

# Using Wikidata to Capture and Share Information about People in Paleontology

Introduction to efficient/bulk editing in wikidata  
30 March 2022

Erica Krimmel

# What to do with stuff like this...?

## BULLETIN OF THE SOUTHERN CALIFORNIA PALEONTOLOGICAL SOCIETY

### FOSSILS IN THE LIFE OF DINOSAUR GEORGE

By George Blasing, aka "Dinosaur George"

#### PEOPLE IN PALEONTOLOGY

The field of paleontology is a small one, but the number of people who are interested in some aspect of it is large. Who doesn't remember being excited by dinosaurs as a child or learning their names? In this, the third of a series of fascinating people who contribute to the field of paleontology in diverse ways, we spotlight a man whose second career came about because of a life-long love of dinosaurs, a love he passes on to thousands of school children in his role as "Dinosaur George."

-Karol McQueary

I was one of those kids who never grew out of my "dinosaur phase". As children we often show, and then lose, interest in numerous subjects. Dinosaurs are a particularly common interest for young people. For me, I never lost my interest.

As I grew up, I began to show more interest in how the dinosaurs may have behaved. This led me to spend thousands of hours studying the behavior of modern animals as a way to understand how prehistoric creatures may have behaved.

1980 - My senior year in high school found me dreaming of becoming a paleontologist. One of my teachers, whom I respected deeply, told me that I should focus on a "real" job. I was devastated. I began to wonder if paleontology was a real job. Perhaps the people I read about were just doing this as a hobby? Young and impressionable I decided to change my career path. I started a career in retail and quickly advanced into upper level management positions. I became a director in a major retail chain and oversaw the operations of 18 stores with nearly 200 million dollars in annual sales. But through it all, my love of paleontology continued. I spent my summer vacations traveling throughout the United States, excavating fossils and expanding an extensive collection of fossils and replicas.

Fast forward to 1997. A knock on my front door would change every aspect of my life. I was working in my office when I heard a knock on my door. A young couple was having car trouble and asked me to give them a jump start. The female happened to

be a science teacher in an inner city elementary school. She looked in my house and was amazed at my collection. She told me that it was very hard to find people who would come in and speak to her students. She asked me if I could gather some items and come to her school to speak about what I did. It sounded like fun, so I agreed.



I had such a great time speaking to the students. Many of them had never seen a real fossil in their lives. They were mesmerized by the various bones I brought. I could see that these kids had a new world opened to them. For many inner city and economically challenged children, they believe that the world is only as big as what they see out of their own front doors. Learning about prehistoric life was something new for them.

## Agent Summary for Joseph Grinnell (person)

### Name Variations for Joseph Grinnell

- Joseph (first name) [\[ search \]](#)
- Grinnell (last name) [\[ search \]](#)
- Grinnell J. (aka) [\[ search \]](#)
- Grinnell, Joseph (aka) [\[ search \]](#)
- J. Grinnell (aka) [\[ search \]](#)

### Remarks about Joseph Grinnell

Museum of Vertebrate Zoology's founding director in 1908.

### Relationships From Joseph Grinnell

Relationship	To	Begin	End
spouse of	<a href="#">Hilda W. Grinnell</a>		
employee of	<a href="#">Museum of Vertebrate Zoology, University of California, Berkeley</a>	1908	
grandparent of	<a href="#">June R. Grinnell</a>		

### Relationships To Joseph Grinnell

From	Relationship	Begin	End
<a href="#">Willard F. Grinnell</a>	child of		
<a href="#">Hilda W. Grinnell</a>	spouse of		

Media showing this Agent.

Showing results 1 - 10 of 24  
[Next >>](#)

[Media Gallery](#)



image (image/jpeg)  
[Media Details](#)  
[CC BY](#)

Museum staff: Joseph Grinnell



image (image/jpeg)  
[Media Details](#)  
[CC BY](#)

Museum staff: Joseph Grinnell



image (image/jpeg)  
[Media Details](#)  
[CC BY](#)

Stephens, Jones, Dixon an...



image (image/jpeg)  
[Media Details](#)  
[CC BY](#)

Aplodontia meadow, Dr. Gri...



### ARCHIVES – FINDING AID

**Collection Title:** Komarek Family Papers

**Creator:** Komarek, Betty (1/29/1914-4/16/2002)  
Komarek, Edwin V., Sr. (6/4/1909-5/6/1995)  
Komarek, Roy V. (9/24/1911-12/18/1989)

**Dates:** 1914-1989, bulk 1932-1946, 1963-1989

**Extent:** 1.5 Linear Feet (4 manuscript boxes)

**Level of Description:** Folder Level

**Repository:** Natural History Collections and Archives, Chicago Academy of Sciences /Peggy Notebaert Nature Museum, Chicago, Illinois.

**Access Conditions:** Open for research.

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Media showing this Agent.  
Showing results 1 - 10 of 24 [Media Gallery](#)  
[Next >>](#)



image (image/jpeg)



image (image/jpeg)



image (image/jpeg)



image (image/jpeg)

**Joseph Grinnell** (Q927582)

American zoologist (1877-1939)

Grinnell | J. Grinnell

### Relationships To Joseph Grinnell

From	Relationship	Begin	End
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Komarek, Edwin V., Sr. (6/4/1909-5/6/1995)  
Komarek, Roy V. (9/24/1911-12/18/1989)

**Tall Timbers Research Station and  
Land Conservancy** (Q7679989)

No description defined



Access Conditions: Open for research.

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I had such a great time speaking to the students.

**Jurassic Fight Club** (Q2539491)

television series

# Options for getting data into wikidata

## Edit directly in the wikidata user interface

<https://www.wikidata.org>

Get a sense for how wikidata organizes information

Easy access to full search results

Low learning curve

## Use QuickStatements

<https://www.wikidata.org/wiki/Help:QuickStatements>

Upload a spreadsheet

QS will check your edits for duplicate statements

Audit tracking for every edit action

## Use wikidata plugin with OpenRefine

<https://www.wikidata.org/wiki/Wikidata:Tools/OpenRefine>

Plugin comes with OpenRefine by default in version 3.0 or later

One visual interface for editing and pushing changes

## Directly via bots scripted in Python, e.g.:

PyWikiBot  
<https://pypi.org/project/pywikibot/>

Wikidataintegrator  
<https://github.com/SuLab/WikidataIntegrator>

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# Get started with bulk edits in



You will need...

1. An [autoconfirmed wikidata user account](#).
  - a. This status will automatically be applied when your account is > 4 days old and has >50 edits
2. Familiarity with the kind of editing you want to do.
  - a. What wikidata entities (e.g. institutions) have relationships with the entities (e.g. persons) in your data?
  - b. What wikidata properties are relevant to your data (e.g. employer - P108)?

# Get started with



# OpenRefine

You can...

1. Download OpenRefine here at <https://openrefine.org/download.html> and install locally.
2. Learn more about OpenRefine via the user manual at <https://docs.openrefine.org/manual>.
3. See several OpenRefine demos in our [January 2021 Happy Hour](#).
4. Connect your wikidata account to your OpenRefine instance.

The screenshot shows the OpenRefine interface with a Wikidata account login dialog box. The dialog box has a Wikidata logo on the left and a login form on the right. The login form includes fields for Username (ekrimmel) and Password (masked with dots). There is a 'Remember me' checkbox and a 'Log in' button. Below the login form, there is a link to 'owner-only consumer' login.

OpenRefine test wikidata Permalink

Open... Export Help

Facet / Filter Undo / Redo 0 / 0 897 rows Extensions: Wikidata

Show as: rows records Show: 5 10 25 50 100 500 1000 rows  
« first < previous 1 of 90 pages next > last »

Using facets and filters

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started? Watch these screencasts

	family	given	wikidata	ORCID
1.	Abbott	Charles Conrad	Q591957	
2.	Abel	Othenio	Q78571	
3.	Absolon	Karel	Q1063371	
4.	Ackeren Dieterle	Jennie	Q21394470	
5.	Acorn	John		0000-0001-6570-1949
6.	Adams	Joseph Edison	Q10308585	

Wikidata account

Logging in to Wikidata lets you to upload edits directly from OpenRefine.

You are encouraged to login with bot passwords, see this wiki page to learn how to get one.

Username: ekrimmel

Password: .....

Remember me

Close Log in

You can also login with your owner-only consumer.

# Visualize how the data are structured

entity

Charles Schuchert

Q2623977

property

occupation (P106)

occupation of a person; see also "field of work"  
(Property:P101), "position held" (Property:P39)  
profession | job | work | career | employment | craft | employ

entity

paleontologist

Q1662561

The screenshot shows a spreadsheet with the following data:

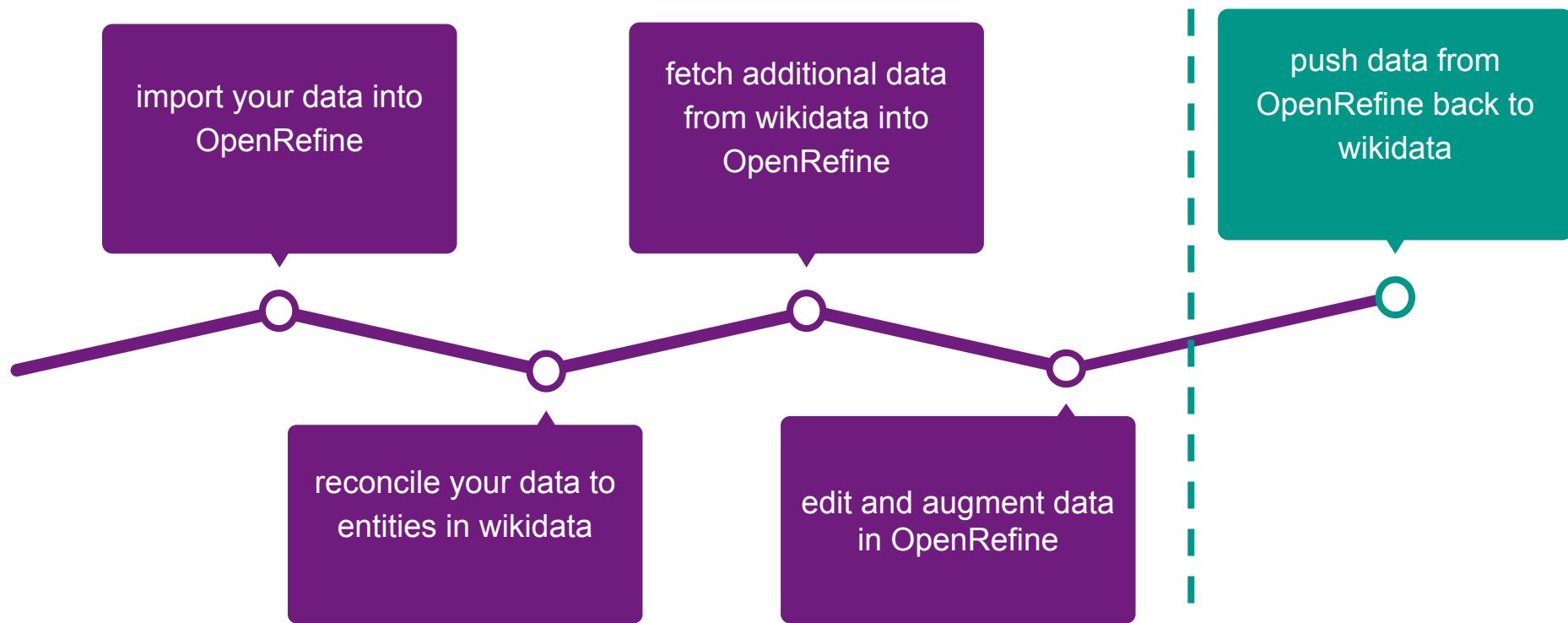
	A	B	C	D
1		<b>profession</b>	<b>educated at</b>	
2	Charles Schuchert	paleontologist	Yale University	
3	Mira Bland	teacher	University of Miami	
4	Joyce Kelly	deep sea diver	Yale University	
5	Sam Jamison	banker	American River College	
6				

Arrows from the diagram point to the following cells in the spreadsheet:

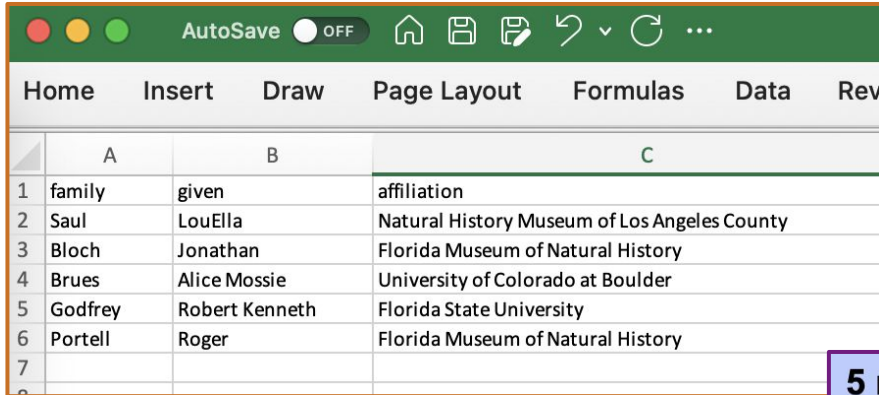
- Entity 'Charles Schuchert' (Q2623977) points to cell A2.
- Property 'occupation' (P106) points to cell B2.
- Entity 'paleontologist' (Q1662561) points to cell C2.



# Understand the process between wikidata and OpenRefine



# Import your data into OpenRefine



An Excel spreadsheet window with a green title bar containing 'AutoSave OFF' and standard window controls. The menu bar includes 'Home', 'Insert', 'Draw', 'Page Layout', 'Formulas', 'Data', and 'Rev'. The spreadsheet has three columns labeled A, B, and C. The data is as follows:

	A	B	C
1	family	given	affiliation
2	Saul	LouElla	Natural History Museum of Los Angeles County
3	Bloch	Jonathan	Florida Museum of Natural History
4	Brues	Alice Mossie	University of Colorado at Boulder
5	Godfrey	Robert Kenneth	Florida State University
6	Portell	Roger	Florida Museum of Natural History
7			
8			

Tabular data, e.g. a CSV file or Excel spreadsheet

Imported into OpenRefine



The OpenRefine interface shows the imported data. At the top, it says '5 rows'. Below that, there are options to 'Show as: rows records' and 'Show: 5 10 25 50 100 500 1000 rows'. The data is displayed in a table with columns for 'All', 'family', 'given', and 'affiliation'. Each row has a star icon and a speech bubble icon to its left.

	All	family	given	affiliation	
★	🗨	1.	Saul	LouElla	Natural History Museum of Los Angeles County
★	🗨	2.	Bloch	Jonathan	Florida Museum of Natural History
★	🗨	3.	Brues	Alice Mossie	University of Colorado at Boulder
★	🗨	4.	Godfrey	Robert Kenneth	Florida State University
★	🗨	5.	Portell	Roger	Florida Museum of Natural History

# Reconcile your data to entities in wikidata

[column name] → Reconcile → Start reconciling

You may want to...

- ★ restrict the reconciliation to a wikidata class
- ★ use additional column(s) in your dataset to refine the reconciliation by acting as a tiebreaker
- ★ use external identifiers

The screenshot shows the 'Reconcile column "family"' dialog box. At the top, a purple banner contains the text '[column name] → Reconcile → Start reconciling'. The dialog has a header bar with 'Show as: rows records', 'Show: 5 10 25 50 100 500 1000 rows', and navigation buttons. The main content is divided into two sections. The left section, titled 'Reconcile each cell to an entity of one of these types:', contains a list of Wikidata classes with radio buttons. The 'human' class (Q5) is selected and highlighted with an orange box. An orange arrow points from the first list item in the text on the left to this box. The right section, titled 'Also use relevant details from other columns:', contains a 'Column Include? As Property' table. The 'given' property is checked and has 'given name' entered in the adjacent text box. This table is also highlighted with an orange box, and an orange arrow points from the second list item in the text on the left to it. Below these sections are options for 'Reconcile against type:', 'Reconcile against no particular type', and 'Auto-match candidates with high confidence' (checked). At the bottom, there is a 'Maximum number of candidates to return' dropdown and 'Start Reconciling...' and 'Cancel' buttons.

# Reconcile your data to entities in wikidata

You may want to...

- ★ Hover over reconciliation options to see more details
- ★ Do your own search in wikidata
- ★ Follow leads to confirm the identity of an entity

5 rows			
Show as: rows records Show: 5 10 25 50 100 500 1000 rows			
All	family	given	affiliation
	<input checked="" type="checkbox"/> Saul Alinsky (110) <input checked="" type="checkbox"/> Saul A. Teukolsky (48) <input checked="" type="checkbox"/> Saul Rubinek (48) <input checked="" type="checkbox"/> Saul Alvarez (48) <input checked="" type="checkbox"/> Ojibwe (48) <input checked="" type="checkbox"/> Saúl Martínez (46) <input checked="" type="checkbox"/> Create new item		
2.	<input checked="" type="checkbox"/> Konrad Emil Bloch (87) <input checked="" type="checkbox"/> Martin Bloch (87) <input checked="" type="checkbox"/> Ernst Bloch (84) <input checked="" type="checkbox"/> Robert Bloch (84) <input checked="" type="checkbox"/> Ernest Bloch (82) <input checked="" type="checkbox"/> Marc Bloch (82) <input checked="" type="checkbox"/> Felix Bloch (82) <input checked="" type="checkbox"/> Bruno Bloch (82) <input checked="" type="checkbox"/> Marcus Elieser Bloch (81) <input checked="" type="checkbox"/> Andreas Bloch (81) <input checked="" type="checkbox"/> Friedrich Blochman (81) <input checked="" type="checkbox"/> Bloch (71) <input checked="" type="checkbox"/> Jacqueline Bloch (71) <input checked="" type="checkbox"/> Joseph Samuel Bloch (64) <input checked="" type="checkbox"/> Jan Gotlib Bloch (64) <input checked="" type="checkbox"/> David B. Bloch (64) <input checked="" type="checkbox"/> Iwan Bloch (61) <input checked="" type="checkbox"/> B Nicolas Bloch (60) <input checked="" type="checkbox"/> Carl Bloch (59) <input checked="" type="checkbox"/> Alfred Bloch (59) <input checked="" type="checkbox"/> Evan M Bloch (59) <input checked="" type="checkbox"/> André Bloch (57) <input checked="" type="checkbox"/> Daniel Bloch (57) <input checked="" type="checkbox"/> Julius T. Bloch (54) <input checked="" type="checkbox"/> Albert Bloch (54) <input checked="" type="checkbox"/> Create new item	Jonathan	Florida Museum of Natural History
3.	Alice Mossie Brues	Alice Mossie	University of Colorado at Boulder
4.	Robert Kenneth Godfrey	Robert Kenneth	Florida State University
5.	Roger W. Portell	Roger	Florida Museum of Natural History

unreconciled rows

reconciled rows

# Fetch additional data from wikidata into OpenRefine

Add columns in OpenRefine based on what else wikidata knows about your entities.

**Add columns from reconciled column family**

Add Property

Preview Reset

Suggested Properties

- child
- country of citizenship
- employer
- ethnic group
- father
- field of work
- image

family	employer
Alice Mossie Brues	<a href="#">remove</a> <a href="#">configure</a>
	Harvard University
	University of Colorado Boulder
	University of Oklahoma
Robert Kenneth Godfrey	
Roger W. Portell	

Multiple statements for a given property will be grouped as records in OpenRefine

[column name] → Edit column → Add columns from reconciled values

# Edit and augment data in OpenRefine

Wrangle data from your own sources into the columns that you want to send to wikidata.

[column name] → Edit column → Add column based on this column

3 matching records (5 total) Schema \* Issues 1 Preview

Show as: rows records Show: 5 10 25 50 100 500 1000 records

All	family	employer	given	affiliation	P108
3. <a href="#">Alice Mossie Brues</a> <a href="#">edit</a>		Harvard University <a href="#">Choose new match</a>	Alice Mossie	University of Colorado at Boulder	
		University of Colorado Boulder <a href="#">Choose new match</a>			
		University of Oklahoma <a href="#">Choose new match</a>			
4. Robert Kenneth Godfrey <a href="#">Choose new match</a>			Robert Kenneth	Florida State University	Q861548
5. Roger W. Portell <a href="#">Choose new match</a>			Roger	Florida Museum of Natural History	Q3074272

Your original data

Your data connected to a wikidata entity by assigning the appropriate Q number

# Edit and augment data in OpenRefine

Reconcile the values in your data to entities in wikidata.

[column name] → Reconcile → Use values as identifiers

3 matching records (5 total) Schema * Issues 1 Preview					
Show as: rows records Show: 5 10 25 50 100 500 1000 records					
All	family	employer	given	affiliation	P108
☆	3. <a href="#">Alice Mossie Brues</a> <a href="#">edit</a>	<a href="#">Harvard University</a> Choose new match	Alice Mossie	<a href="#">University of Colorado at Boulder</a>	
☆		<a href="#">University of Colorado Boulder</a> Choose new match			
☆		<a href="#">University of Oklahoma</a> Choose new match			
☆	4. <a href="#">Robert Kenneth Godfrey</a>		Robert Kenneth	<a href="#">Florida State University</a>	Q861548
☆	5. <a href="#">Roger W. Portell</a>		Roger	<a href="#">Florida Museum of Natural History</a>	Q3074272

P108
<a href="#">Q861548</a> Choose new match
<a href="#">Q3074272</a> Choose new match





# Edit and augment data in OpenRefine

Translate your tabular data (i.e., columns & rows) into a wikidata “schema.”

5 records Schema \* Issues 2 Preview Extensions: Wikidata ▾




You are currently working against [Wikidata](#). You should have your data reconciled to reconciliation services linked to Wikidata (such as <https://wikidata.reconci.link/en/api>) first. The schema below specifies how your tabular data will be transformed into Wikidata edits. You can drag and drop the column names below in most input boxes: for each row, edits will be generated with the values in these columns.

family employer given affiliation P108

family   remove

**Terms**  
no labels, descriptions or aliases added + add term

**Statements**

employer  P108   remove

▼ 0 references

+ add qualifier

+ add reference

+ add value

+ add statement

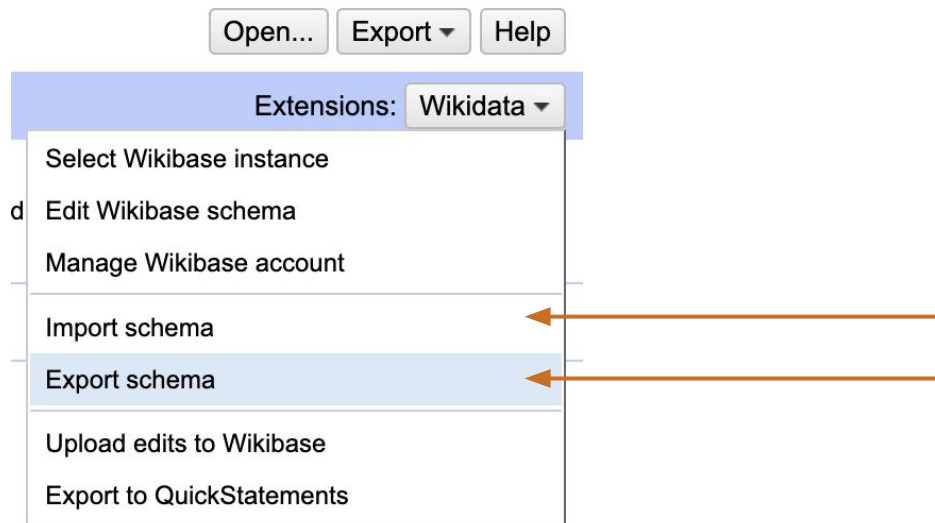
+ add item

Save schema Discard changes



# Edit and augment data in OpenRefine

You can export any schema you create, and import an existing schema for use with a new dataset.




# Push data from OpenRefine back to wikidata

Address errors flagged by OpenRefine.

Permalink

Open... Export ▾ Help


5 records Schema \* Issues 2 Preview Extensions: Wikidata ▾

 **Statements without references.** Most statements should have references. You can add them easily in the schema. 2

5 records Schema \* Issues 2 Preview Extensions: Wikidata ▾



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family employer given affiliation P108

family  remove

Terms  
no labels, descriptions or aliases added + add term

Statements

employer  P108  remove + add qualifier

▼ 0 references + add reference + add value

+ add statement + add item

# Push data from OpenRefine back to wikidata

Use the preview window to check that your edits appear as you expect them to. Adjust your schema as necessary.

Permalink Open... Export ▾ Help

5 records Schema \* Issues 2 Preview Extensions: Wikidata ▾

This tab shows the first edits (out of 2) that will be made once you upload the changes to [Wikidata](#). You can use facets to inspect the edits on particular items.

Robert Kenneth Godfrey (Q6109485)

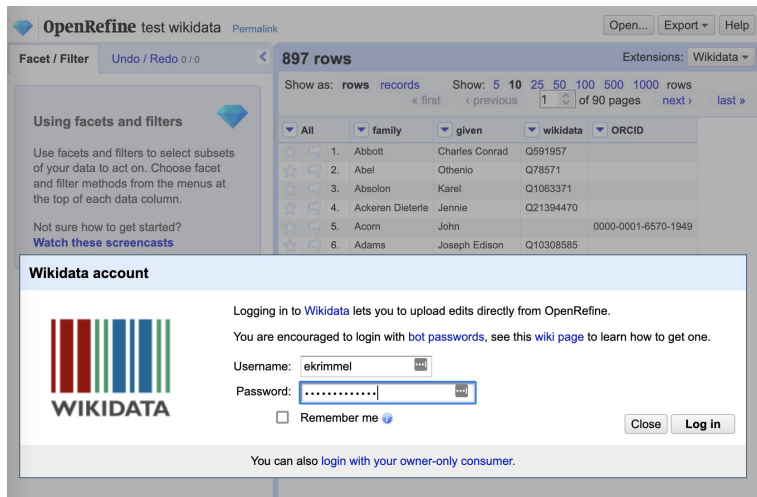
employer (P108)	Q861548 (Q861548) ▶ 0 references
-----------------	-------------------------------------

Roger W. Portell (Q21388033)

employer (P108)	Q3074272 (Q3074272) ▶ 0 references
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# Push data from OpenRefine back to wikidata

Wikidata → Upload edits to Wikibase



The screenshot shows the OpenRefine interface with a Wikidata account login dialog box open. The dialog box contains the Wikidata logo, a message about logging in to upload edits, and a login form with fields for Username (ekrimmel) and Password (masked with dots). There is a "Remember me" checkbox and "Close" and "Log in" buttons.

OpenRefine test wikidata Permalink Open... Export Help

Facet / Filter Undo / Redo 0 / 0 897 rows Extensions: Wikidata

Using facets and filters

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started? Watch these screencasts

Logging in to Wikidata lets you to upload edits directly from OpenRefine. You are encouraged to login with bot passwords, see this wiki page to learn how to get one.

Username: ekrimmel

Password: .....

Remember me

Close Log in

You can also login with your owner-only consumer.

All	family	given	wikidata	ORCID
1.	Abbott	Charles Conrad	Q591957	
2.	Abel	Othenio	Q78571	
3.	Absolon	Karel	Q1063371	
4.	Ackeren Dieterle	Jennie	Q21394470	
5.	Acorn	John		0000-0001-6570-1949
6.	Adams	Joseph Edison	Q10308585	

# Push data from OpenRefine back to wikidata

What happens when my data overlaps with what is already in wikidata?

- ★ If you push a **redundant statement**, i.e. the statement you are trying to make has already been made, nothing will happen in wikidata.
- ★ If you push a **conflicting statement**, i.e. the statement you are trying to make is different than an existing statement for the same property, yours will be added as a second statement.
- ★ If you include a **new reference** for a statement that already exists, it will be added to the existing statement.

# Push data from OpenRefine back to wikidata

What about creating new items in wikidata?

- ★ OpenRefine can easily push data to wikidata that creates new items.
- ★ Best practice is to treat edits to existing items separately from the creation of new items.
  - As always in OpenRefine, only the rows covered by your facets will be considered when uploading the edits to Wikidata. I.e., if a cell is reconciled to a new item but is excluded by the facet, no new item will be created for it when you push data.



**OpenRefine**

Live demo

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# Additional resources

1. OpenRefine Manual: <https://docs.openrefine.org/manual/wikibase/overview>
2. Wikidata instructions for OpenRefine:  
<https://www.wikidata.org/wiki/Wikidata:Tools/OpenRefine/Editing>
3. Steve Baskauf's blog series from March 2021:  
<http://baskauf.blogspot.com/2019/05/getting-data-out-of-wikidata-using.html>
4. Cradle, an additional data entry tool designed to streamline editing for certain types of records, e.g. scientific collector:  
[https://cradle.toolforge.org/#/subject/scientific\\_collector](https://cradle.toolforge.org/#/subject/scientific_collector)