



The Delaware Section of ASME, Delaware Section of ASCE, ASME UD Student Section and ASCE UD Student Section
Cordially invite you to

**Emergency Repair of Bridge 1-813 on I 495 Over the
Christiana River Presentation By**

Barry Benton PE

DeIDOT State Bridge Engineer

Wednesday – March 1, 2017

Agenda:

- **5:00 to 5:30 – Networking and Light Dinner**
- **5:30 to 7:30 – Presentation by Barry Benton, PE**
- **7:30 to 7:45 - Q&A Session & Closing Remarks**

Price: \$10 ASME & ASCE Members; \$15 Non-members & Guests; and No Charge for Students – Reservations required but pay at door.

Location: Composites Manufacturing Science Laboratory – Room 106

- **Light Dinner will be provided**
- **1 to 2 Professional Development Hours (PDH) depending on presentation**

Reservations:

Please RSVP to Tom Langley at langleyt2@asme.org or call 302-383-8994, no later than **noon** on Tuesday February 28, 2017. Please leave your full name, affiliation, contact number & email address; and if you seek a PDH certificate. If you find you cannot attend, please call in a cancellation before the February 28 deadline.

Background:

During the summer of 2014 the damaged I-813 bridge on Interstate 495 over the Christina River in Wilmington, DE was repaired with extraordinary speed and competence. This bridge is a vital structure for north / south traffic on the East Coast. Now almost 3 years since the damage was discovered and the bridge repaired, it is a good time to review the situation, analysis, design, restoration, issues and impact on Delaware and the East Coast.

Abstract:

The closing of a major interstate with over 90,000 vehicles per day in Delaware was described as a national issue by U.S. Secretary of Transportation Anthony Foxx. The bridge on I-495 over the Christina River in Delaware was closed on June 2, 2014 due to damage to the substructure caused by a large pile of dirt that was placed on very soft soils adjacent to the bridge. Four of the 37 piers on the 4800 foot long bridge were leaning by as much as four percent, causing deformations to the superstructure of nearly one foot in some places. An emergency project to get the bridge re-opened as soon as possible was immediately initiated. The project had two phases; a temporary and a permanent repair. Due to the extremely poor soil conditions, both repairs were founded on new drilled shafts which went up to 165 feet deep to bedrock. The team was able to quickly respond due to a collaborative effort from designers, contractors and assistance from other states. Supported on temporary towers, the Southbound lanes were opened on July 31st and the Northbound lanes were opened on August 23rd. Permanent repairs are underway.

The presentation covers the various stages of the project in chronological order, from discovery of the problem, through data collection and inspection, design, construction and lessons learned. Topics covered include the cause of the problem, processes instituted to prevent future occurrences, alternatives considered, innovative concepts to get the bridge opened quickly, structure monitoring, challenges faced and Public Relations efforts throughout the project.

Speaker Bio: Barry Benton, PE

Barry Benton, PE is State Bridge Engineer for Delaware. Barry has 24+ years of experience in the Bridge Section, most of it managing and designing bridge replacement and rehabilitation projects in Delaware. Barry serves as a primary voting member for Delaware on the AASHTO Subcommittee for Bridges and has been a member of that committee since 2004. He received a B.S. degree in Civil Engineering from the University of Delaware in 1992.

The Delaware Engineering Society named Barry the 2016 *Engineer of the Year*.

Address: Composites Manufacturing Science Laboratory – Room 106
on the Southeast Corner of Delaware Avenue and Academy Street, on UD Campus in Newark, DE

Directions:

For directions to CCM, please visit the [College of Engineering Map and Directions to UD Engineering Buildings](#) web page and click on the Center for Composites link at the top of the page.

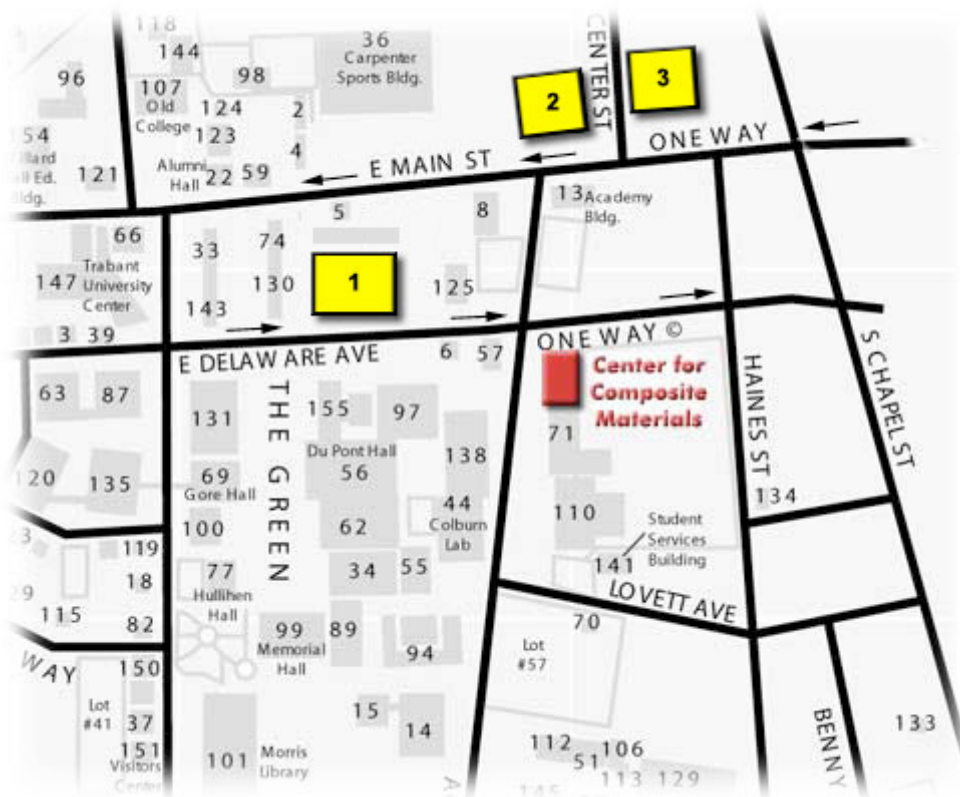
CCM is located at the southeast corner of the intersection of Delaware Avenue and Academy Street. The main entrance is on Academy Street and the reception area is on the second floor.

Parking

- **Lot #1 is located between Main Street and Delaware Avenue, behind the Galleria**
- **Lot #2 is located at the intersection of Main and Academy Street**
- **Lot #3 is located off of Main Street, between the Center and Choate Street.**

Click here for a [detailed UD parking map](#).

Click here to go to the [Online Map of UD](#).



If you have difficulty finding CCM, please call (302) 831-8149