Project Tycho

Viruses Gone Wild

YEAR	DATE	MONTH	QUARTER	SEASON	WEEK	ALABAMA	ALASKA	ARIZONA	ARKANSA	CALIFORN	COLORAD	CONNECT	DELAWAR	DISTRICT (	FLORIDA	GEORGIA	HAWAII	IDAHO	ILLINOIS	I
1928	1/1/1928	January	Q1	Winter	1	97	0	8	76	74	85	71	20	0	3	34	0	0	38	
1928	1/8/1928	January	Q1	Winter	2	165	0	27	183	96	61	142	17	0	7	173	0	2	58	
1928	1/15/1928	January	Q1	Winter	3	210	0	19	206	70	29	139	37	0	6	0	0	2	46	
1928	1/22/1928	January	Q1	Winter	4	332	0	8	254	100	139	164	10	20	13	251	0	0	61	
1928	1/29/1928	January	Q1	Winter	5	212	0	2	384	127	52	265	13	22	7	314	0	1	84	
1928	2/5/1928	February	Q1	Spring	6	192	0	27	491	149	82	280	8	36	24	196	0	0	101	
1928	2/12/1928	February	Q1	Spring	7	264	0	4	605	146	40	318	10	61	19	214	0	0	103	
1928	2/19/1928	February	Q1	Spring	8	365	0	7	673	151	44	358	4	0	16	325	0	0	156	
1928	2/26/1928	February	Q1	Spring	9	292	0	4	626	205	30	358	8	113	11	321	0	0	151	
1928	3/4/1928	March	Q1	Spring	10	369	0	17	539	284	41	377	10	0	32	236	0	0	149	
1928	3/11/1928	March	Q1	Spring	11	496	0	31	385	187	34	398	15	0	48	187	0	0	260	
1928	3/18/1928	March	Q1	Spring	12	586	0	27	506	234	25	301	21	182	70	105	0	0	232	
1928	3/25/1928	March	Q1	Spring	13	580	0	33	556	184	44	317	19	0	66	259	0	0	180	
1928	4/1/1928	April	Q2	Spring	14	443	0	33	244	125	183	371	14	234	42	143	0	0	226	
1928	4/8/1928	April	Q2	Spring	15	408	0	34	426	118	86	369	27	0	81	134	0	9	164	
1928	4/15/1928	April	Q2	Spring	16	393	0	56	247	159	102	363	14	190	92	114	0	0	234	
1928	4/22/1928	April	Q2	Spring	17	426	0	8	393	111	96	354	35	168	94	150	0	0	173	
1928	4/29/1928	April	Q2	Spring	18	251	0	9	449	120	184	379	30	0	142	367	0	0	244	
1928	5/6/1928	May	Q2	Summer	19	366	0	119	351	109	20	381	43	181	101	160	0	1	275	
1928	5/13/1928	May	Q2	Summer	20	370	0	5	306	120	139	279	40	234	70	103	0	4	214	
1928	5/20/1928	May	Q2	Summer	21	361	0	9	178	89	126	354	20	191	133	128	0	1	244	
1928	5/27/1928	May	Q2	Summer	22	262	0	9	167	90	0	351	38	215	175	104	0	10	268	
1928	6/3/1928	June	Q2	Summer	23	219	0	14	181	71	67	340	10	192	79	75	0	0	195	
1928	6/10/1928	June	Q2	Summer	24	151	0	205	102	49	85	289	16	124	118	50	0	1	216	
1928	6/17/1928	June	Q2	Summer	25	127	0	0	34	38	59	293	18	130	92	0	0	6	186	
1928	6/24/1928	June	Q2	Summer	26	106	0	6	61	38	9	247	35	95	21	0	0	0	185	

The Data

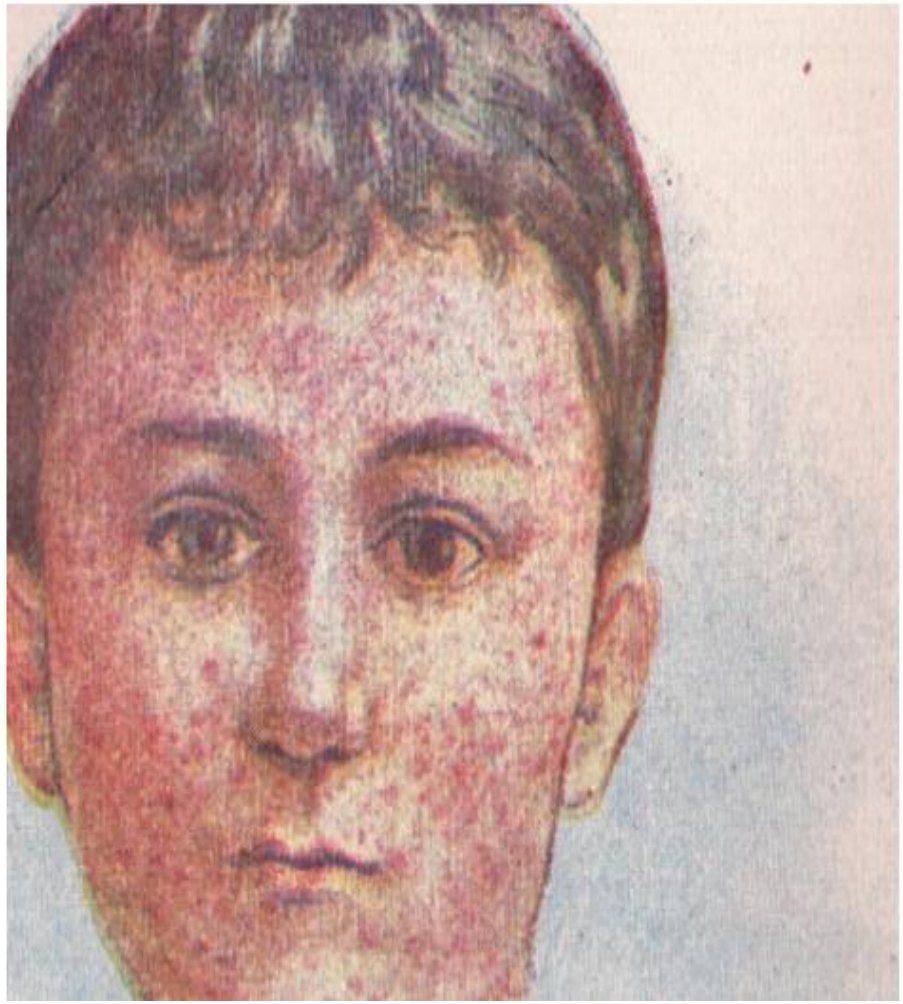
New variables calculated from the original data set bringing more clarity to the data.

DATE, MONTH, QUARTER, SEASON, REGION, DIVISION added

Approach

Exploratory

Explanatory



Introduction to Measles

Measles is a highly contagious, serious disease caused by a virus. In 1980, before widespread vaccination, measles caused an estimated 2.6 million deaths each year.

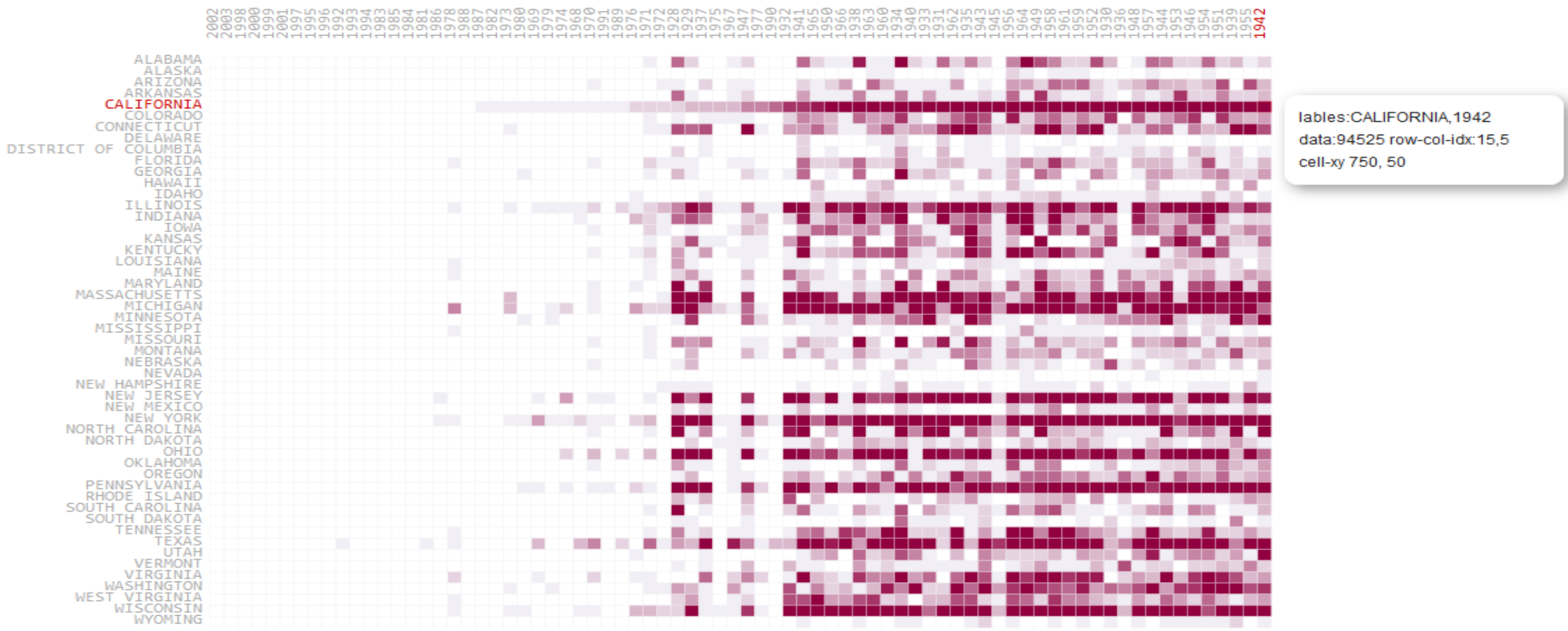
Key Facts

During 2000-2013, measles vaccination prevented an estimated 15.6 million deaths making measles vaccine one of the best buys in public health.

Design Approach

Audience are common users with little professional background .

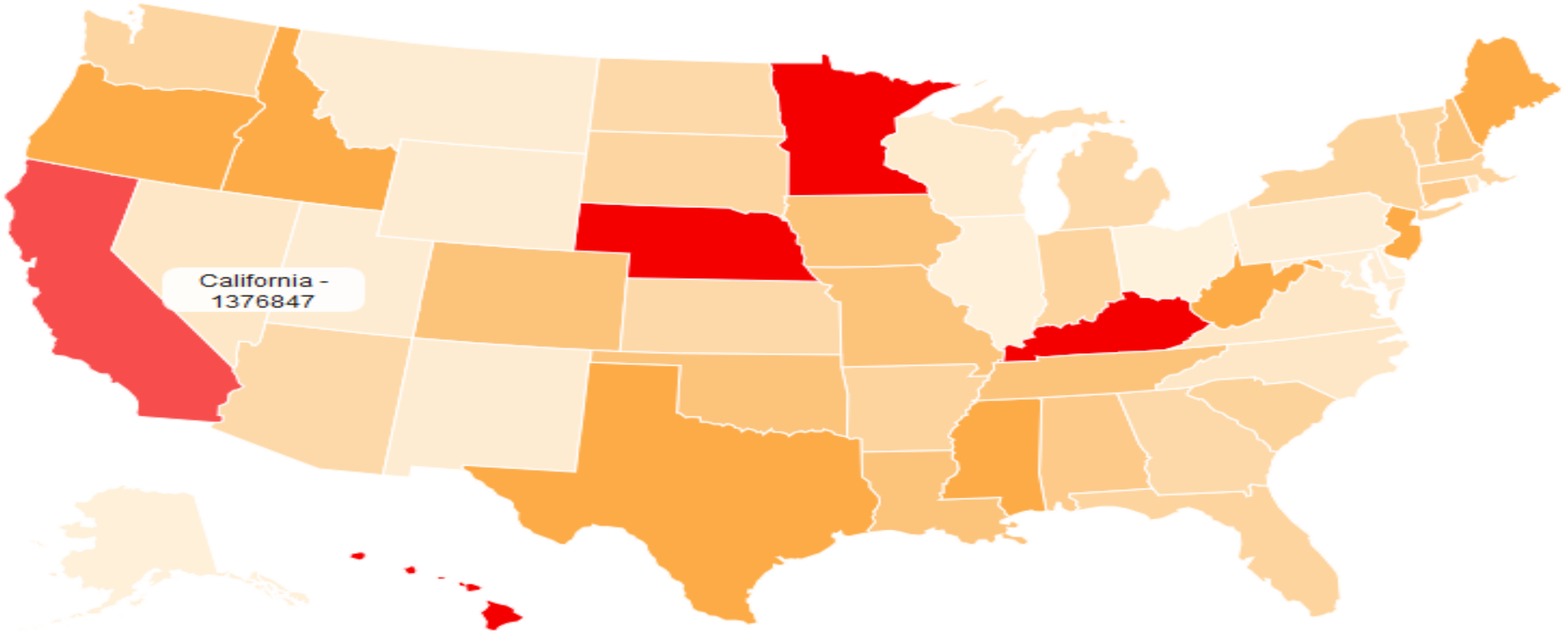
Ease the user first before step into details. Tell the story. Proceed to see core visualization parts.



Core Visualizations

Overview

Heatmap of 51 states of US against the years

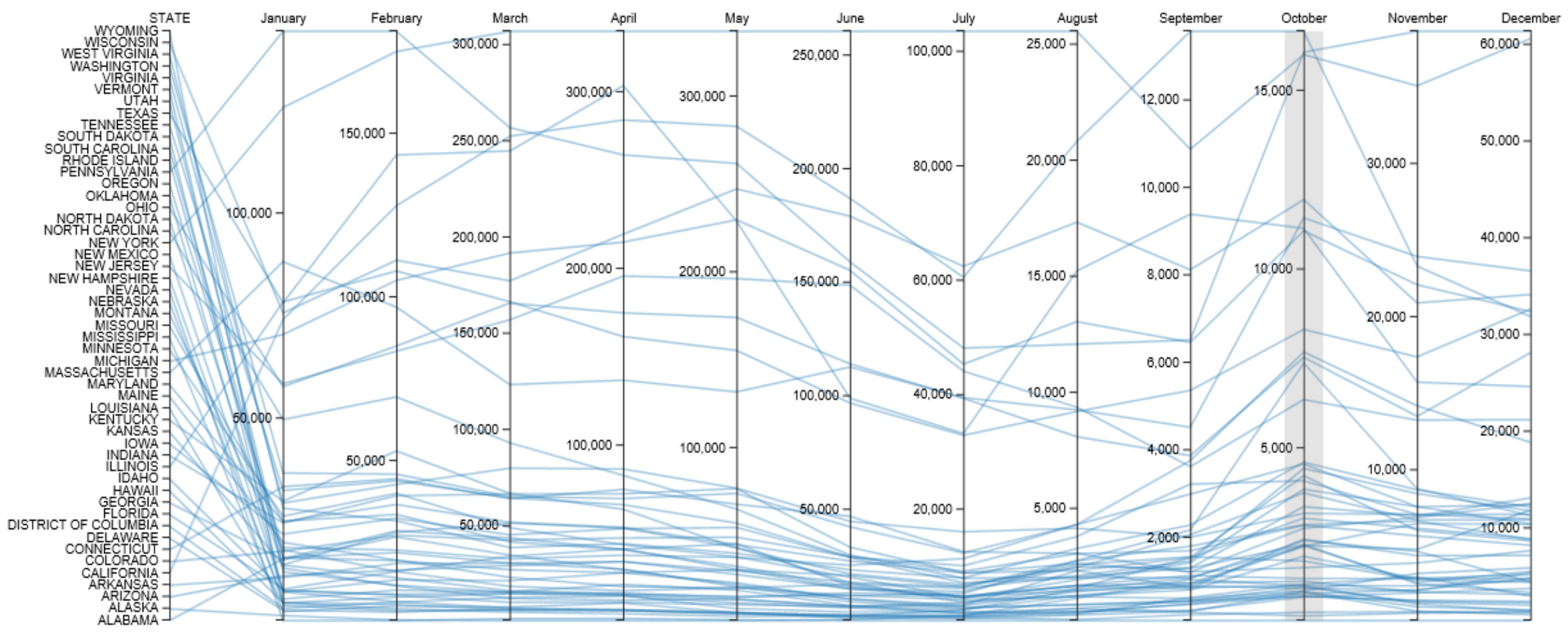


Core Visualizations

Choropleth map of US, historically aggregated numbers

State with a higher contrast show that it has significantly higher case count.

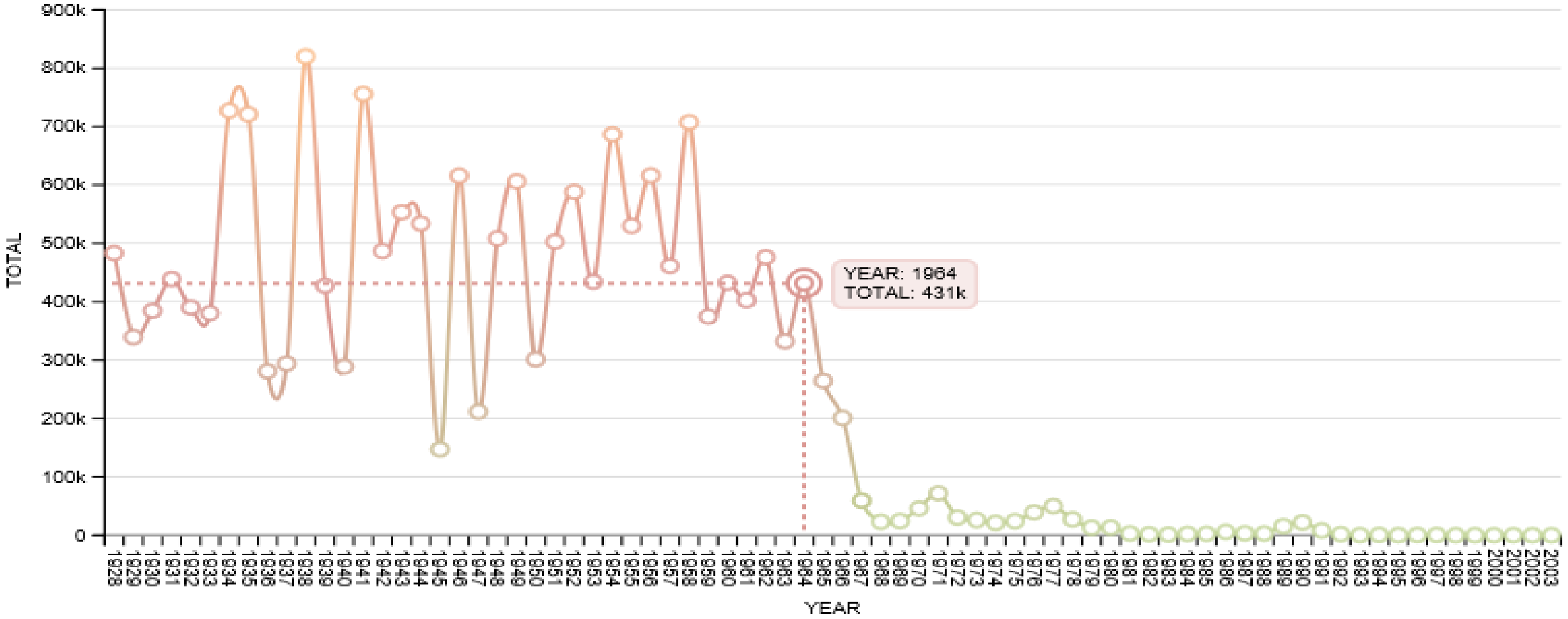
The data shown is aggregated case count from 1928-2003 per state.



Core Visualizations

Measles by Month

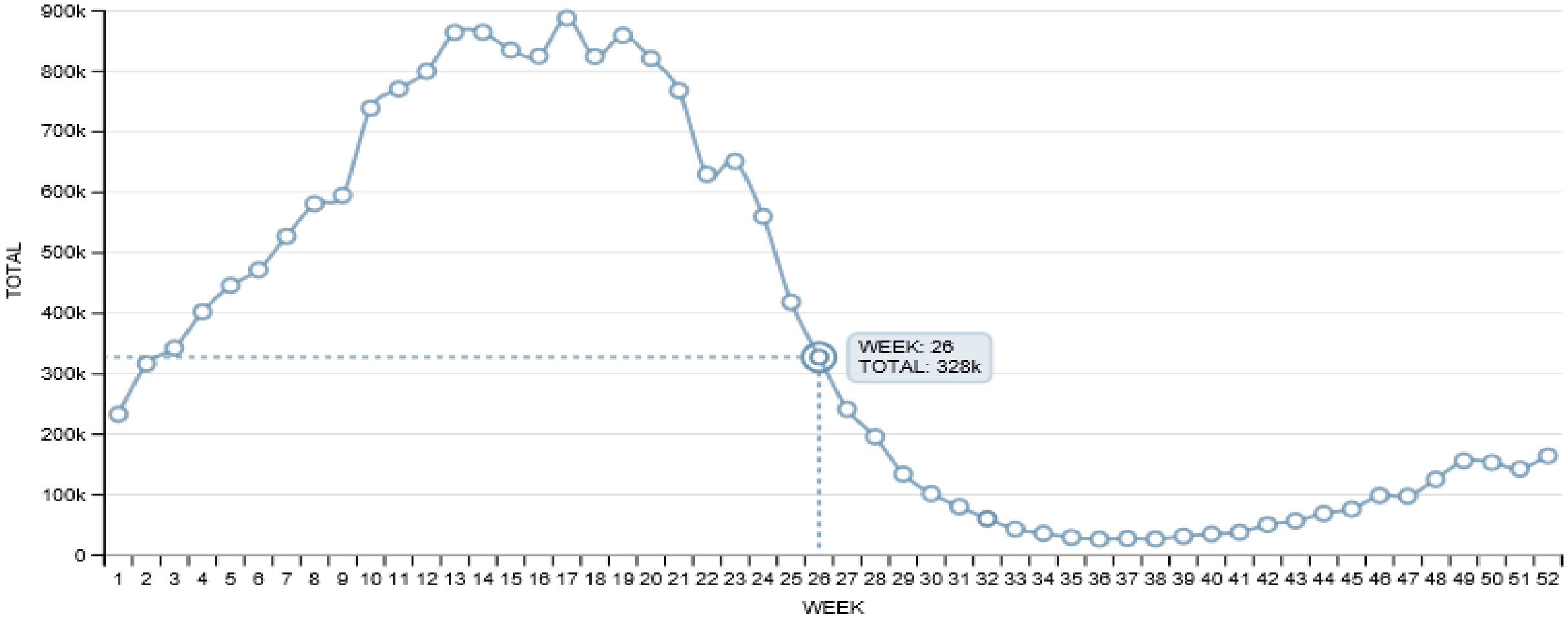
Parallel Co-ordinates



Core Visualizations

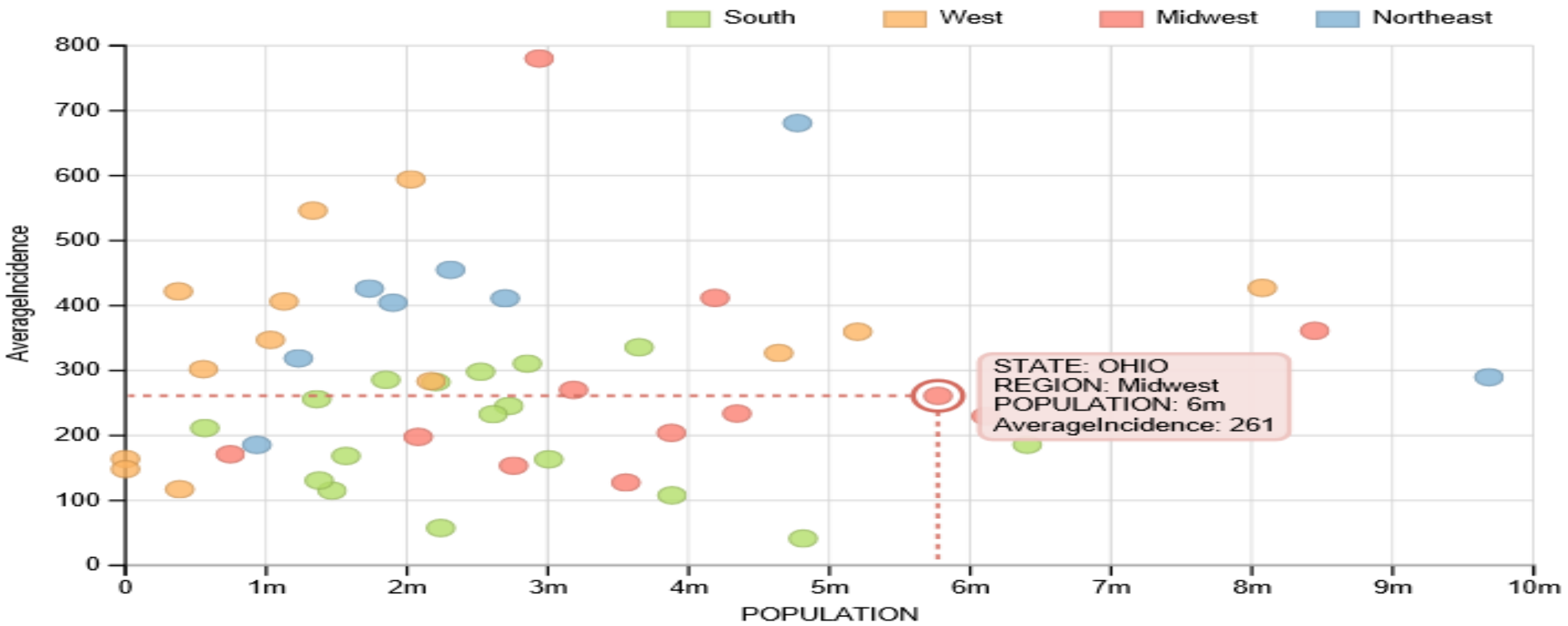
Total Measles Cases by the Years

Line Chart



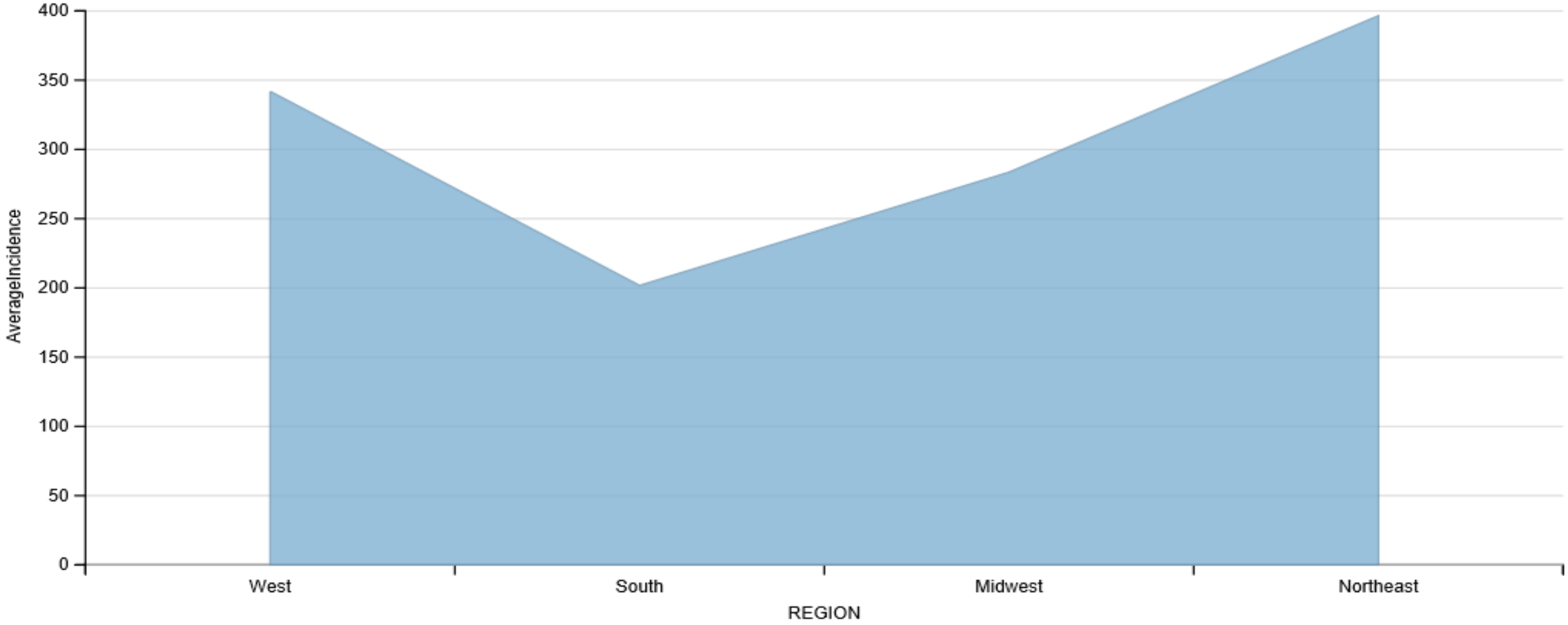
Core Visualizations

Occurrence Within a Year by Week



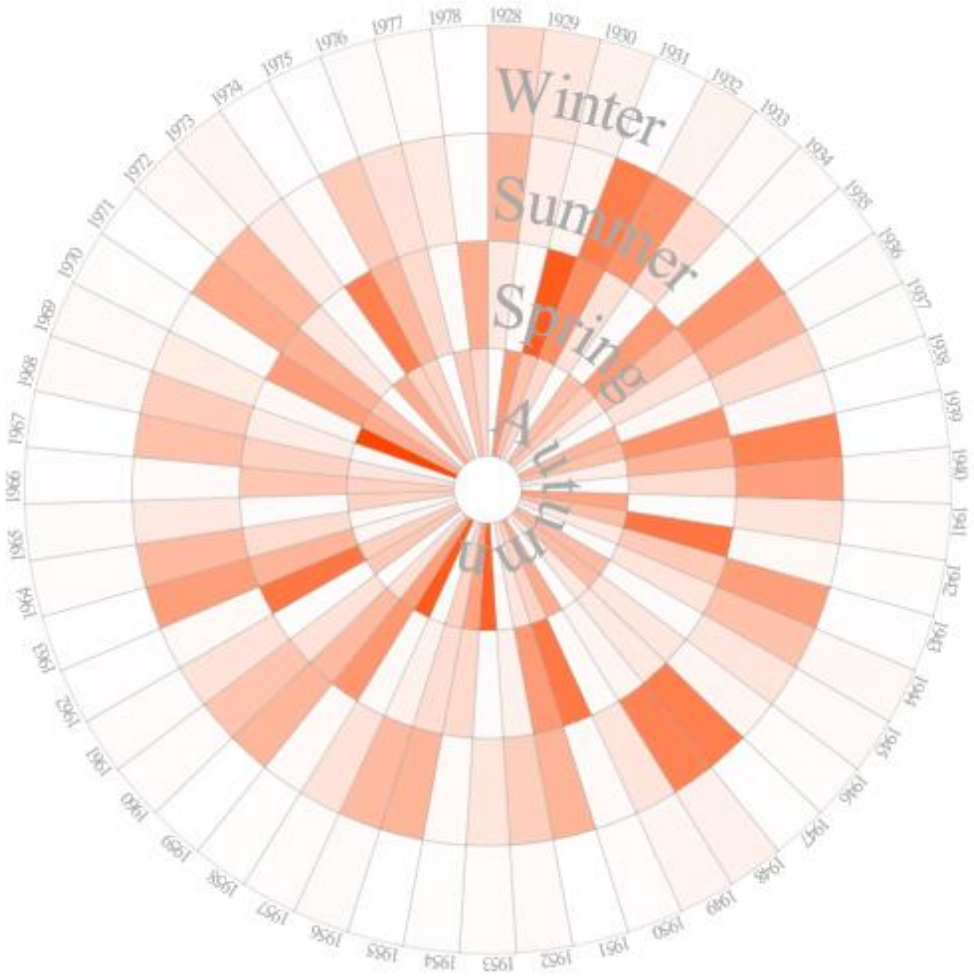
Core Visualizations

The Region, Population & Sum Trifecta



Core Visualizations

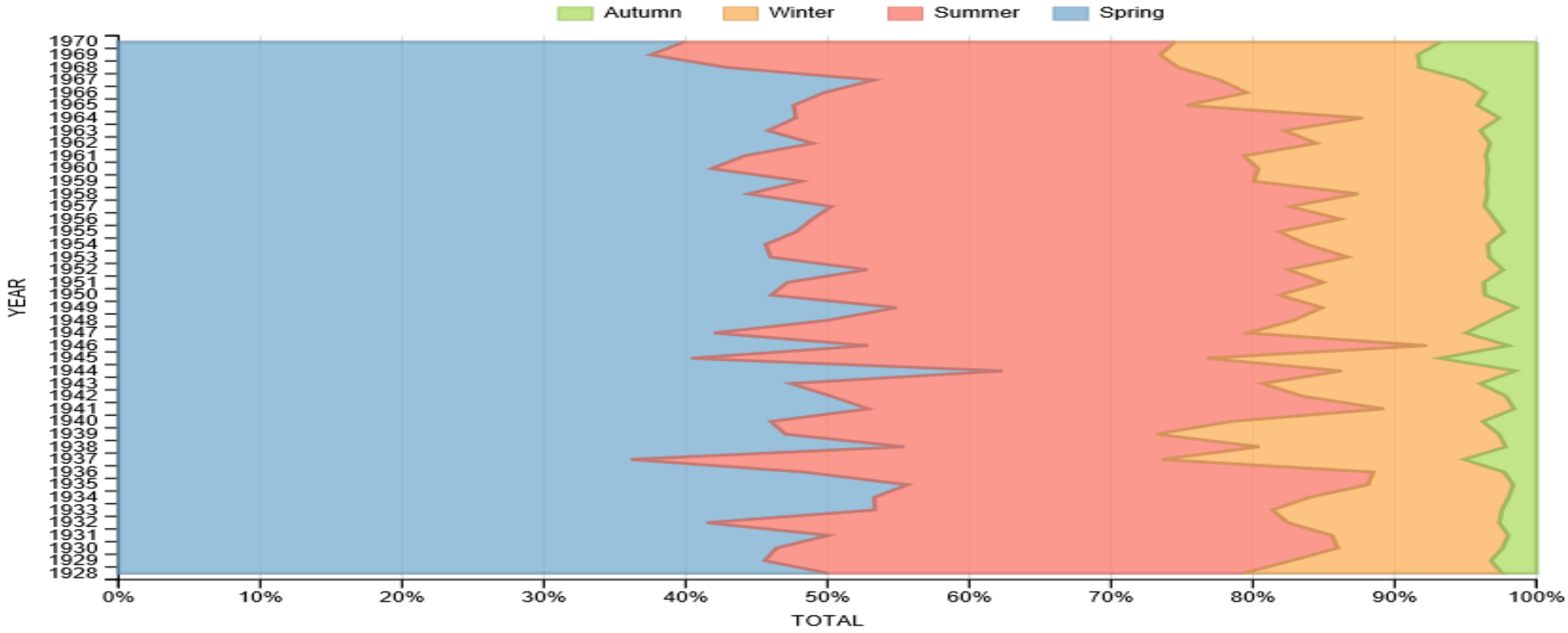
How the Regions React



Core Visualizations

Seasonality

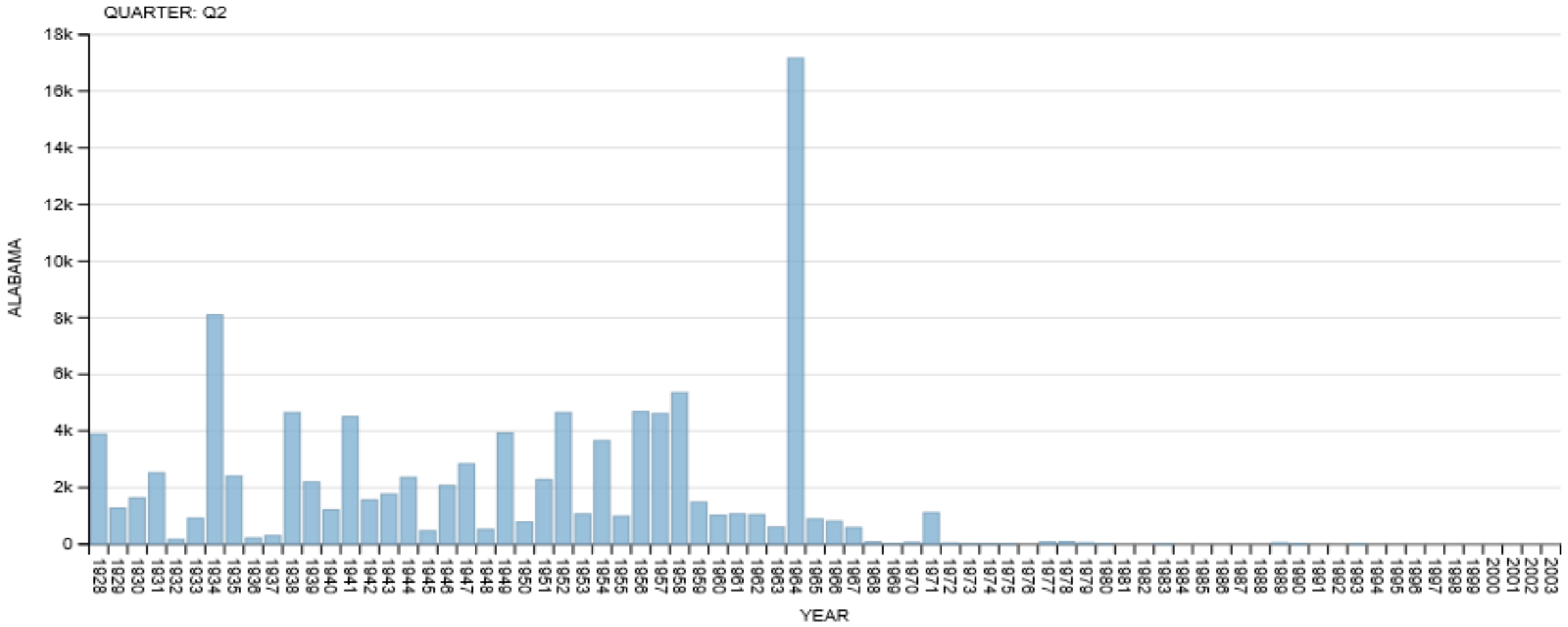
Circular Heat maps



Core Visualizations

Seasonality

Circular Heat maps

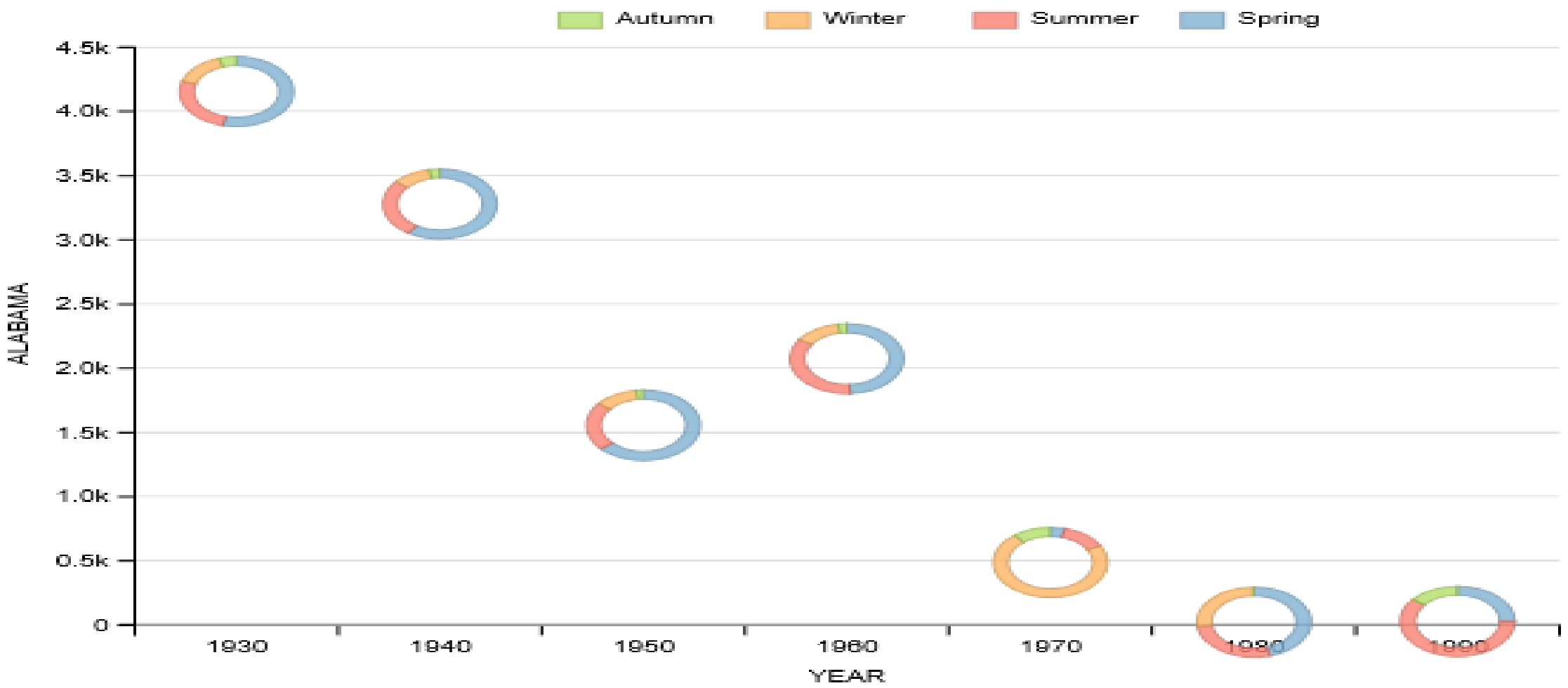


Core Visualizations

Through the Quarters

Explore how the 4 quarters in the year affect the yearly case detection for Alabama

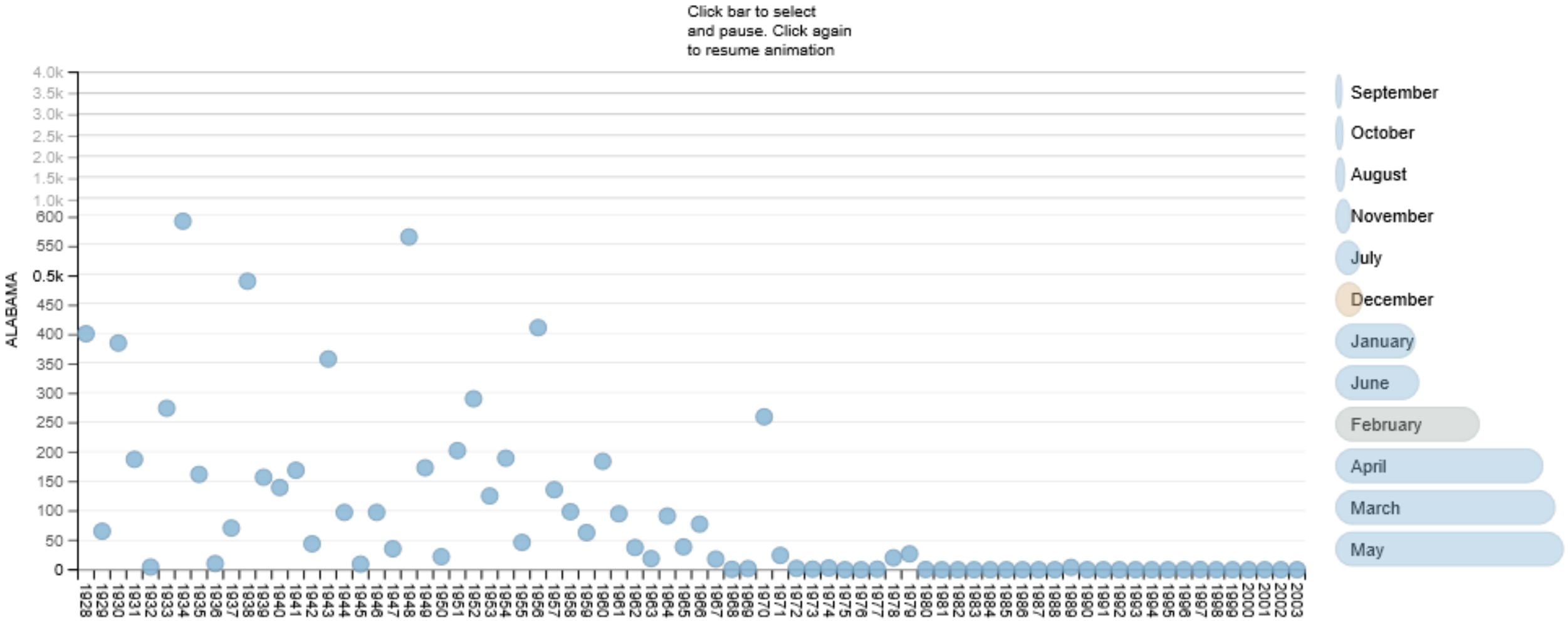
Bar charts. Dynamical



Core Visualizations

Through the Months

Scatter-plot

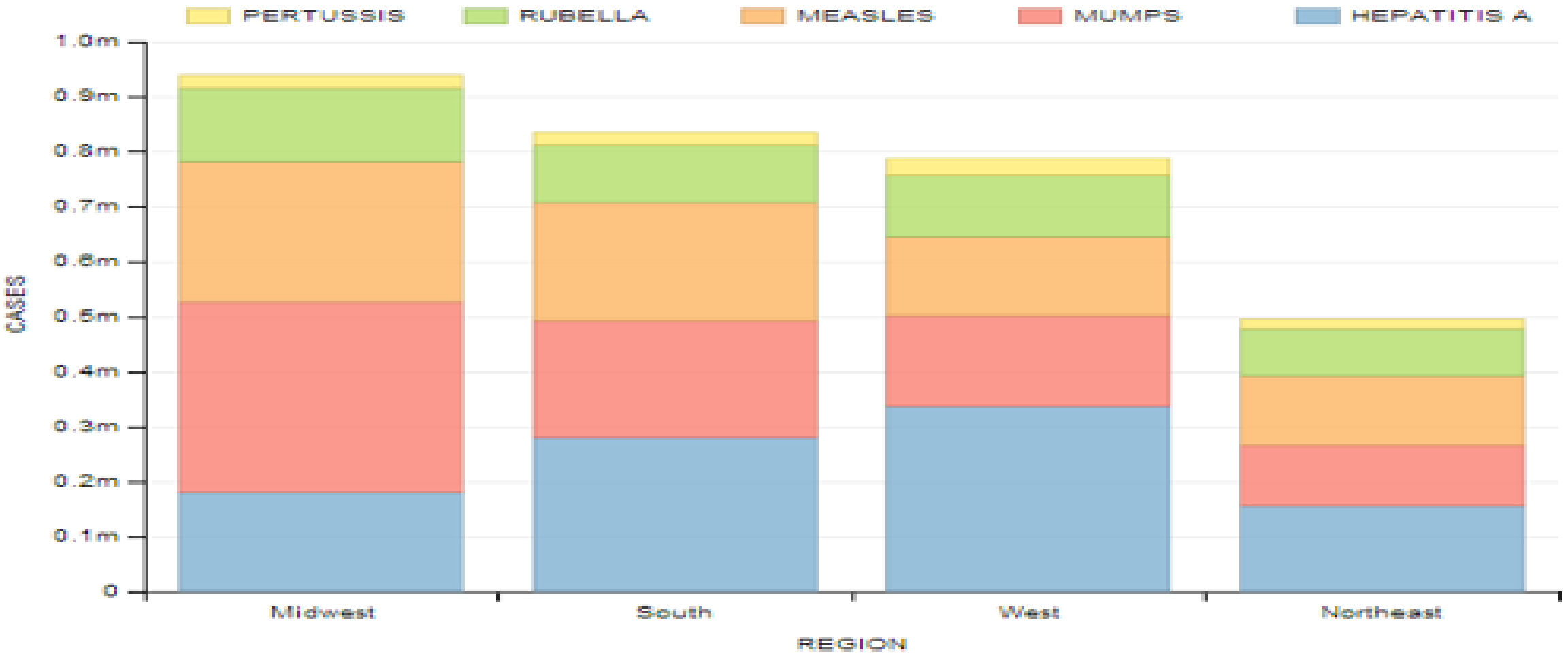


Core Visualizations

Through the Months

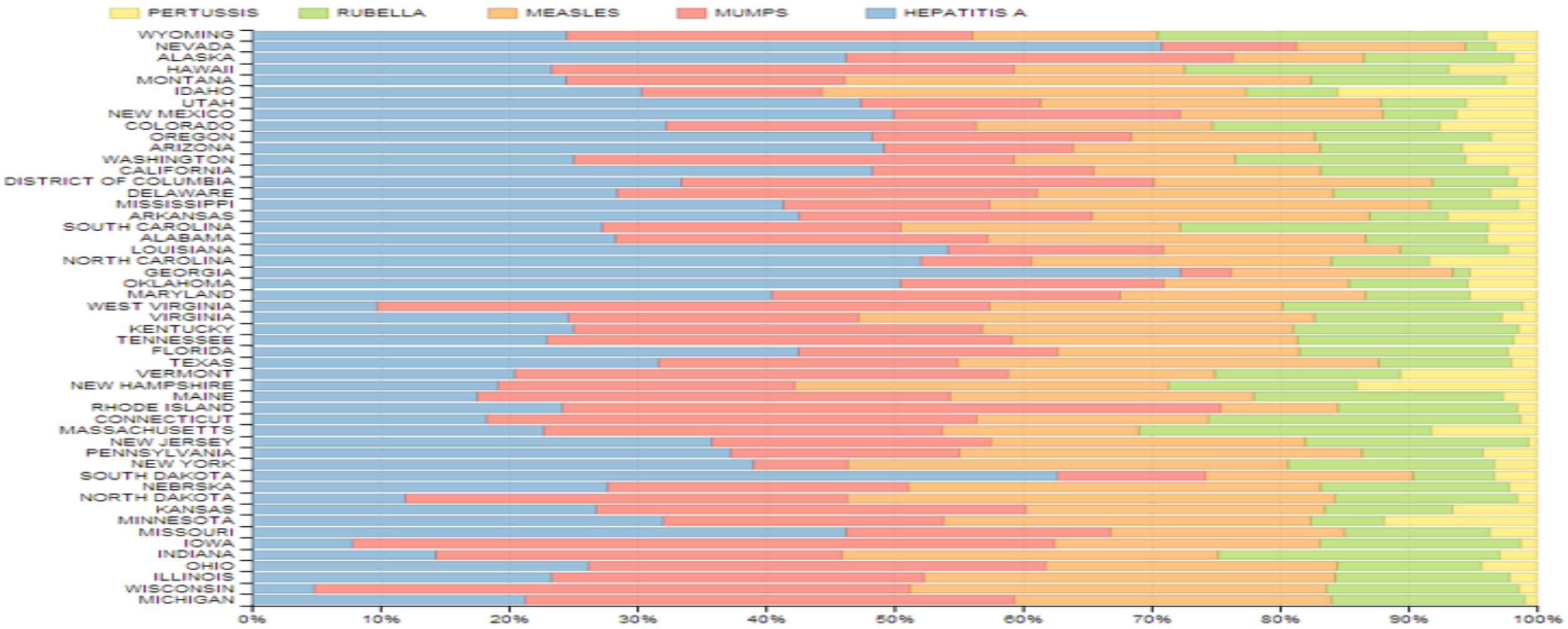
Explore how the 12 months in the year affect the yearly case detection for Alabama

Scatter-plot. Dynamical



Core Visualizations

Stacked Bar chart

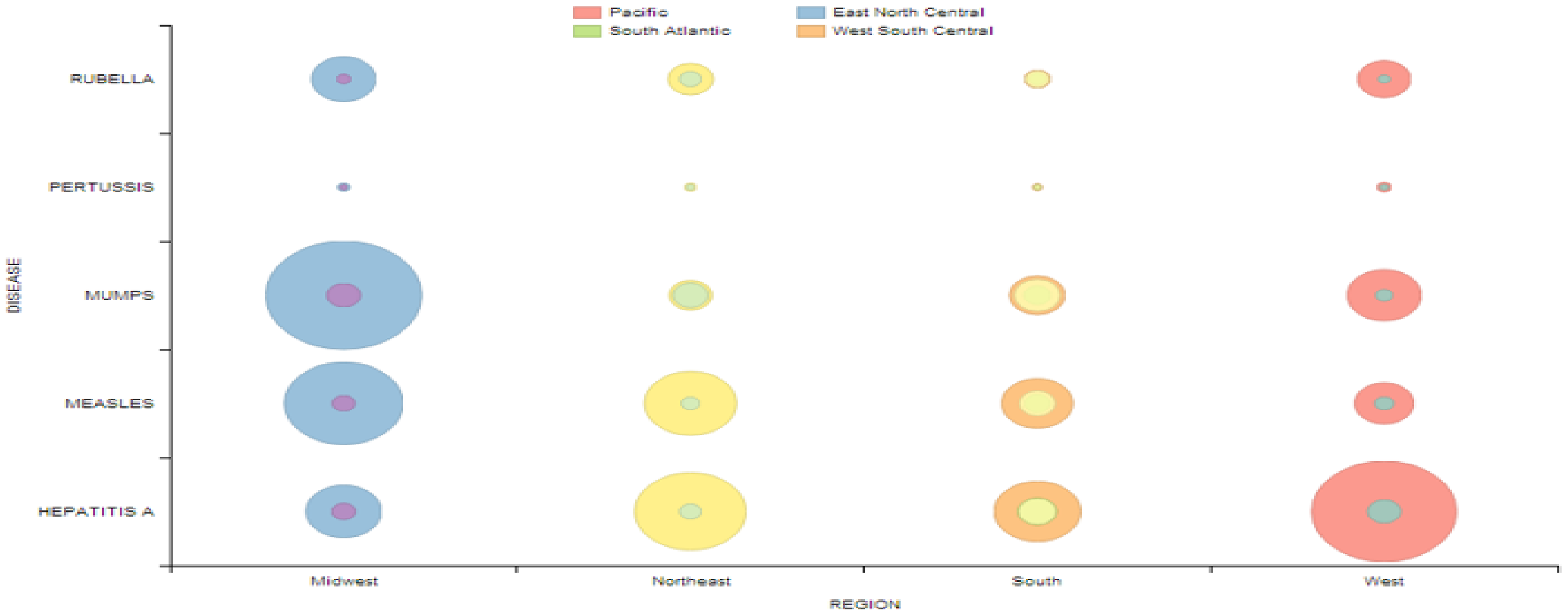


Core Visualizations

Stacked Bar chart

Core Visualizations

Pie Chart



Core Visualizations

Bubble Chart

Thank You

The Team:

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- **Zhuoheng Xie**
- **Yue Zhang**
- **Abdulrahman Aljasim**