**Oceanography (ES 128)**

**Spring 2020**

**Name:**

**Earthquakes and Eruptions: The Axial Seamount**



Public domain image of the Axial Seamount provided by Lyn Topinka. [https://commons.wikimedia.org/wiki/File:WestcoastSeaplates.svg](https://commons.wikimedia.org/wiki/File%3AWestcoastSeaplates.svg)

1. **Locate the Axial Seamount on the image above.**
	1. What type of plate interaction is occurring here?
	2. Which plates are involved?
	3. What type of crust is involved?
	4. Why would you expect active volcanoes here?
2. **Choose one of the techniques that scientists use to measure volcano deformation and describe it in your own words.**

**\*Wait for instruction before moving onto Question 3.**

1. **Go to the link below to explore the graph of seafloor elevation over time**

[**https://datalab.marine.rutgers.edu/explorations/geology/activity3.php?level=exploration**](https://datalab.marine.rutgers.edu/explorations/geology/activity3.php?level=exploration)

* 1. Which dates does this graph start and end? (Hint: put your cursor on the actual line of the graph and move left to right, the dates will be shown in the upper right corner)
	2. What variable appears on the y-axis? What are the units?
	3. What are the trends in seafloor elevation over time?
	4. Click the box next to Show Estimated Threshold. What does this line mean? (Hint: read the Data Tips below the graph)
	5. Click and drag your cursor on the graph to make a prediction for what will happen to seafloor elevation leading up to the 2015 eruption. Do the actual observations match your predictions?

**\*Wait for instruction before moving onto Question 4.**

1. **Go to the link below to explore earthquake magnitude at the Axial Seamount during April, 2015.**

[**https://datalab.marine.rutgers.edu/explorations/geology/activity4.php?level=application**](https://datalab.marine.rutgers.edu/explorations/geology/activity4.php?level=application)

* 1. What variables are shown on the graph?
	2. What is the range of earthquake magnitudes in these data?
	3. When do you see the largest earthquakes along this time series across the diking-eruptive event?
	4. When do you see the deepest earthquakes along this time series across the diking-eruptive event?
	5. How does what you see support what you previously knew about seismic activity at seamounts?