

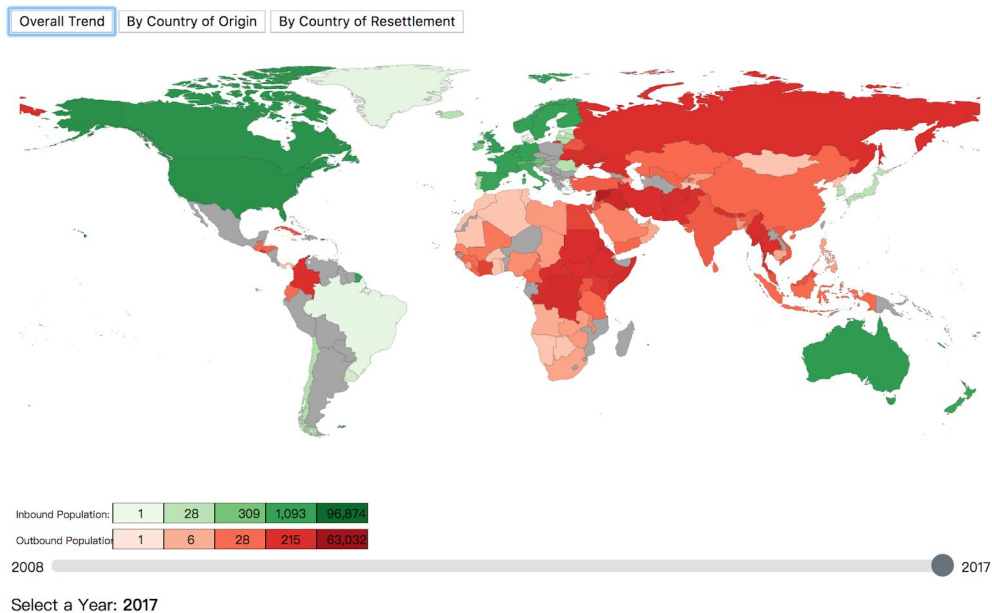
Final Project Description  
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This visualization is designed to show movement and trend of refugee resettlement between countries of origin and countries of resettlement during the past decade. The dataset we chose to use is the Resettlement Population Statistics from UNHCR (<http://popstats.unhcr.org/en/resettlement>). We pulled data on the countries of asylum and countries of origin from 2008-2017. We used these variables to make a multidimensional and interactive visualization for our audience to explore the trend of refugee resettlement. It is designed to answer the following questions: How have refugee resettlement patterns changed over time? Where do refugees from certain areas go, and how has this changed over time? Where do certain countries most commonly accept refugees from? What are the connections between world regions that we can see from refugee movement?

We chose to use a world map to present the geographic information of countries as our positional encoding since people are mostly familiar with this world map. We colored the resettlement countries in green, as green is often associated with humanitarian aid, and the origin countries in red, as red is often linked to conflict zones. We chose to use a gradations in color to represent the population numbers where lighter red/green means lower population and darker red/green represents higher population.

Overall Trend map:

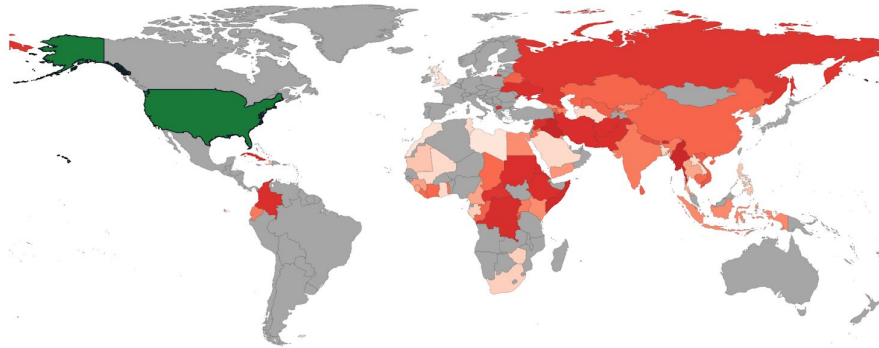
Refugee Resettlement: A Geographic Time Series from 2008 – 2017



Country highlighted in “By Country of Origin” view:

#### Refugee Resettlement: A Geographic Time Series from 2008 – 2017

Overall Trend By Country of Origin **By Country of Resettlement**



Country: **United States of America** Inbound Refugees: 73011 Outbound Refugees: 0

Inbound Population:	1	28	309	1,093	96,874
Outbound Population:	1	6	28	215	63,032

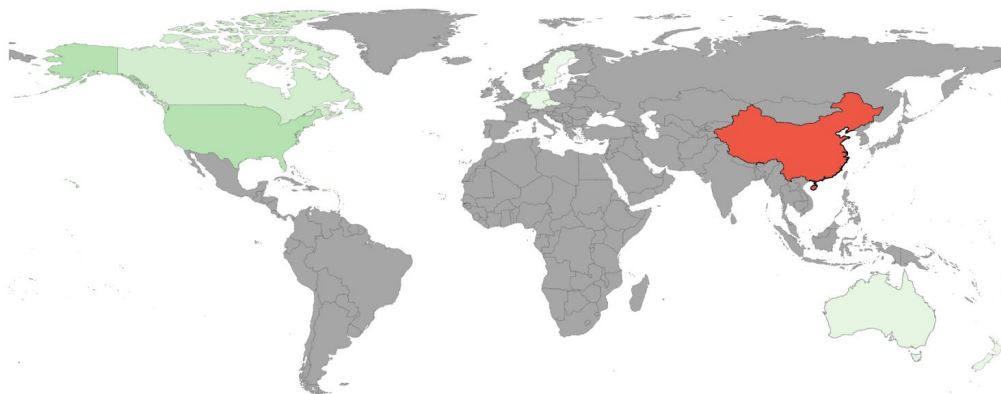
2008 2017

Select a Year: 2014

Highlighted Country in “By Country of Resettlement” View:

#### Refugee Resettlement: A Geographic Time Series from 2008 – 2017

Overall Trend By Country of Origin **By Country of Resettlement**



Country: **China** Inbound Refugees: 0 Outbound Refugees: 98

Inbound Population:	1	28	309	1,093	96,874
Outbound Population:	1	6	28	215	63,032

2008 2017

Select a Year: 2014

In the default map view, "Overall Trend", all countries that have refugee data in the UNCHR dataset are highlighted. Countries with more refugees outbound than inbound are highlighted in a

shade of red, and those that resettled more are shaded green. Hovering over a colored country will display the specific numbers associated with that country for the year chosen as a tooltip and at the bottom of the screen as an info box. The year can be adjusted using the sliding scale at the bottom of the screen.

In the other two map views, "By Country of Origin" and "By Country of Resettlement", only the origin or resettlement data is initially shown for each country that has data in that category. Hovering over a country that was the origin of refugees in that particular year will display all of the countries that refugees from that country resettled in. The darkness of the colors of these highlighted countries represents the number of refugees that came from the origin country who resettled in the destination country. The inverse is true for the "By Country of Resettlement" map. The year can also be changed on these views, and the data will be updated.

A legend showing the two color scales used in the visualization is shown at the bottom of the screen. Hovering over a color will display the value category it represents as a tooltip. The color scale is based on the minimum, maximum, 25th, 50th, and 75th percentiles of the total refugee data in each category.

In our critiques we were highly encouraged to include the year sliding scale in order to add the dimension to the data and be able to answer questions about how refugee movement has changed over time. It was also suggested that we make it clear when countries are both sources and destinations for refugees, which is actually the case for many countries. We tried to incorporate this by including all countries with relevant data in both the Resettlement and Origin maps and by displaying the country information as an info box, containing the total inbound and outbound numbers. This was also another piece of feedback we received, to make sure that the specific total numbers were available. We tried to accommodate this with the infobox and tooltips.

We were able to use our visualization to answer the questions about refugee trends in time and geography. Specifically, from the angle of origins, how have the number of refugees increased or decreased from a certain country, where are the destinations of these refugees, and how have the destinations changed over time? From the angle of resettlement, how has the number of refugees accepted by a certain country changed over time, what are the countries that these refugees originate from, and how have these changed? To better answer these questions in the future, we would have liked to implement an easier way to see the specific number of refugees a country accepted from another country rather than relying on the color encoding. We would also have liked to implement the option to toggle a country on and move the sliding scale to see the changes in specific movement from that country for Origin and Resettlement views. Currently, the user must re-hover over the country every time they use the sliding scale, which can make it harder to compare year-by-year.