

## The Role of Models in the Design of the Lower Mississippi River Sediment Diversions

*Research Talk and Physical Model Open House*

**Wednesday, April 10, 2019**

Alden Research Laboratory, Inc.

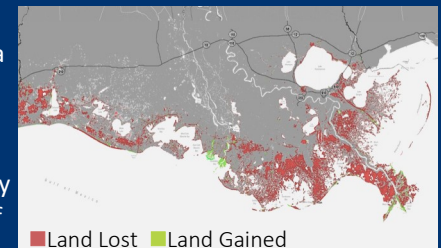
30 Shrewsbury Street, Holden, MA 01520 [Map It](#)

**6:00 p.m.** Reception, Light Dinner, Physical Models; **7:00 p.m.** Lecture

**Presented by Dan Gessler, PhD, PE, D.WRE**

**Vice President, Alden Research Laboratory, Inc.**

Between 1932 and 2010 the state of Louisiana has lost about 2006 square miles of land due to a combination of subsidence, sea level rise, and management of the Mississippi River. Computer models predict a further loss of 1800 to 4200 square miles in the next 50 years, amounting to 55% of the land in Plaquemines Parish and resulting in \$300 million in annual economic damage. Following hurricanes Katrina and Rita, the Coastal Protection and Restoration Authority (CPRA) was formed as a single state entity with the authority to protect and restore the lands of coastal Louisiana.



The \$50 billion coastal master plan includes restoration and risk reduction projects. The restoration projects include barrier island restoration, hydrologic restoration, marsh creation, ridge restoration, sediment diversion, and shoreline protection. The Barataria and Breton Basins have experienced some of the largest land loss—almost 700 square miles. Two sediment diversions are being designed, one for each basin. The sediment diversions connect the Mississippi River to the basins, allowing for the controlled diversion of up to 75,000 cfs of water and sediment to the Barataria basin and 30,000 cfs to the Breton basin.

The design and construction of sediment diversions on the scale proposed for Barataria and Breton is unprecedented. After briefly discussing the history of the land loss, the presentation will focus on the numeric and physical modeling required to design the major diversion features, including the inlet, conveyance, and outlet structures. ***Alden is constructing two 1:65-scale, live-bed physical models to test performance and effectiveness of the diversions. The models are currently under construction and the lecture will include the opportunity to see the completed models.***



*Dan Gessler, Vice President, Alden Research Laboratory, has been with the company for over 17 years. As a registered professional engineer, he leads the hydraulic modeling practice and provides technical leadership in numeric and physical modeling—he's particularly interested in modeling efforts that combine the two. Prior to joining Alden, Dan worked as a research scientist at Colorado State University where he also earned his PhD.*

This FREE event is funded by the BSCES John R. Freeman Fund as outreach to students and young professionals interested in careers in water resources engineering. All are welcome. [Register online](#) or at the door. Carpooling is encouraged. Alternately, for those traveling from the Boston area, the MBTA Commuter Rail 4:20 p.m. train from South Station arrives at Union Station in Worcester at 5:45 p.m. Transportation will be provided from Union Station to Alden, and carpooling will be coordinated to ensure a safe return to the Boston area.

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