName	GEO_ID	NAME	B14003_006E	B14003_015E	B14003_024E	B14003_034E	B14003_043E	B14003_052E	ShPrivate10_14_2023
2	1	State	0400000US36	New York	505157	91996	15400	478851	84843	15450	14.83925864
3	2	SouthernTier	0500000US36007	Broome County, New York	5275	559	155	5160	423	80	8.427737727
4	2	SouthernTier	0500000US36015	Chemung County, New York	2204	300	123	2397	227	76	9.892997935
5	2	SouthernTier	0500000US36017	Chenango County, New York	1354	112	62	1270	114	36	7.666214383
6	2	SouthernTier	0500000US36025	Delaware County, New York	969	112	10	891	28	1	6.961710592
7	2	SouthernTier	0500000US36097	Schuyler County, New York	484	24	10	481	55	13	7.40393627
8	2	SouthernTier	0500000US36101	Steuben County, New York	2577	313	180	2688	268	133	9.43334957
9	2	SouthernTier	0500000US36107	Tioga County, New York	1602	120	11	1206	139	76	8.211794547
10	2	SouthernTier	0500000US36109	Tompkins County, New York	1742	210	23	1908	268	10	11.48762317
11	3	AlbanyMCD	0600000US3600101000	Albany city, Albany County, New York	1525	383	32	1504	358	0	19.48974224
12	3	AlbanyMCD	0600000US3600106211	Berne town, Albany County, New York	158	0	0	38	0	0	0
13	3	AlbanyMCD	0600000US3600106354	Bethlehem town, Albany County, New York	1206	120	24	986	37	0	6.616097767
14	3	AlbanyMCD	0600000US3600116694	Coeymans town, Albany County, New York	108	0	0	101	0	0	0
15	3	AlbanyMCD	0600000US3600116749	Cohoes city, Albany County, New York	593	0	0	486	67	0	5.846422339
16	3	AlbanyMCD	0600000US3600117343	Colonie town, Albany County, New York	2509	218	52	2674	136	55	6.272147413
17	3	AlbanyMCD	0600000US3600130532	Green Island town, Albany County, New York	14	0	0	47	0	0	0
18	3	AlbanyMCD	0600000US3600131104	Guilderland town, Albany County, New York	858	126	0	861	90	16	11.07124552
19	3	AlbanyMCD	0600000US3600140002	Knox town, Albany County, New York	67	0	21	47	0	0	0
20	3	AlbanyMCD	0600000US3600150672	New Scotland town, Albany County, New York	175	0	0	262	42	26	8.316831683
21	3	AlbanyMCD	0600000US3600161181	Rensselaerville town, Albany County, New York	10	8	0	24	0	0	19.04761905
22	3	AlbanyMCD	0600000US3600178674	Watervliet city, Albany County, New York	155	30	17	285	0	10	6.036217304
23	3	AlbanyMCD	0600000US3600179851	Westerlo town, Albany County, New York	162	0	10	40	0	0	0
24	4	ICSD	9700000US3615570	Ithaca City School District, New York	830	160	15	954	158	0	15.0212565
25	5	TompkinsBOCES	9700000US3606420	Candor Central School District, New York	282	0	11	157	0	0	0
26	5	TompkinsBOCES	9700000US3609330	Dryden Central School District, New York	183	17	0	208	24	0	9.490740741
27	5	TompkinsBOCES	9700000US3613020	Groton Central School District, New York	165	22	0	160	9	0	8.707865169
28	5	TompkinsBOCES	9700000US3615570	Ithaca City School District, New York	830	160	15	954	158	0	15.0212565
29	5	TompkinsBOCES	9700000US3616710	Lansing Central School District, New York	477	0	0	337	19	0	2.280912365
30	5	TompkinsBOCES	9700000US3620790	Newfield Central School District, New York	56	0	0	161	46	0	17.4904943

Timeseries example

	A	B	C	D	E	F	G	H
1	Columns		API elements (prepended by https://api.census.gov/data)					
2	**IndexID**	**Description**	**Year**	**Survey**	**Product**	**Variables**	**Calculation**	**IncludeTotal**
3	ShPrivate10_14_2009	Share children age 10-14, enrolled in private school	2009	acs	acs5	B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E	100*([B14003_015E]+[B14003_043E])/([B14003_006E]+[B14003_015E]+[B14003_024E]+[B14003_034E]+[B14003_043E]+[B14003_052E])	x
4	ShPrivate10_14_2013		2013	acs	acs5	B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_052E	100*([B14003_015E]+[B14003_043E])/([B14003_006E]+[B14003_015E]+[B14003_024E]+[B14003_034E]+[B14003_043E]+[B14003_052E])	x
5	ShPrivate10_14_2018		2018	acs	acs5	B14003_006E,B14003_015E,B14003_024E,B14003_034E,B14003_043E,B14003_0	100*([B14003_015E]+[B14003_043E])/([B14003_006E]+[B14003_015E]+[B14003_024E]+[B14003_034E]+[B14003_043E]+[B14	x
6	ShPrivate10_14_2023		2023	acs	acs5	B14003_0(_024E,B14 B14003_0		
7								

	A	B	C	D	E	F	G	H	I
1	GeoReque	GeoReque	GEO_ID	NAME	ShPrivate1	ShPrivate1	ShPrivate1	ShPrivate10_14_2023	
2	1	State	0400000US	**New York**	**14.5 %**	**12.9 %**	**13.3 %**	**14.8 %**	
3	2	SouthernT	0500000US	Broome C	5.3 %	4.7 %	5.8 %	8.4 %	
4	2	SouthernT	0500000US	Chemung	11.2 %	7.4 %	8.3 %	9.9 %	
5	2	SouthernT	0500000US	Chenango	3.1 %	4.3 %	8.2 %	7.7 %	
6	2	SouthernT	0500000US	Delaware	5.9 %	3.4 %	4.5 %	7.0 %	
7	2	SouthernT	0500000US	Schuyler C	8.6 %	8.8 %	4.3 %	7.4 %	
8	2	SouthernT	0500000US	Steuben C	6.3 %	7.8 %	9.1 %	9.4 %	
9	2	SouthernT	0500000US	Tioga Cou	6.9 %	9.1 %	8.2 %	8.2 %	
10	2	SouthernT	0500000US	Tompkins	7.3 %	5.0 %	6.2 %	11.5 %	
11	2	SouthernT	**Total_SouthernTier**		**6.7 %**	**6.1 %**	**7.1 %**	**9.0 %**	
12	3	ICSD	9700000US	**Ithaca Cit**	**5.1 %**	**2.1 %**	**7.7 %**	**15.0 %**	
13	4	Tompkins	9700000US	Candor Ce	0.0 %	0.0 %	0.0 %	0.0 %	
14	4	Tompkins	9700000US	Dryden Ce	8.2 %	13.1 %	11.4 %	9.5 %	
15	4	Tompkins	9700000US	Groton Ce	5.9 %	2.7 %	2.2 %	8.7 %	
16	4	Tompkins	9700000US	Ithaca City	5.1 %	2.1 %	7.7 %	15.0 %	
17	4	Tompkins	9700000US	Lansing C	7.6 %	3.9 %	0.8 %	2.3 %	
18	4	Tompkins	9700000US	Newfield (	29.3 %	7.7 %	0.0 %	17.5 %	
19	4	Tompkins	9700000US	South Sen	23.4 %	12.1 %	20.5 %	25.9 %	
20	4	Tompkins	9700000US	Trumansb	7.7 %	9.1 %	4.8 %	3.6 %	
21	4	Tompkins	**Total_TompkinsBOC**		**8.4 %**	**5.9 %**	**7.0 %**	**10.9 %**	
22									
23									
24									
25									
26									
27									

	K	L	M	N	O
		2005-2009	2009-2013	2014-2018	2019-2023
	NY State	14.5 %	12.9 %	13.3 %	14.8 %
	Southern t	6.7 %	6.1 %	7.1 %	9.0 %
	Ithaca CSI	5.1 %	2.1 %	7.7 %	15.0 %
	TST Boces	8.4 %	5.9 %	7.0 %	10.9 %



Resources

At the Census Bureau	
Available APIs	https://www.census.gov/data/developers/data-sets.html
ACS 5-Year data	https://www.census.gov/data/developers/data-sets/acs-5year.html Includes list of variables by product Examples include different geography levels
User guide	https://www2.census.gov/data/api-documentation/api-user-guide.pdf
Census Bureau Academy Introduction to the API	https://www.census.gov/data/academy/courses/intro-to-the-census-bureau-data-api.html
At Cornell Program on Applied Demographics	
Retrieve data from the Census Bureau API in Excel, including link to Excel macro demo workbook	https://pad.human.cornell.edu/tools/API2Excel/index.cfm

Thank you!

Email: jkv3@cornell.edu

On Bluesky: @janvink.bsky.social