RDAS

Create Data Tables

Survey of Earned Doctorates (SED)

Contact Us

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https://ncsesdata.nsf.gov/rdas

Contents

Introduction - Create a Data Table

This tutorial provides instructions for creating a one-way data table with a nested row variable and then guide you through the steps required to create the multi-way percentage distribution data table pictured above. Proceed to the following page for instructions on accessing the SED data in RDAS.

The RDAS can create custom data tables featuring multiple types of calculations.*

These calculations include:

- One-way distribution with nested rows or filters;
- Multi-way distribution with filters;
- Multi-way average or median with nested rows or columns or with filters; and
- Multi-way percent greater or less than and percent equal or not equal with nested rows or columns
- Population counts for all calculation types.

Race/Ethnicity (of U.S. Citizens and Permanent Residents), by Broad doctorate field, filtered by Doctoral institution public/private indicator = Public: 2019

	Race/Ethnicity (of U.S. Citizens and Permanent Residents)													
	Total		Hispanic, U.S. citizen and permanent resident		White U.S. citizen and permanent resident		Black U.S. citizen and permanent resident		Asian U.S. citizen and permanent resident		Other U.S. citizen and permanent resident		Temporary visa holder	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	38,808	100%	1,977	5.1%	18,268	47.1%	1,637	4.2%	2,250	5.8%	975	2.5%	13,701	35.3%
Broad doctorate field														
Life sciences	8,864	100%	519	5.8%	4,555	51.4%	324	3.7%	643	7.2%	262	3.0%	2,562	28.9%
Physical sciences and earth sciences	4,602	100%	195	4.2%	2,188	47.5%	72	1.6%	237	5.1%	112	2.4%	1,798	39.1%
Mathematics and computer sciences	3,077	100%	85	2.8%	967	31.4%	55	1.8%	199	6.5%	62	2.0%	1,708	55.5%
Psychology and social sciences	5,819	100%	405	7.0%	3,354	57.6%	307	5.3%	280	4.8%	204	3.5%	1,269	21.8%
Engineering	7,715	100%	215	2.8%	2,181	28.3%	152	2.0%	487	6.3%	98	1.3%	4,582	59.4%
Education	3,749	100%	258	6.9%	2,178	58.1%	502	13.4%	175	4.7%	114	3.0%	522	13.9%
Humanities and arts	2,939	100%	230	7.8%	1,965	66.8%	107	3.7%	104	3.5%	89	3.0%	443	15.1%
Other non-science and engineering fields	2,043	100%	70	3.4%	881	43.1%	118	5.8%	124	6.1%	33	1.6%	816	40.0%

There are missing or not applicable cases in this table. As a result, the reported total number of cases is less than the full population.
The name(s) of the variables used in this table are: CITRACE, SRFOS1, and PHDCARNP_R. The variable names are unique identifiers. To locate these variables, enter the variable name in the search box.
Source: National Center for Science and Engineering Statistics, Restricted Data Analysis System (RDAS), Survey of Earned Doctorates, 2019.

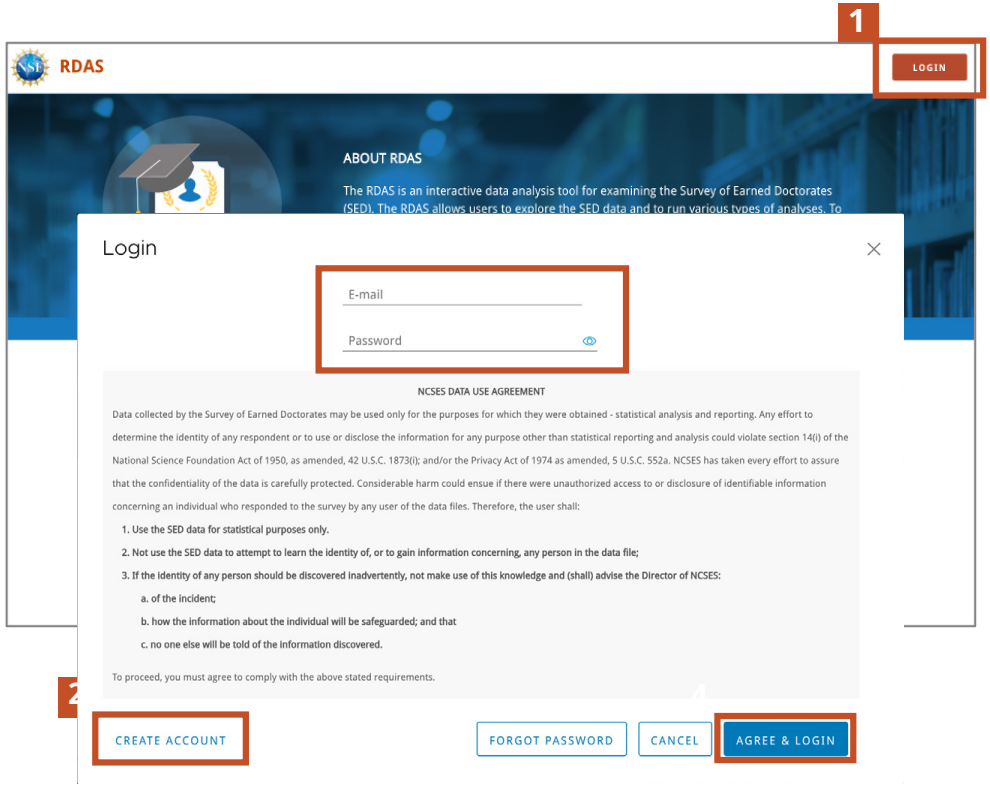
* For detailed information regarding the calculations available in the SED RDAS, please see Glossary.

Accessing the RDAS

The RDAS is available at https://ncsesdata.nsf.gov/rdas/

To access the RDAS, create an user account as follows:

1. Click the orange button labeled "Login" to open the login window. Review the NCSES Data Use Agreement.
2. Click the blue link that reads "CREATE ACCOUNT."
3. Enter your e-mail address and desired password in areas labeled "E-mail" and "Password"
4. Click "AGREE & LOGIN".
5. You will receive an e-mail to register and activate your RDAS account. Click the link provided in the e-mail to return to the RDAS application.
6. You will be taken to the workspace shown on the next page.



Part 1 - Create a One-way Data

The data table pictured on this page was created using the RDAS and it is an example of a one-way distribution analysis with a nested row variable. It shows:

- percentage distribution of 2018 doctorate recipients by their broad doctorate field of study; and
- distributions of the recipients' gender for each broad doctorate field.

In this data, broad doctorate field is used as a row variable and gender is used as a nested row variable.

The following pages will guide you through the steps required to create this one-way analysis using the RDAS.

Broad doctorate field, nested with Sex: 2018

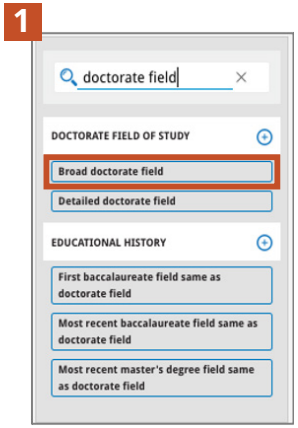
	Number	Percent
Total	55,184	100%
Broad doctorate field, nested with Sex		
Life sciences	12,776	23.2%
Male	5,659	10.3%
Female	7,117	12.9%
Physical sciences and earth sciences	6,335	11.5%
Male	4,219	7.6%
Female	2,116	3.8%
Mathematics and computer sciences	4,030	7.3%
Male	3,049	5.5%
Female	981	1.8%
Psychology and social sciences	8,897	16.1%
Male	3,639	6.6%
Female	5,258	9.5%
Engineering	10,182	18.5%
Male	7,773	14.1%
Female	2,409	4.4%
Education	4,831	8.8%
Male	1,507	2.7%
Female	3,324	6.0%
Humanities and arts	5,143	9.3%
Male	2,569	4.7%
Female	2,574	4.7%
Other non-science and engineering fields	2,990	5.4%
Male	1,473	2.7%
Female	1,517	2.7%

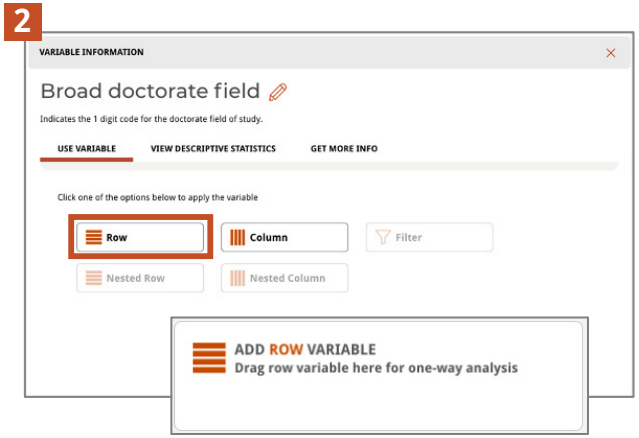
The name(s) of the variables used in this table are: SRFOS1 and SEX. The variable names are unique identifiers. To locate these variables, enter the variable name in the search box.
Source: National Center for Science and Engineering Statistics, Restricted Data Analysis System (RDAS), Survey of Earned Doctorates, 2018.

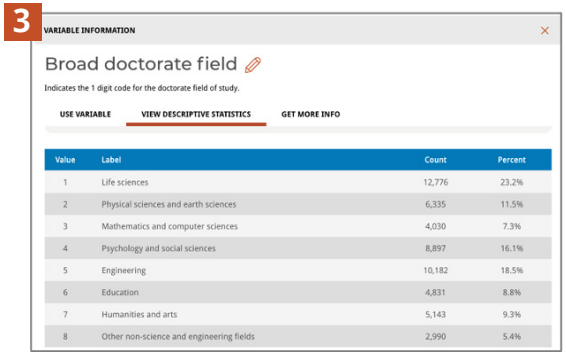
Part 1.a - Add Row Variable

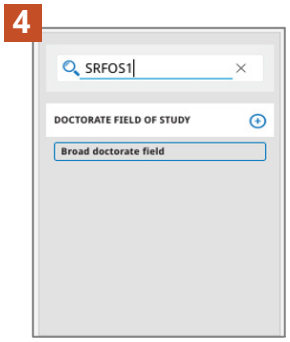
To create the one-way analysis on the previous page, first find and add the row variable "Broad doctorate field". Follow the steps below to begin:

1. In the box labeled “Search Variables” enter “doctorate field” and click the variable labeled “Broad doctorate field” that appears below the “DOCTORATE FIELD OF STUDY” topic heading. This will launch the VARIABLE INFORMATION window.
2. In the VARIABLE INFORMATION window, click the button labeled “Row” to add “Broad doctorate field” to your data table. You can also add the variable by dragging it directly to the box labeled “ADD ROW VARIABLE.”
3. To learn more about variables click the “VIEW DESCRIPTIVE STATISTICS” tab to see variable categories or the “GET MORE INFO” tab to view other variable metadata such as variable name.
4. You can also find variables by expanding the topic headings or you can search directly by variable name (e.g., enter ”SRFOS1” in the box labeled “Search Variables”).









Part 1.b - Add Nested Row Variable

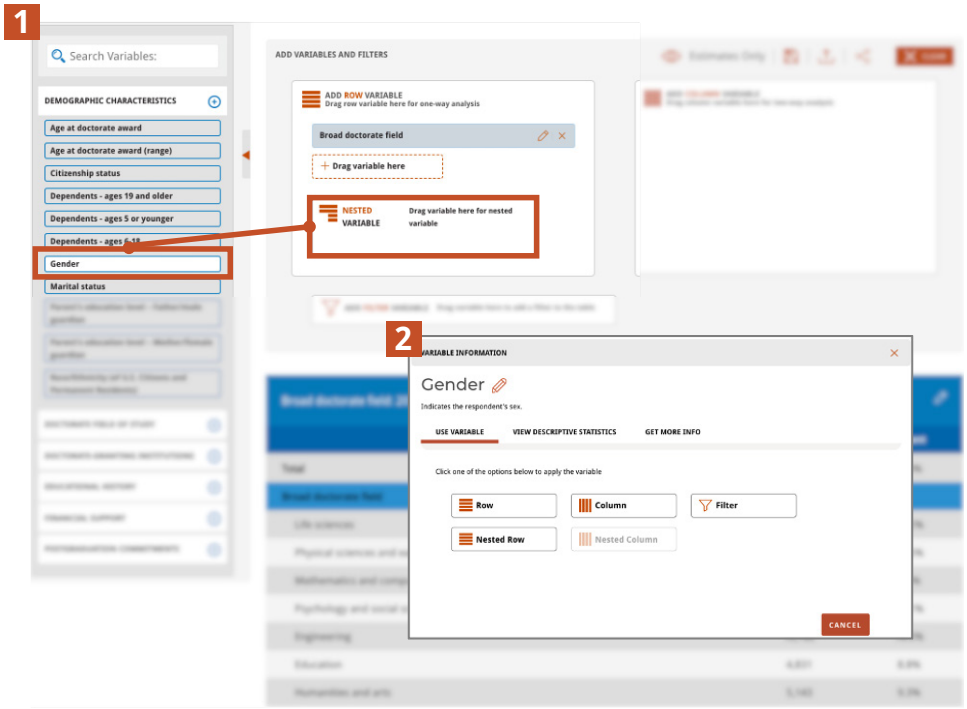
The next step is to add the nested row variable, Gender, to your data table. Nested row variables cannot be added until at least one row variable is added.

Follow the steps below to add a nested row variable:

1. In the box labeled “Search Variables” enter “gender” and find the variable labeled “Gender” that appears below the “DEMOGRAPHIC CHARACTERISTICS” topic heading. Click on the “Gender” variable, and while holding down your mouse, drag the variable to the box labeled “NESTED VARIABLE.”
2. You can also add nested variables by clicking on the variable name to launch the VARIABLE INFORMATION window and then clicking the button labeled “Row” to add Broad doctorate field to your data table.

The table will automatically update with data as variables are added.

Continue to the next page to learn more about your completed one-way table.



Your Finished One-way Data Table

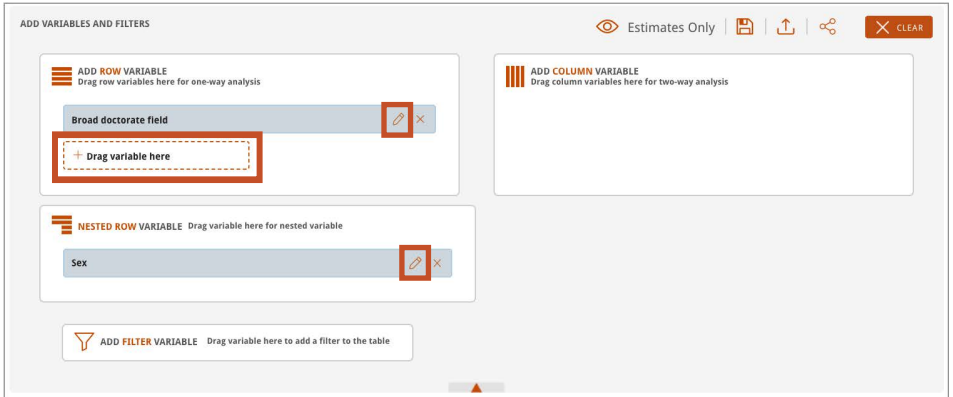
After adding the variables to the nested row, your one-way data table is complete.

You can add more row variables to your data table by dragging them to the box highlighted in the example table on the right; the nested row variable will be applied to each new row variable that is added.

You can customize the variable labels or table title by clicking the pencil icons that are highlighted in the example table.

Additional options for viewing other calculations, saving your data table, and sharing your data table are discussed on page 12.

Click the button labeled “CLEAR” to remove your variable selections and begin Part 2 of this tutorial, where you will create a multi-way data table.



Broad doctorate field, nested with Sex: 2018

	Number	Percent
Total	55,184	100%
Broad doctorate field, nested with Sex		
Life sciences	12,776	23.2%
Male	5,659	10.3%
Female	7,117	12.9%
Physical sciences and earth sciences	6,335	11.5%
Male	4,219	7.6%
Female	2,116	3.8%
Mathematics and computer sciences	4,030	7.3%
Male	3,049	5.5%
Female	981	1.8%
Psychology and social sciences	8,897	16.1%
Male	3,639	6.6%
Female	5,258	9.5%

Part 2 - Create a Multi-way Data Table

The data table pictured on this page is an example of a multi-way distribution analysis with filters created using the RDAS.

The data table provides the percentage of 2018 doctorate recipients from public institutions by broad doctorate field and race/ethnicity.

In this example, race/ethnicity is used as a column variable, broad doctorate field as a row variable, and a public/private indicator is used as a filter to include only public doctorate institutions.

The following pages will guide you through the steps to create this multi-way data table using the RDAS.

Race/Ethnicity (of U.S. Citizens and Permanent Residents), by Broad doctorate field, filtered by Doctoral institution public/private indicator: 2018

	Race/Ethnicity (of U.S. Citizens and Permanent Residents)													
	Total		Hispanic, U.S. citizen and permanent resident		White U.S. citizen and permanent resident		Black U.S. citizen and permanent resident		Asian U.S. citizen and permanent resident		Other U.S. citizen and permanent resident		Temporary visa holder	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	38,699	100%	1,850	4.8%	18,755	48.5%	1,659	4.3%	2,218	5.7%	938	2.4%	13,279	34.3%
Broad doctorate field														
Life sciences	8,974	100%	447	5.0%	4,698	52.4%	382	4.3%	606	6.7%	231	2.6%	2,610	29.1%
Physical sciences and earth sciences	4,557	100%	171	3.8%	2,254	49.5%	74	1.6%	256	5.6%	82	1.8%	1,719	37.7%
Mathematics and computer sciences	2,916	100%	74	2.5%	962	33.0%	49	1.7%	160	5.5%	44	1.5%	1,627	55.8%
Psychology and social sciences	5,738	100%	391	6.8%	3,365	58.6%	317	5.5%	306	5.3%	208	3.6%	1,151	20.1%
Engineering	7,556	100%	222	2.9%	2,148	28.4%	125	1.6%	513	6.8%	109	1.4%	4,440	58.8%
Education	3,890	100%	244	6.3%	2,349	60.4%	494	12.7%	138	3.5%	133	3.4%	532	13.7%
Humanities and arts	2,998	100%	232	7.8%	2,046	68.3%	110	3.7%	132	4.4%	77	2.6%	400	13.3%
Other non-science and engineering fields	2,071	100%	68	3.3%	934	45.1%	108	5.2%	107	5.2%	53	2.6%	800	38.6%

The name(s) of the variables used in this table are: CITRACE, SRFOS1, and PHDCARNP_R. The variable names are unique identifiers. To locate these variables, enter the variable name in the search box.

Source: National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2018.

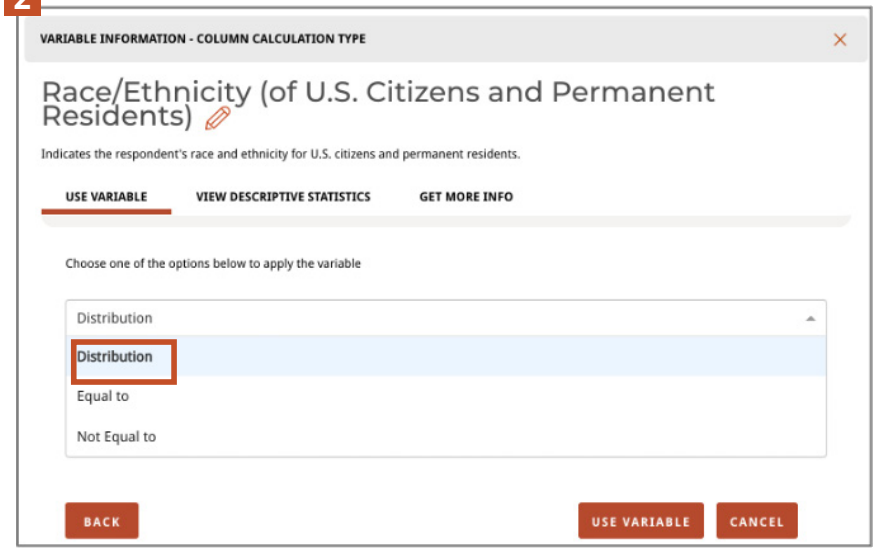
Part 2.a - Add Column Variable

Unlike the one-way data table created in the previous section, multi-way data tables require a column variable. To create the multi-way data table displayed on the previous page, you must find and add the variable Race/Ethnicity and select a calculation type. Follow the steps below:

1. In the box labeled “Search Variables” enter “race” and find the variable labeled “Race/Ethnicity (of U.S. Citizens and Permanent Residents).” Click on the variable, and while holding down your mouse, drag the variable to the box labeled “ADD COLUMN VARIABLE.” This will launch the VARIABLE INFORMATION window.
2. In the VARIABLE INFORMATION window, a tab labeled “Use Variable” will be open and you will be prompted to choose a calculation type option. Select the option labeled “Distribution” from the dropdown menu and click the button labeled “USE VARIABLE.” This will select a percentage distribution as your analysis type.

1

2

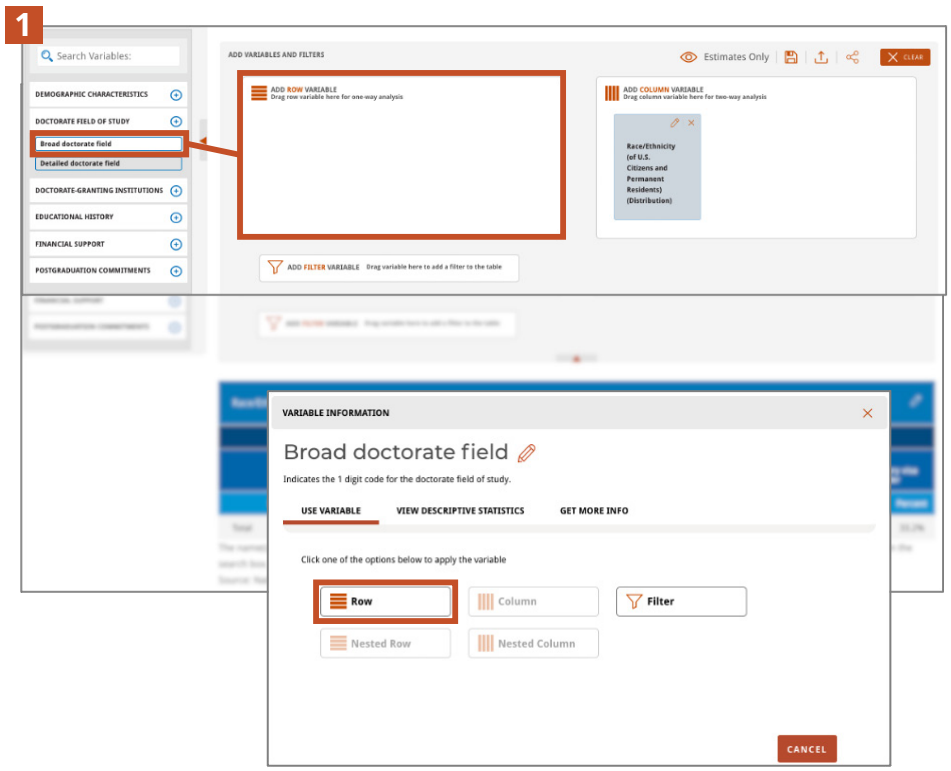


Part 2.b - Add Row Variable

The next step is to add the row variable, Broad doctorate field, to your data table. Follow the steps below to add a row variable:

1. In the box labeled “Search Variables” enter “doctorate field” and find the variable labeled “Broad doctorate field” that appears below the “DOCTORATE FIELD OF STUDY” topic heading. Click on the variable, and while holding down your mouse, drag the variable to the box labeled “Add Row Variable.”

2. You can also add a row variable by clicking on the variable name to launch the VARIABLE INFORMATION window and then clicking the button labeled
“Row.” This will add Broad doctorate field as a row in your data table.



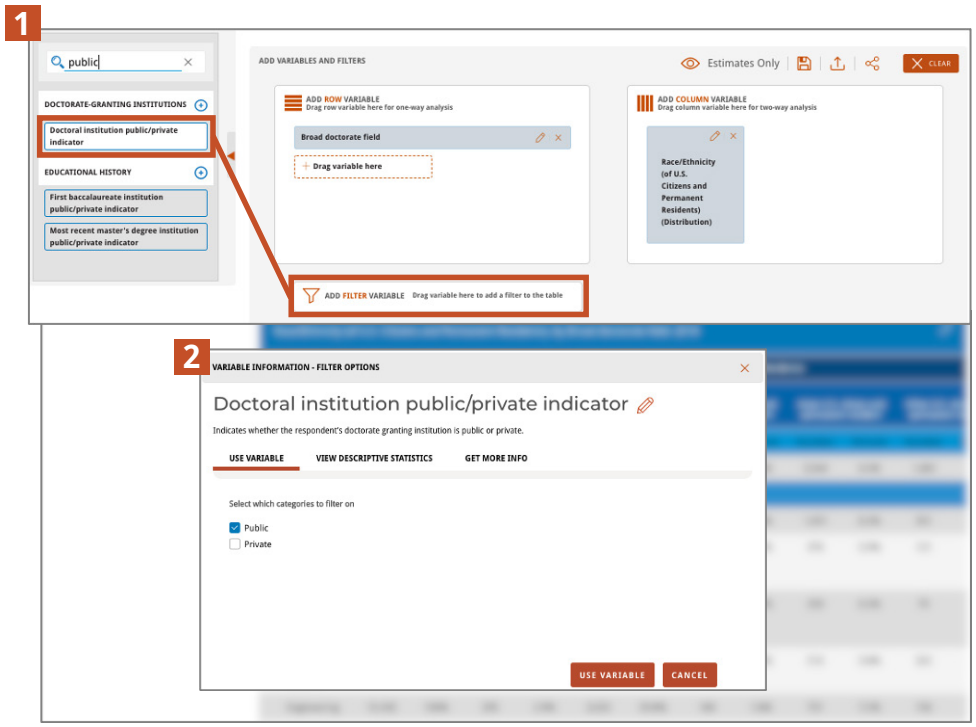
Continue to the next page to add a filter to your data table.

Part 2.c - Add Filter Variable

The last step is to add the filter variable, Doctoral institution public/private indicator so that only public institutions are included in your data table. Follow the steps below to add a filter variable:

1. In the box labeled “Search Variables” enter “public” and find the variable labeled “Doctoral institution public/ private indicator” that appears below the “DOCTORATE-GRANTING INSTITUTION” topic heading. Click on the variable, and while holding down your mouse, drag the variable to the box labeled “ADD FILTER VARIABLE.”
2. In the VARIABLE INFORMATION window, a tab labeled “Use Variable” will be open and you will be prompted to choose a category to filter on. Check the box beside the “Public” label and click the button labeled “Use Variable.” This will filter your data table so that only public doctoral institutions are included in your analysis.

Continue to the next page to learn more about your completed multi-way table.



Your Finished Multi-way Data Table

After adding the filter variable, your multi-way data table will be complete. You can use the arrows highlighted in the image below to hide the search and variable options menus and focus only on your data table.

Additional options for viewing other calculations, saving your data table, and sharing your data table are discussed on the following page.

Race/Ethnicity (of U.S. Citizens and Permanent Residents), by Broad doctorate field, filtered by Doctoral institution public/private indicator = Public: 2018

	Race/Ethnicity (of U.S. Citizens and Permanent Residents)													
	Total		Hispanic, U.S. citizen and permanent resident		White U.S. citizen and permanent resident		Black U.S. citizen and permanent resident		Asian U.S. citizen and permanent resident		Other U.S. citizen and permanent resident		Temporary visa holder	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	38,594	100%	1,825	4.7%	18,787	48.7%	1,637	4.2%	2,286	5.9%	949	2.5%	13,110	34.0%
Broad doctorate field														
Life sciences	9,003	100%	452	5.0%	4,684	52.0%	396	4.4%	631	7.0%	242	2.7%	2,599	28.9%
Physical sciences and earth sciences	4,519	100%	158	3.5%	2,228	49.3%	79	1.7%	243	5.4%	78	1.7%	1,733	38.3%
Mathematics and computer sciences	2,939	100%	72	2.5%	983	33.5%	54	1.9%	173	5.9%	52	1.8%	1,604	54.6%
Psychology and social sciences	5,804	100%	409	7.0%	3,446	59.4%	285	4.9%	312	5.4%	225	3.9%	1,126	19.4%
Engineering	7,480	100%	214	2.9%	2,172	29.0%	128	1.7%	510	6.8%	101	1.3%	4,355	58.2%
Education	3,838	100%	222	5.8%	2,325	60.6%	462	12.0%	168	4.4%	137	3.6%	523	13.6%
Humanities and arts	2,992	100%	232	7.7%	2,035	68.0%	111	3.7%	128	4.3%	83	2.8%	403	13.5%
Other non-science and engineering fields	2,019	100%	66	3.3%	913	45.2%	121	6.0%	120	6.0%	32	1.6%	768	38.0%

There are missing or not applicable cases in this table. As a result, the reported total number of cases is less than the full population.

The name(s) of the variables used in this table are: CITRACE, SRFOS1, and PHDCARNP_R. The variable names are unique identifiers. To locate these variables, enter the variable name in the search box.

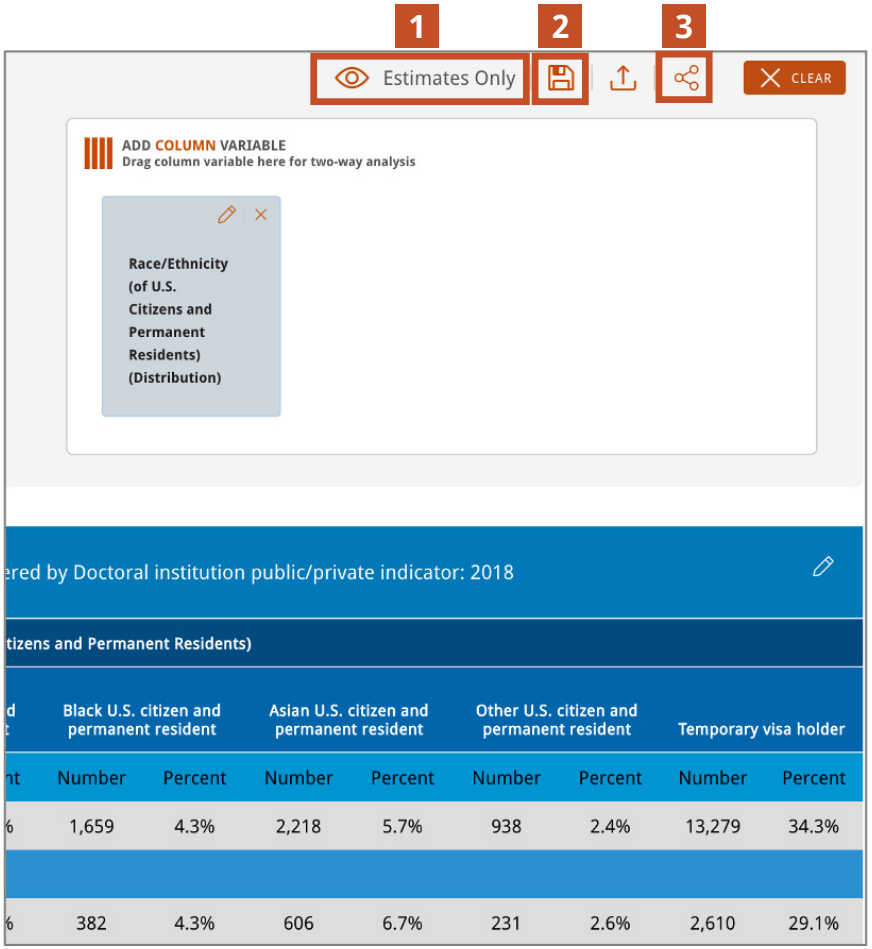
Source: National Center for Science and Engineering Statistics, Restricted Data Analysis System (RDAS), Survey of Earned Doctorates, 2018.

Toggle Calculations, Download, and Share

You can use the toolbars at the top of your data table to view additional statistics, download your data table, or share your data table. You can click the button labeled “CLEAR” to remove your variable selections and create a new table.

More information about the toolbar options is provided below.

1. **Calculation**
   Toggle between estimates, standard errors, relative standard errors, or confidence intervals.
2. **Download**
   Save your data table in Excel and PDF format or download your table specifications for future import into the NSF RDAS.
3. **Sharing**
   Create a link to share your table or share a link directly via e-mail.
4. **Edit**
   Edit your table’s title.



Glossary

TYPES OF DATA TABLES

- One-way table: A data table that uses one variable.
- Multi-way table: A data table with more than one variable (e.g., an independent and dependent variable).

TABLE COMPONENTS

- Row variable(s): These variables appear as rows in a data table. Row variables can be used in both one-way and multi-way data tables.
- Column variable(s): These variables appear as columns in a data table. In the NSF RDAS, column variables act as dependent variables for multi-way data tables.
- Nested Row variable: Nested row variables appear as subcategories within your row variable categories. Nested row variables can be used in both one-way and two-way data tables. Only one can be added per data table.
- Nested Column variable: Nested column variables appear as subcategories within your column variable categories. Nested column variables are available for multi-way data tables and for average, median, percent greater than/less than, and percent equal to/not equal to analyses.
- Filter variable: Filter variables will include only the reported values for a selected filter variable category. Only categorical variables may be used as filters.

CALCULATIONS

- Count: The number of doctorate recipients pertaining to a given category.
- Distribution: A percentage distribution of doctorate recipients across the selected column variable categories.
- Average: The sum of all reported values for a given continuous variable divided by the total number of doctoral recipients.
- Median: The midpoint reported value for a given continuous variable.
- Percent greater or less than: The percentage of doctorate recipients larger or less than a user-defined category.
- Percent equal to or not equal to: The percentage of doctorate recipients equal-to or not-equal-to a user-defined category.

Learn More About NCSES and SED

Learn more about NCSES

For information about the National Center for Science and Engineering Statistics (NCSES), visit the NCSES homepage at:
https://ncses.nsf.gov/

Learn more about SED

For more information about the Survey of Earned Doctorates (SED) and access other SED data products, visit:
https://www.nsf.gov/statistics/srvydoctorates/

Contact Us

Have other questions about the RDAS tool? Contact us by e-mail at:
RDAS_support@rti.org