THE NATIONAL CENTER FOR AIRBORNE LASER MAPPING (NCALM)

UNIVERSITY of HOUSTON

CULLEN COLLEGE of ENGINEERING

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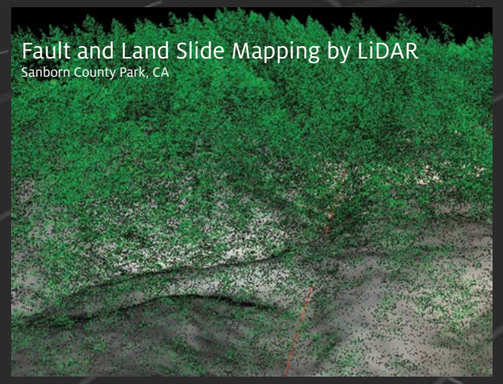

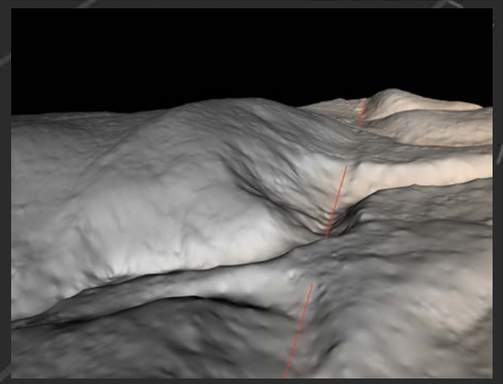

ABOUT NCALM

NCALM is based at the University of Houston and is operated in partnership with the University of California, Berkeley. The National Center for Airborne Laser Mapping is supported by the National Science Foundation (NSF) and is associated with the multi-disciplinary Geosensing Systems Engineering and Sciences graduate program at the University of Houston.

NCALM's roots trace back to 1996 at the University of Florida. It was there that Ramesh Shrestha, NCALM director and Hugh Roy and Lillie Cranz Cullen Distinguished Professor of civil and environmental engineering, began working with NCALM chief scientist Bill Carter on the center's core technology, Light Detection and Ranging, or LiDAR. With LiDAR, researchers fly a plane over an area they want to map, shooting hundreds of thousand of laser bursts per second at the ground. How that light returns to its source can be used to create extremely detailed topographical maps, even through dense vegetation and murky water.

Learn more at http://ncalm.cive.uh.edu/home/about

RESEARCH

NCALM has, in the past five years: located ancient ruins, identified levees in danger of failing, charted land erosion following hurricanes, created flood maps for urban areas, found near-drought conditions in seemingly healthy plants, mapped the sea floor, charted areas prone to landslides and helped identify how the presence of life impacts geographical features.

The maps produced using the LiDAR technology have proven valuable to researchers in a number of disciplines. NCALM, in response, has dedicated itself to being a resource for outside investigators as well as a home to basic and applied research.

As of May 2015, 70 NSF-funded principal investigators have conducted research with data delivered by NCALM. Under a special SEED program, it has provided LiDAR data to 91 M.S. and Ph.D. students to date, and the data have been used in their theses and dissertations. Hundreds of peer-reviewed journal articles that utilized NCALM observations have been published, including featured articles in *Nature*, *Physics Today*, *Science* and *Proceedings of the National Academy of Sciences*.

Learn more at http://ncalm.cive.uh.edu/publications/papers

ACADEMICS

The University of Houston Cullen College of Engineering is the only institution in the world offering a graduate program in Geosensing Systems Engineering and Sciences (GSES). As the geospatial technology sector continues to grow rapidly, so does the demand for scientists who are trained to use technologies such as LiDAR. The Geosensing Systems Engineering and Sciences graduate program was established at UH in direct response to industry needs.

Students pursuing a GSES M.S. or Ph.D. degree will have access to hands-on training and research at NCALM in addition to being taught by the world's leading experts on airborne laser mapping.

Learn more at http://ncalm.cive.uh.edu/gses/geosensing

Antarctic LiDAR: McMurdo Station
A representation 3D image generated from LiDAR observations acquired by NCALM in 2014/2015.
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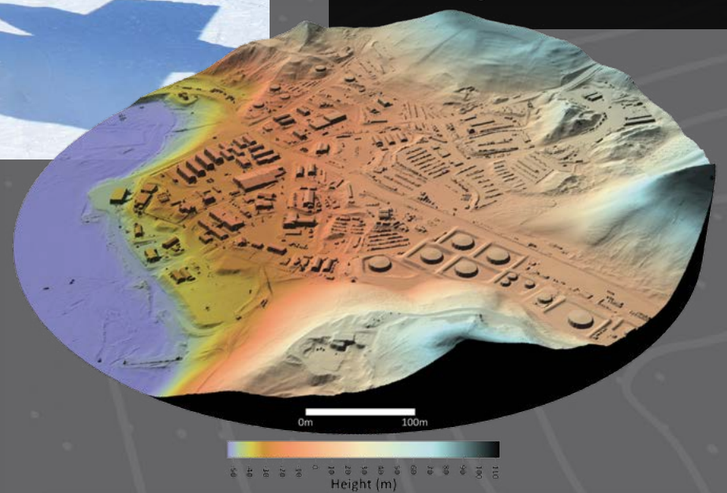
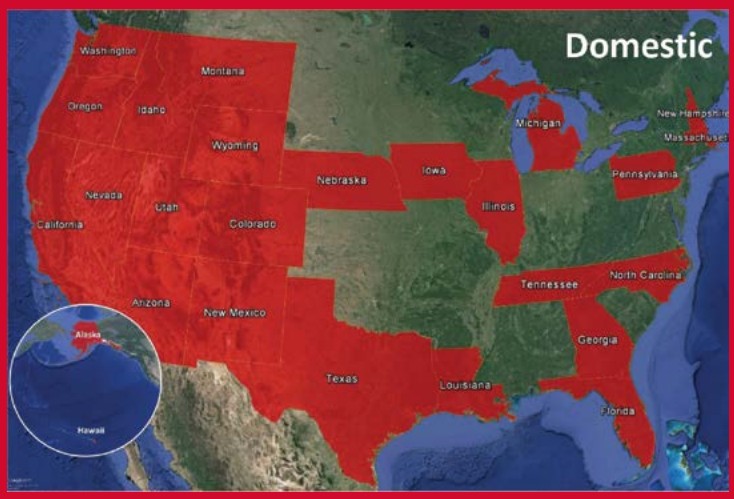


University of Houston

NCALM

University of California Berkeley

FUNDED PROJECT SITES

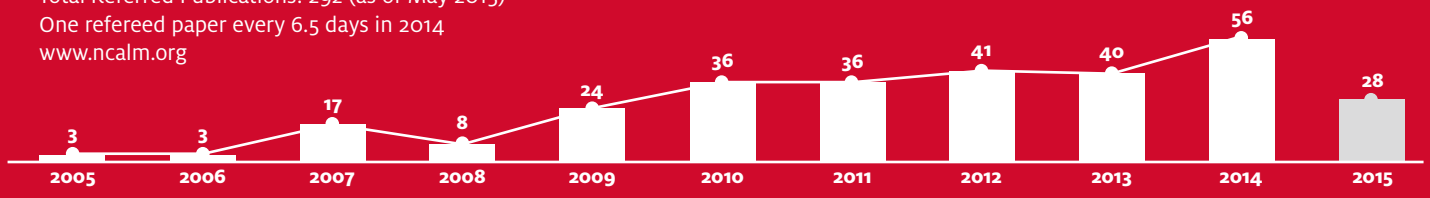


27 States including Alaska and Hawaii

7 Countries including Puerto Rico

158 projects for 70 principal investigators and 91 graduate students, covering some 35,000 square kilometers in over 100 locations

Total Referred Publications: 292 (as of May 2015)*
One refereed paper every 6.5 days in 2014
www.ncalm.org



*Papers published using NCALM data in referred journals, including *Nature, Science, PNAS, Physics Today, Report On Progress in Physics...*

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