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Hot topics



Photo by Professor Steve Lundblad

University of Hawaii at Hilo geology student Bryan Patterson inserts a thermocouple wire into a lava flow, while an assistant reads the temperature in a cooler area. Bryan is wearing sunglasses and a face mask, as well as regular protective clothing, because of the heat. This is part of the field work done by students in Ken Hon's Volcanology class.



By COLIN M. STEWART

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Students of volcanology often find themselves at a distinct disadvantage, compared to people studying one of the other sciences in a laboratory.

Measuring the interaction of chemicals in a beaker or dissecting a frog is something that anyone can do anywhere. But when it comes to observing molten lava emerging from the earth's crust, one's options are somewhat limited.

But last weekend, students in advanced volcanology courses at the University of Hawaii at Hilo hiked two hours over rough terrain to the now mostly buried Royal Gardens subdivision, where they were able to obtain some hands-on experience with an active lava flow — or as hands-on as anyone is likely to get without serious injury.

Wearing heavy boots, gloves, and heat masks, the students took temperature readings and collected samples of 'a'a and pahoehoe lava as it traveled down the pali, or hill, slowly working its way toward the coast.

Call it a perk that comes with studying at one of the few universities in the world with access to an active volcanic eruption.

Twenty-two-year-old Meghann Decker, a native of Western Massachusetts, says it was the opportunity for such experiences that drew her to Hawaii.

"I transferred here from Rhode Island to be somewhere more geologically active," she said Tuesday. "The East Coast doesn't have a whole lot of geologic activity going on."

The experience of standing along the kipuka — an upraised, isolated patch of forest surrounded by lava — watching methane explosions, seeing trees being encroached upon and burning, and the sounds all made for an experience unlike anything she'd ever witnessed, Decker said.

"I was really excited," she said. "I'd only seen pahoehoe before, and seeing 'a'a is a lot more difficult and rare. Pretty incredible. I loved the sounds — everything burning, and the crackling sound the lava makes, like these clinking sounds, unlike anything else I've ever heard. The sound is really what makes me want to see it all the time."

UHH Assistant Geology Professor Ken Hon has been teaching the advanced volcanology class since 1998, and he's taken students on plenty of excursions to interact with the lava, but it never gets old he said Tuesday, because there's always something new.

"I really enjoy it," he said of the field trips. "It's one of those life-altering experiences, getting to actually see rock move. For geologists, it's really important."

Conditions this week were particularly good for him to cover a lot of the basics with his class, involving taking samples and making careful measurements of lava temperature.

“The nice thing right now, is that over the last several months the lava hasn’t been able to construct a very efficient lava flow,” he said. “But now, it’s constructing a tube system, moving down the pali. ... It’s advancing back towards the coastal area.”

Hilo resident Bryan Patterson, 25, said he enjoyed using a device known as a thermocouple to take temperature readings, which can be a lot more difficult than it appears to the untrained eye.

“When you stick it in there, it cools the lava that it’s touching, and that insulates the thermocouple. So you’ve got to keep moving it in and out so you get a better reading,” he said. “It went pretty well. The third try we got our best reading.”

One thing that has had a considerable impact on teaching the course has been the increase in information provided online by Hawaii Volcanoes Observatory. In the last four or five years, the U.S. Geological Survey site <http://hvo.wr.usgs.gov/> has continued to add live webcams and updated data on the status of the lava flows, making it far easier for Hon and other professors to plan their excursions with students.

“Their reporting has really made things easier,” he said. “It used to be we’d take a class out, and half the time, there wouldn’t be much going on, and we’d have to say, ‘There’s not much we can do here.’ But this has made a big difference.”

Initially, the class had planned to go out to the site on Thursday, he said, but they ended up delaying until Saturday, when the flow was more active. It means that he and his students must be more flexible with their schedules, but such is the life of a volcanologist, he said.

“You’re taught that the Earth is a dynamic place, always changing. And we think we have a good concept of that. But I remember coming out here when I did my Ph.D. thesis. I was used to going out, looking at some rock outcroppings, and you’d go back, sometimes years later, and they’d still be there. I came out here, and you’d go out and look at something, and the next day it’s gone. Then you learn what dynamic REALLY means,” Hon said.

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