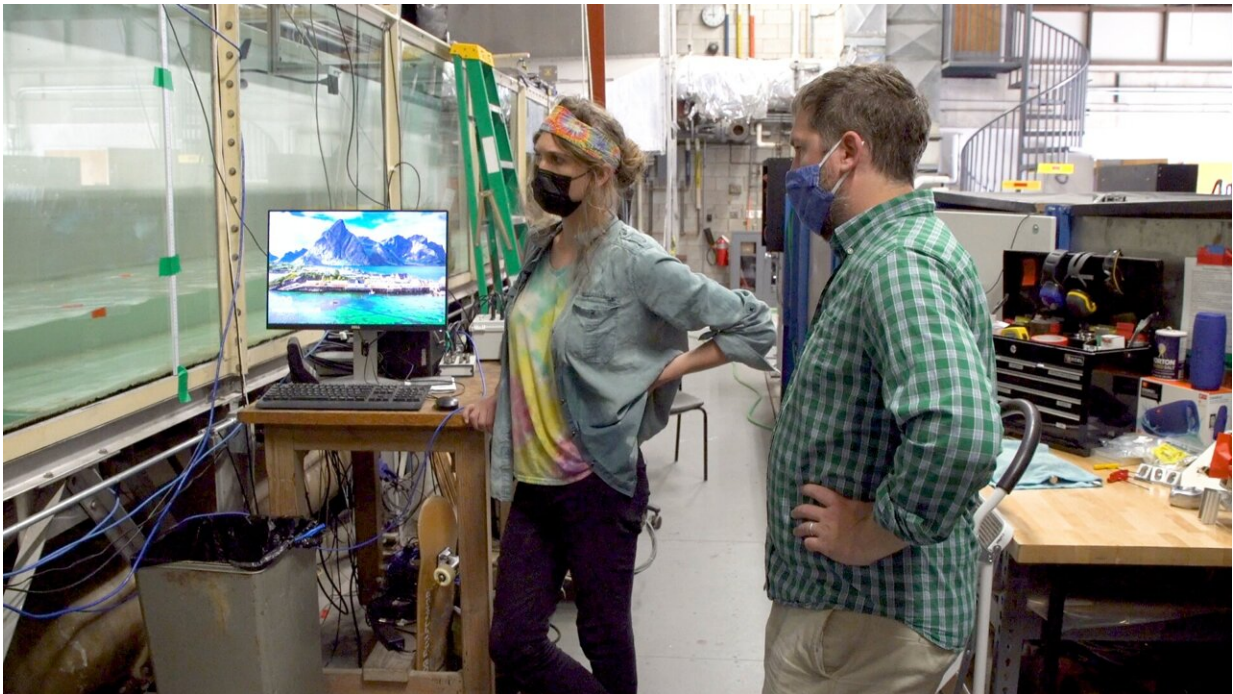


Video: Modeling how debris affects buildings during a tsunami

December 14 2021, by Kiyomi Taguchi



Credit: University of Washington

When we think of tsunamis, we might picture a giant wall of water that wipes buildings off a beach, or knocks down houses along a coastline. But much of the devastation caused by a tsunami is created by the surge of moving water that dislodges things in its path and turns them into destructive objects. During a tsunami, buildings are damaged not only by rising water but also by the debris carried in the currents.

In this [video](#) we see Mike Motley, associate professor of civil and [environmental engineering](#), and graduate student Nikki Lewis as they conduct an experiment simulating waterborne debris hitting a [building](#) in the same way that cars, shipping containers or building materials might hit structures during a tsunami event.

As part of the experiment, undergraduate student Haley Herberg lowers hard plastic bars of "debris" into fast-moving water where they float down-current until they collide with an aluminum box. The box simulates a flooded multistory building with submerged pillars below and houses sensors that measure the impact of debris on the box and the underwater pillars.

The researchers are looking at how the debris pushes on the building—either by hitting it or getting lodged on it and creating a dam. They are also looking for patterns in the way floating [debris](#) moves around and against rigid shapes. The information may help in designing buildings in coastal communities that can better withstand damage by floating objects in tsunami events.

Provided by University of Washington

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