Mc Graw Hill

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DataVis

Material Properties

by ACCESS Engineering

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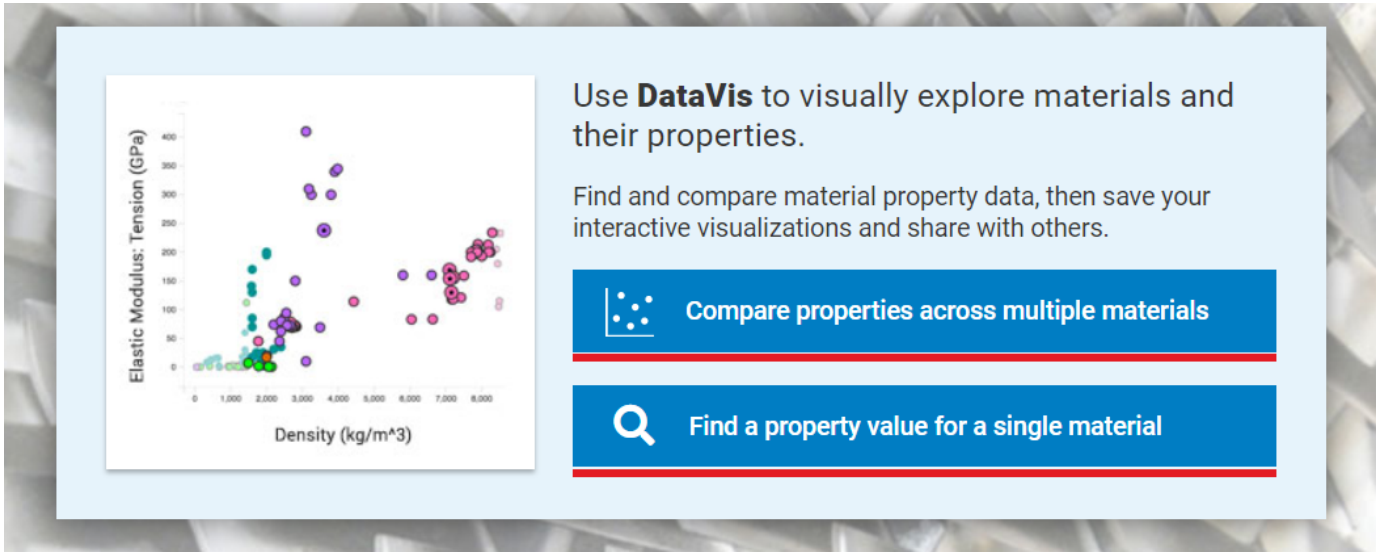
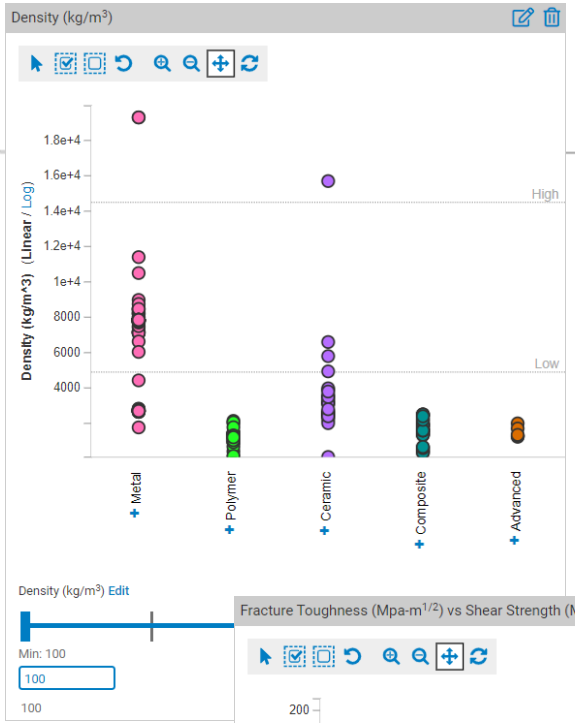
What is DataVis?

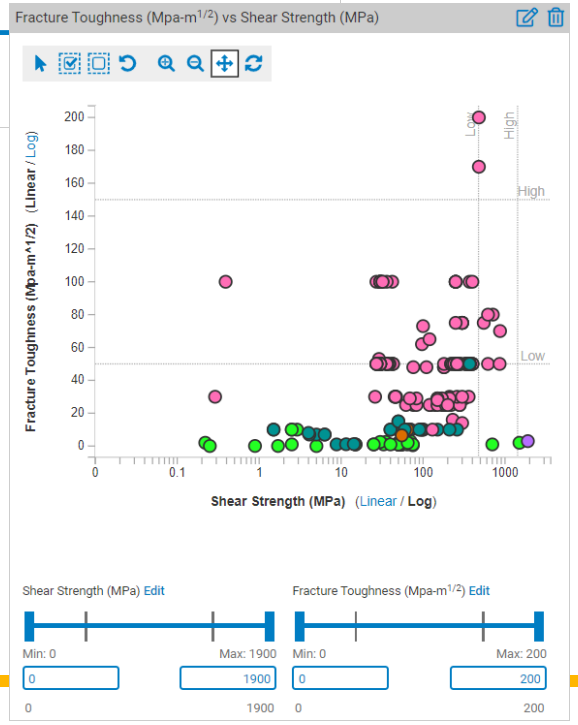
- DataVis is an interactive, web-based data visualization tool that transforms the way students learn about material properties.
- Users can instantly visualize property data in an interactive dot-plots and scatterplots across a wide range of materials.
- DataVis includes a curated dataset of 200 materials and 65 properties.



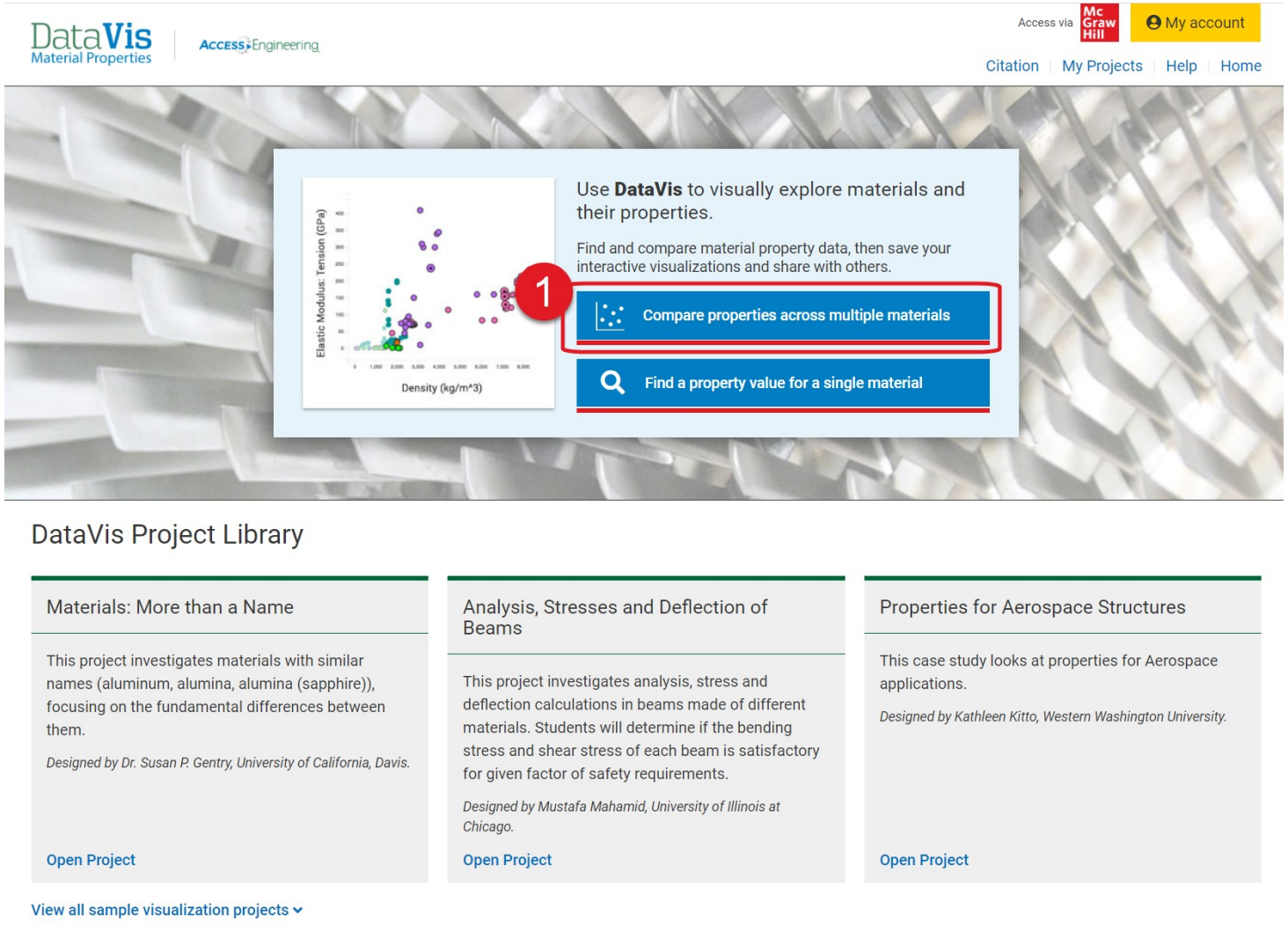
Available Visualizations

- Compare materials for a single property in a dot plot or compare two properties against each other in a scatterplot.
- In the top visualization to the right, you can see the density of all 200 materials being compared across material classes.
- In the bottom visualization to the right, you can see a comparison of fracture toughness vs. shear strength across all material classes (represented by different colors)
- Up to five visualizations can be added to a page in DataVis



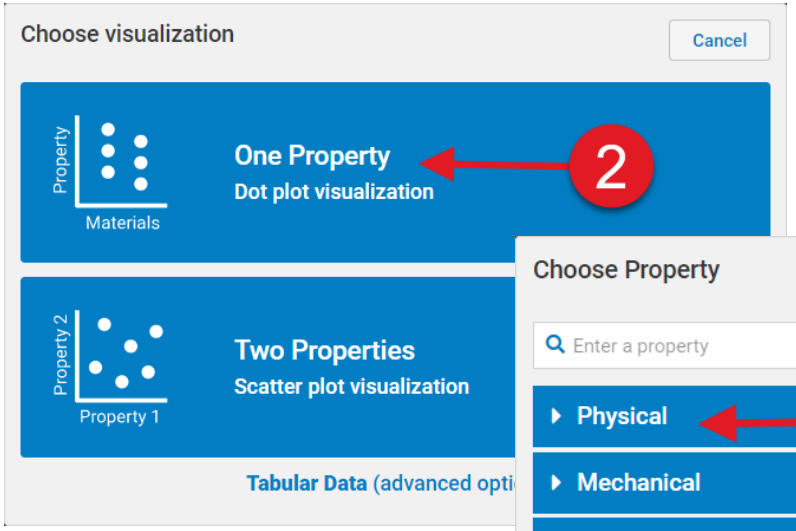


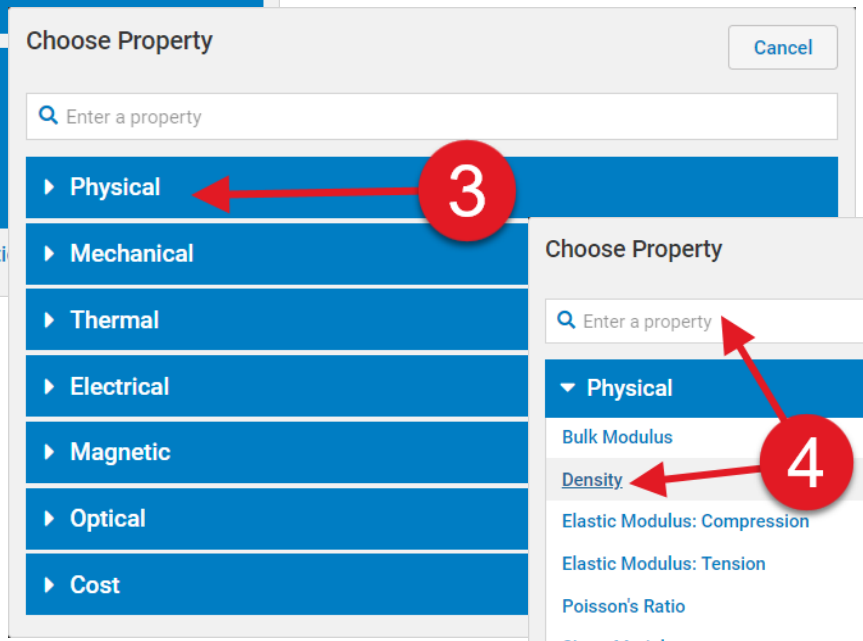
Creating a DataVis Project

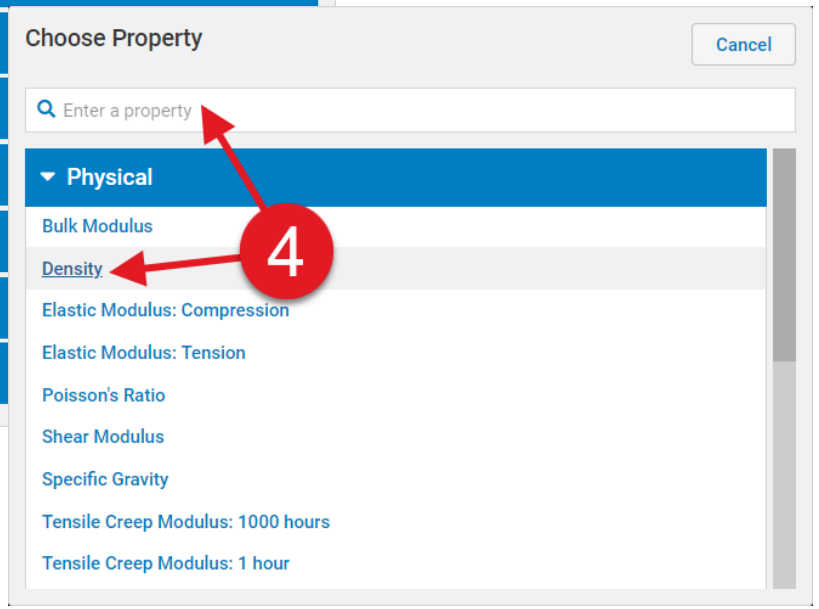


Creating a DataVis Project

1. From the DataVis homepage, select the option to compare properties
2. Choose a visualization (dot-plot or scatterplot)







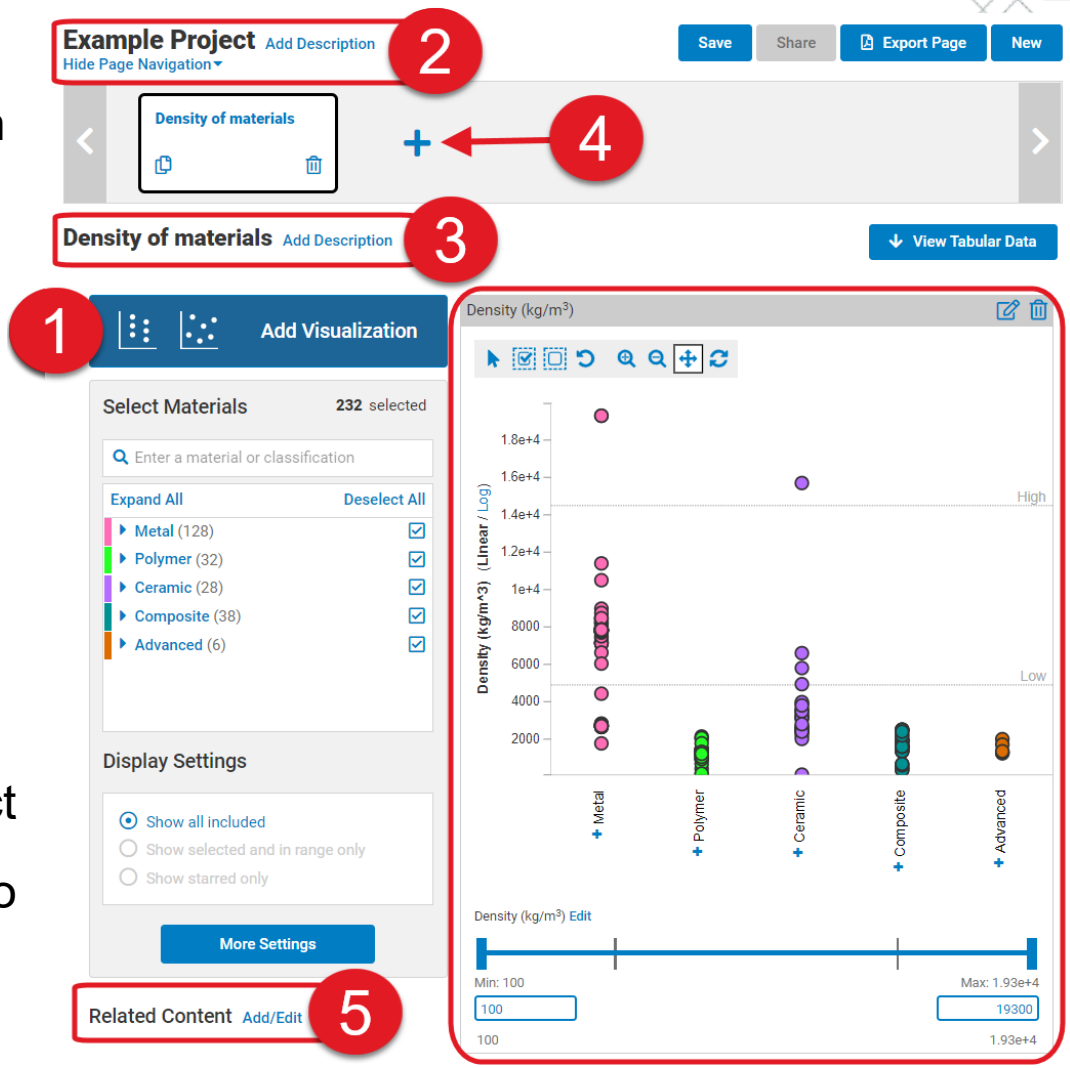
3. Choose a property (or properties)
4. Use the menu to select a property from a category or search for a property using the search box

Creating a DataVis Project

The density dot plot has now been added to your project.

From here, you have several options:

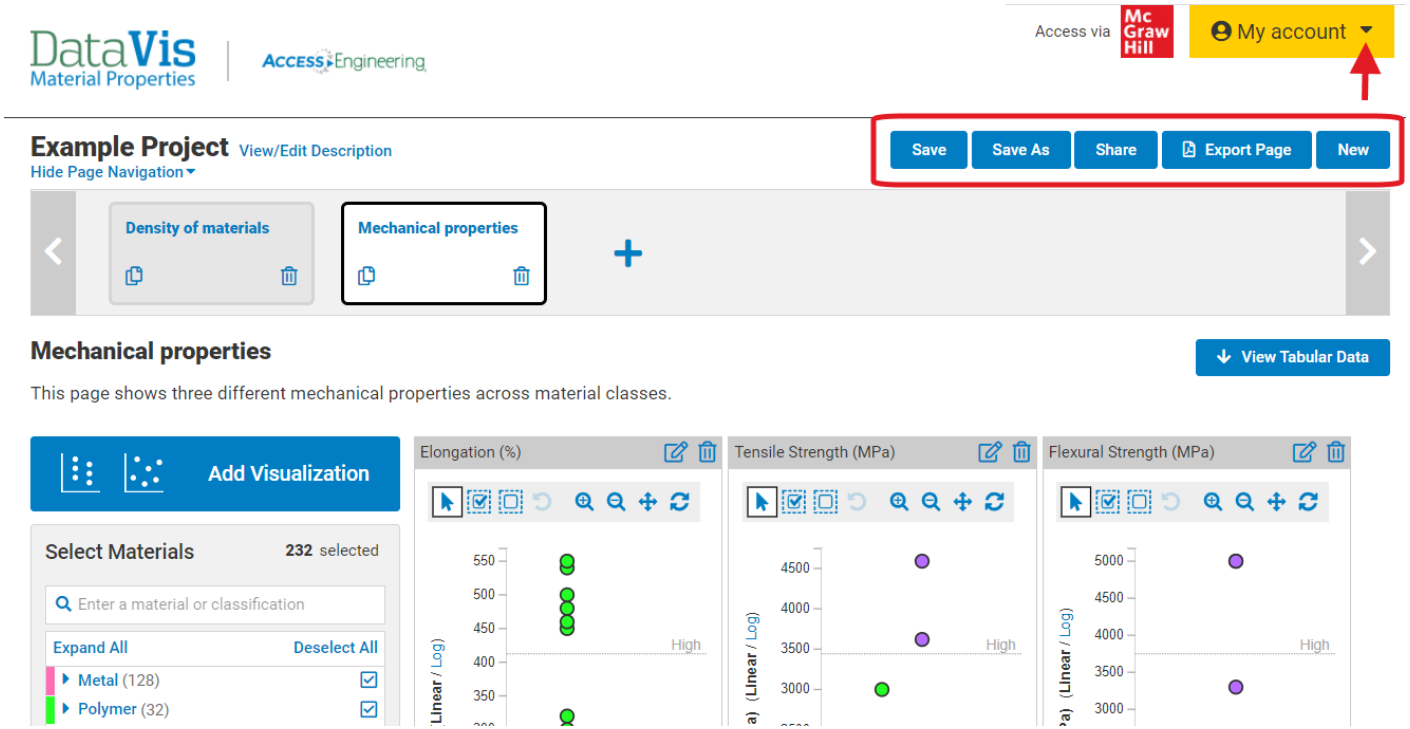
1. Add another visualization
2. Name your project and add a description
3. Name your page and add a page description
4. Add more pages to your project
5. Add links to related materials to create context or provide references



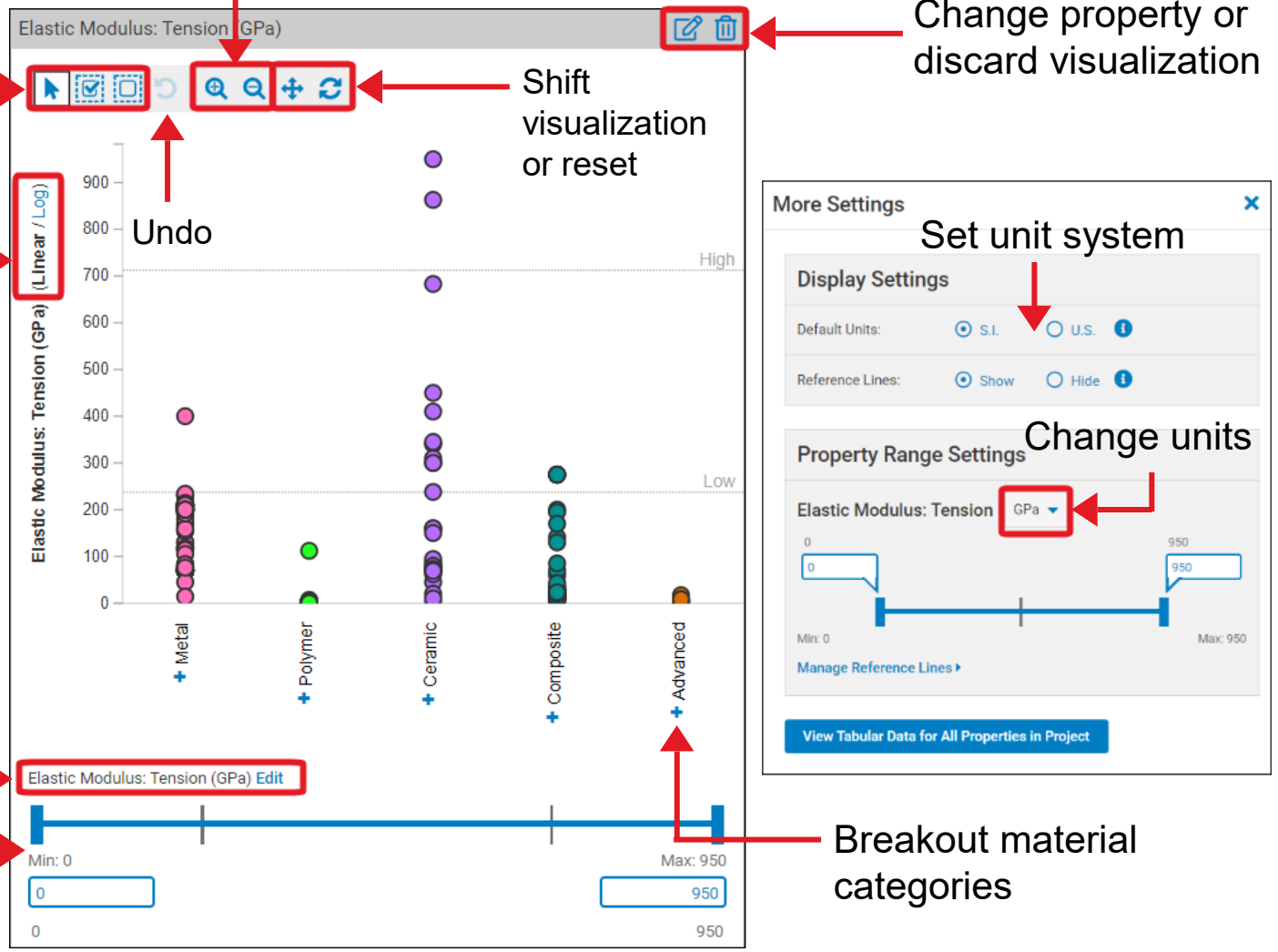
Creating a DataVis Project

Once you have finished editing your project, you can save it to your personal account, share it with others, or export pages as a PDF.

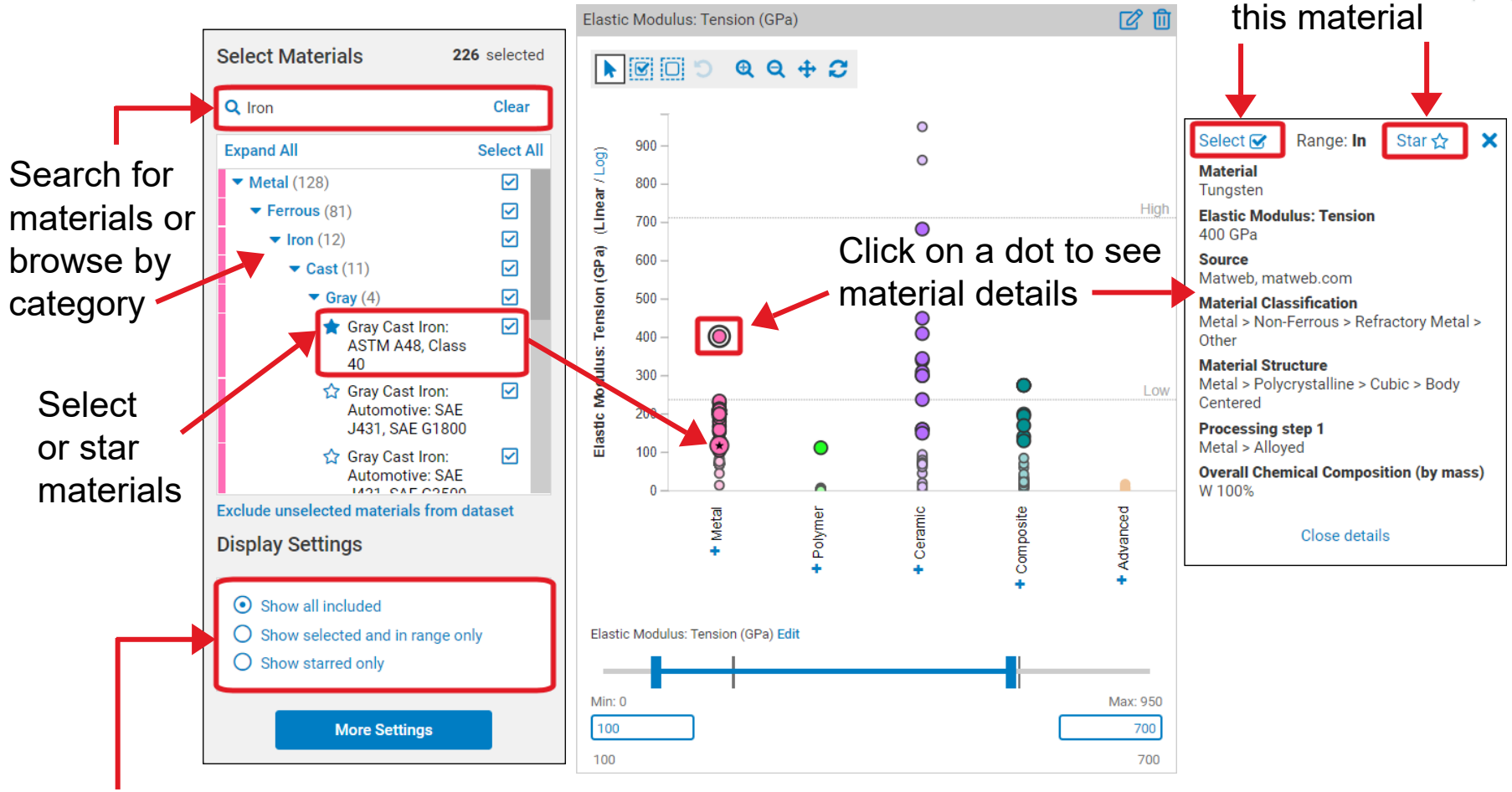
Use the dropdown menu under My Account to view all your saved DataVis projects.



Visualization Tools



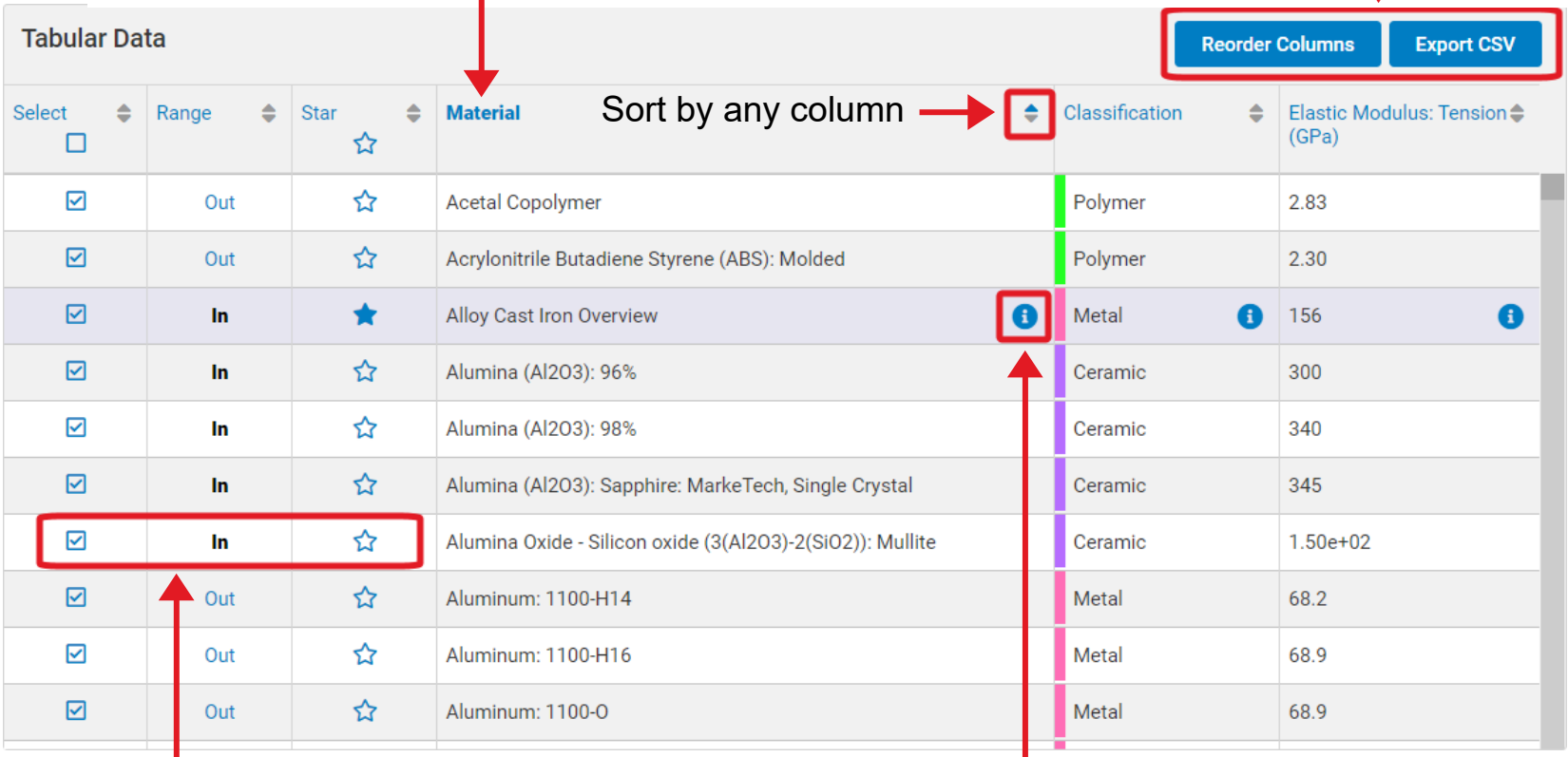
Visualization Tools



Tabular Data

See the full list of materials in a table below the visualizations

Reorder columns or export data as a CSV file



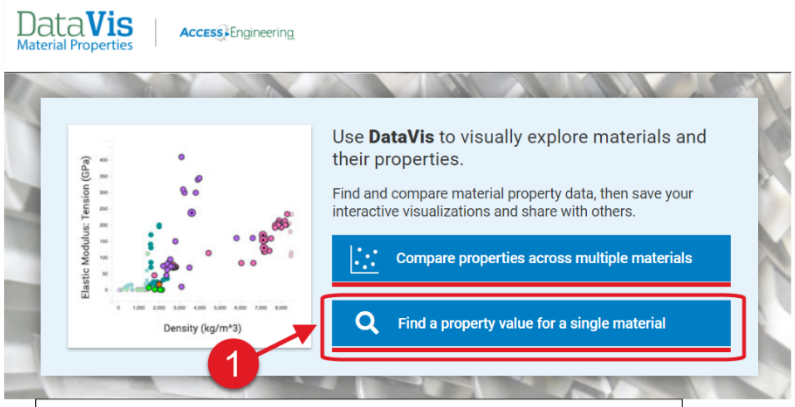
Select	Range	Star	Material	Classification	Elastic Modulus: Tension (GPa)
☑	Out	☆	Acetal Copolymer	Polymer	2.83
☑	Out	☆	Acrylonitrile Butadiene Styrene (ABS): Molded	Polymer	2.30
☑	In	★	Alloy Cast Iron Overview	Metal	156
☑	In	☆	Alumina (Al2O3): 96%	Ceramic	300
☑	In	☆	Alumina (Al2O3): 98%	Ceramic	340
☑	In	☆	Alumina (Al2O3): Sapphire: MarkeTech, Single Crystal	Ceramic	345
☑	In	☆	Alumina Oxide - Silicon oxide (3(Al2O3)-2(SiO2)): Mullite	Ceramic	1.50e+02
☑	Out	☆	Aluminum: 1100-H14	Metal	68.2
☑	Out	☆	Aluminum: 1100-H16	Metal	68.9
☑	Out	☆	Aluminum: 1100-O	Metal	68.9

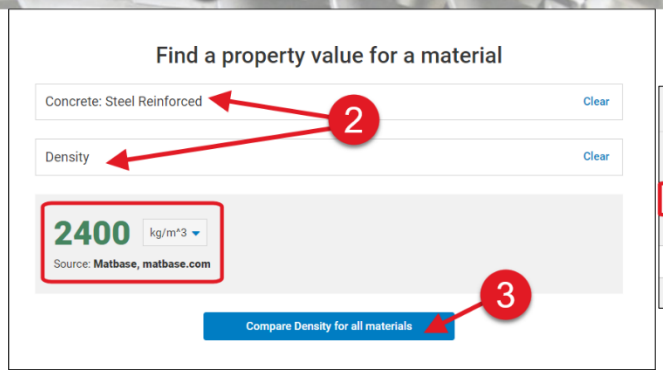
See if a material is in range and select, deselect, or star the material

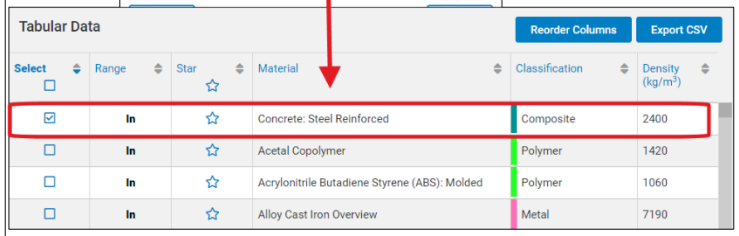
See more information on this material

Search for a Property Value

1. Select “Find a property value for a single material” from the DataVis homepage
2. Enter the material and property to see the value (change the units using the dropdown menu)







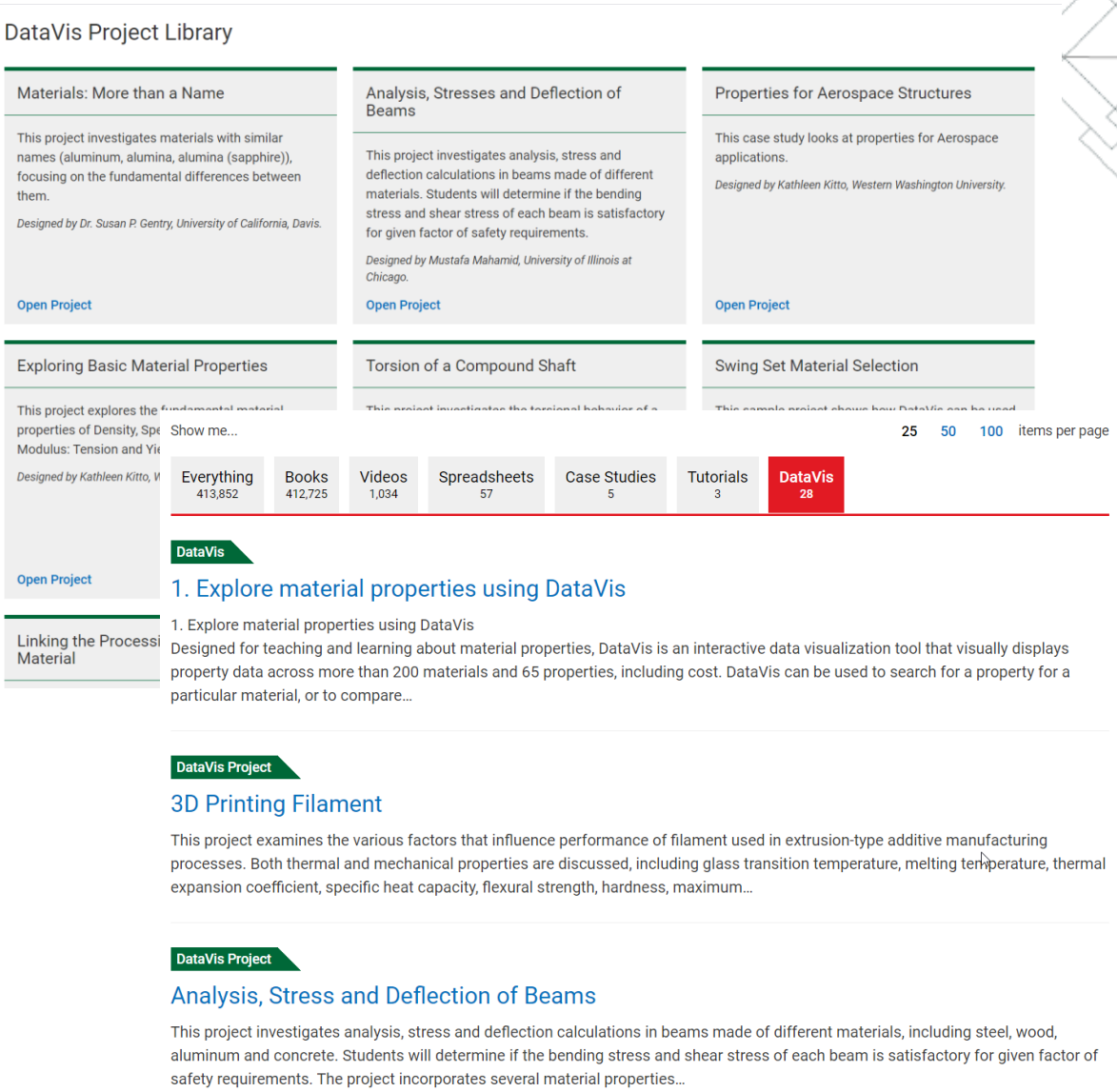
3. Use the “Compare” button to generate a new project
4. The result for the material searched is highlighted in the visualization and listed at the top of the tabular data.

Sample DataVis Projects

Pre-existing DataVis projects were created by faculty to demonstrate specific concepts.

Select from the library on the DataVis homepage or use the DataVis tab in search or browse results to view relevant projects.

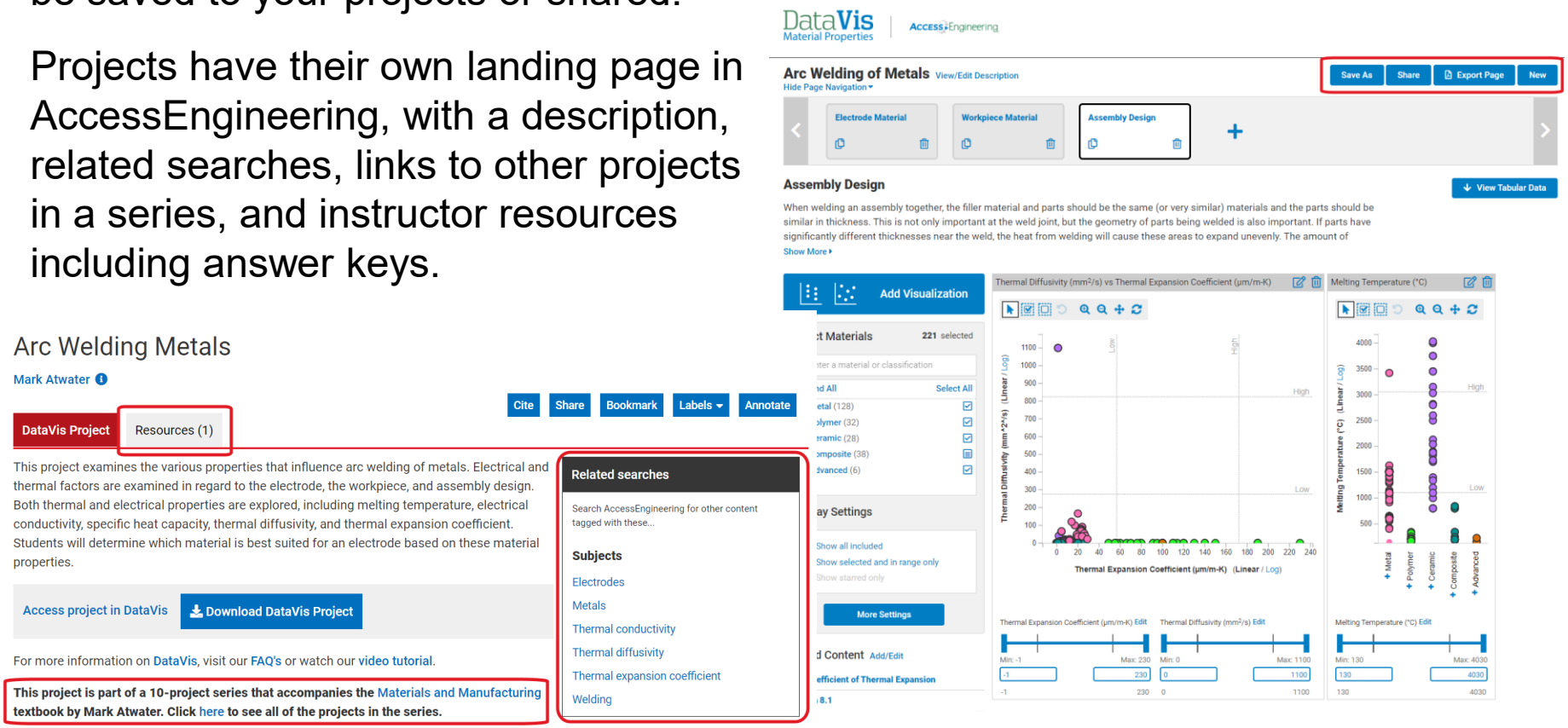
All content in the projects can be edited to create your own version, which can then be saved to your projects or shared.



Sample DataVis Projects

All content in the projects can be edited to create your own version, which can then be saved to your projects or shared.

Projects have their own landing page in AccessEngineering, with a description, related searches, links to other projects in a series, and instructor resources including answer keys.



Questions?

Contact McGraw Hill's Customer Success Team at

customersuccess@mheducation.com

for questions on using DataVis or

requests for additional training