

**HIGHLIGHTS AND BREAKTHROUGHS**

**Dissecting a volcano**

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**Abstract:** Eruption forecasting is a central goal in volcanology. In recent years, eruption forecasts have achieved great success due to the increased monitoring of active volcanoes. However, understanding the physical processes responsible for volcanic unrest remains a challenge. In the January issue of *American Mineralogist*, Viccaro et al. (2016) linked signals of seismic unrest to magma mixing events responsible for the 2010 eruption at Eyjafjallajökull in Iceland. Their study represents a multi-disciplinary effort in which integration of petrological and geophysical observations leads to a better understanding of how volcanoes work, by providing a look into Eyjafjallajökull's magmatic plumbing system and estimates of its magmatic ascent rates. This information is key to interpreting monitoring data and successfully forecasting eruptions. **Keywords:** Volcanology, Eyjafjallajökull, magmatic plumbing system, magma ascent rates