

UNH News Release: UNH Geologists to Instrument Northern N.E. With Seismometers



UNIVERSITY of NEW HAMPSHIRE


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UNH Geologists to Instrument Northern N.E. With Seismometers

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UNH graduate student Evangelos Korkolis, assistant professor of Earth science Margaret Boettcher, and graduate student Ian Honsberger look for a suitable site for a seismometer. They are currently seeking similar locations for 24 seismometers that will be placed around northern New England. Credit: Incorporated Research Institutions for Seismology (IRIS)

DURHAM, N.H. – This summer, two University of New Hampshire graduate students are fanning out across northern New England searching for sites for 24 seismometers – instruments that record earthquakes – as part of a nationwide effort that’s been described as a telescope into the Earth’s interior. Margaret Boettcher, assistant professor of Earth sciences at UNH, along with graduate students Evangelos Korkolis and Ian Honsberger, have been tapped by EarthScope, a National Science Foundation-funded project that aims to better understand the structure of the North American continent and the deep Earth, to help place seismometers every 70 kilometers throughout the continental U.S.

“This project will help us learn all kinds of interesting information about the structure of the interior of the Earth,” says Boettcher. “It will also help us understand the details of how earthquakes start, rupture and stop.” That information, she says, will eventually lead to better prediction of earthquakes.

But first, the geologists need to find sites for the seismometers throughout New Hampshire, northern Vermont, and all of Maine. They anticipate the task will take several months of field work and will take them to some of the most rugged and remote reaches of the region.

The seismometers – a series of springs and masses about the size of a basketball and so precise they could detect a minor earthquake in Japan from northern Maine – are unmanned and solar-powered, so they need to be placed in open areas, like farms or logging clear-cuts. They can’t be near roads or streams, which cause noise and vibrations that the instruments could pick up, and they should be in areas with six feet of sediment above the bedrock.

“My students are spending a lot of time on Google Earth looking for ideal sites, then they’ll be meeting with private landowners to seek permission to install these instruments,” says Boettcher. “We’re excited to be involved in this project, because it really involves the public. It engages the whole nation.”

Korkolis and Honsberger will be doing the majority of the field work, starting with sites in southern New Hampshire and along the Kancamagus Highway, then moving into Vermont and finally the entire state of Maine. Once installed, the seismometers will remain in place for two years.

The work of the UNH geologists comes at the tail end of the decade-long effort to map the structure of the Earth’s interior with regularly spaced seismometers across the continental U.S. Called the Transportable Array, the project has deployed a network of 400 seismometers every 70 kilometers (approximately 40 miles) working from the western edge of the continent. After two years, each instrument is moved to the next location on the eastern edge of the array.

The efforts of the UNH team are part of the nationwide EarthScope project: [www.earthscope.org](http://www.earthscope.org). UNH is also a member of IRIS, Incorporated Research Institutions for Seismology, which is coordinating the overall project.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

#### Photograph available to download:

<http://unh.edu/news/releases/2012/jun/img/boettcherseismometers.JPG>

Caption: L-R: UNH graduate student Evangelos Korkolis, assistant professor of Earth science Margaret Boettcher, and graduate student Ian Honsberger look for a suitable site for a seismometer. They are currently seeking similar locations for 24 seismometers that will be placed around northern New England.

Credit: Incorporated Research Institutions for Seismology (IRIS)

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