

NSF-Funded RAPID Facility Available for Natural Hazards Reconnaissance

The NHERI Natural Hazards Reconnaissance facility, known as the RAPID equipment facility, is headquartered at the University of Washington (UW), Seattle, WA. Funded by a National Science Foundation (NSF) award, it has a mission to provide investigators with equipment, software, and support services needed to collect, process, and analyze perishable data from natural hazard events. The facility is directed by Joe Wartman, Professor of geologic hazards in the College of Civil and Environmental Engineering at the UW. “After 2 years of site planning, equipment commissioning, and user training, the RAPID facility is now supporting reconnaissance field missions. Our state-of-the-art instrumentation portfolio will enable investigators to conduct next-generation natural hazards and disaster research, with the ultimate goal of reducing the adverse impacts of these hazards and to improving community resilience,” Wartman said.

“Anyone and everyone can use the equipment for natural hazards research, including teams from consulting firms and professional societies,” said Jake Dafni, Site Operations Manager. “As an NSF-funded outfit, however, we do prioritize users on NSF awards if there are multiple requests for the same equipment.” The facility offers equipment for laser scanning, surveying, digital imaging, data visualization, and computing. It includes unmanned aerial systems and backpacks with natural hazards reconnaissance essentials.

The RAPID also has specialized tools for performing site characterization, ground investigation, coastal monitoring and investigation, and social science data collection. Most of the RAPID equipment is intended for field deployment to regions impacted by natural hazards throughout the world and at experimental research sites, such as the facilities in the NHERI network. Already, laser scanning and thermal imaging equipment have been deployed with NSF-sponsored teams from Louisiana State University and Virginia Tech, which are investigating river erosion and displacement of geomaterials from Hurricane Harvey in Texas (award number CMMI-1822307). Also, Schmidt hammers have been deployed in Oregon with investigators from Oregon State University to use on the ODOT SPR809 project, Predicting Seismic Induced Rockfall Hazard for Targeted Site Mitigation.

To facilitate team communication, field data collection, and data transfer to DesignSafe, the RAPID developed a custom mobile application called the RApp, which is installed on field tablets provided by the RAPID. DesignSafe is the web-based research platform of the NHERI Network that provides the computational tools needed to manage, analyze, and understand critical data for natural hazards research. The RAPID also provides equipment at the

University of Washington headquarters for data visualization, data processing, and computing.

The NHERI RAPID facility is funded by NSF award No.1611820 and represents a collaboration between UW, Oregon State University, Virginia Tech, and the University of Florida. Visit <https://rapid.designsafe-ci.org/> for more information.

Boral Resources Marketing Fly Ash from Monofill

Boral Resources has commenced harvesting and making available approximately 2 million tons (1.8 million tonnes) of high-grade Class F pozzolan from a fly ash monofill in central Pennsylvania. The fly ash was produced by a coal-fueled generating station in the 1980s and 1990s, with the material stored in a covered dry stack on a 30 acre (12 ha) site.

In preparation for harvesting and marketing the fly ash, Boral Resources sampled and tested the materials comprehensively. Samples were drawn from boring locations throughout the monofill and evaluated for chemical composition, carbon content, loss on ignition, particle size distribution, fineness, organic impurities (ASTM C40/C40M), foam index, and adsorption.

Foam index tests show that the ash’s adsorption of air-entraining admixtures is extremely low—making the harvested ash particularly suitable for applications requiring freezing-and-thawing resistance. Chemical and physical analyses of a boring composite sample of the fly ash were also performed to assess it against both the ASTM C618 and AASHTO M 295 standard specifications for coal fly ash and raw or calcined natural pozzolan for use in concrete. The sample met or exceeded the requirements of both standards.

An on-site processing plant is used to dry and beneficiate the harvested fly ash.

DFI Educational Trust Awards Scholarships

In 2018, the Deep Foundations Institute (DFI) Educational Trust, the charitable arm of DFI, awarded 20 scholarships totaling \$52,500 to students pursuing careers in civil and geotechnical engineering. Recipients and scholarships included Rocky Howard, Texas A&M University, and Martin Wallace, University of Missouri-Columbia, Thomas J. Wysocky Civil Engineering Scholarship (\$5000 each); Nicolet Chovancak, University of South Carolina, John O’Malley Civil Engineering Scholarship (\$5000); Tyler Kleinsasser, South Dakota School of Mines and Technology, First Francis Gularte Scholarship (\$2500); Sara Magallon, Montana Tech, Michael L. Condon Civil Engineering Scholarship (\$5000).

The funding for the 2018 DFI Educational Trust General Scholarships (\$2000 each) came from the Charles J. Berkel Memorial Scholarship Fund. The recipients included Keenan

Brekke, California Polytechnic State University-San Luis Obispo; Mindy Castle, South Dakota School of Mines and Technology; Hannah Covey, South Dakota School of Mines and Technology; Nicholas Duda, University of Kentucky; Sarah Elder, Portland State University; Roger Knittle, Bucknell University; Zorana Mijic, University of California-Berkeley; Deniz Ranjpour, Tufts University; Brandow Rojas, The New York City College of Technology; Angela Saade, Virginia Tech; Anibal Santos, University of Arkansas; Matthew Sylvain, University of North Carolina-Charlotte; Forrest Walker, Texas A&M University; Jason Wright, University of Georgia; and Connie Zehms, South Dakota School of Mines and Technology.

The DFI Educational Trust manages 16 scholarship programs funded by endowments, donations, and fundraising events. Since 2006, the Trust has awarded \$925,000 in scholarships to more than 250 students studying at colleges and universities across the United States and the Province of Ontario, Canada. Visit www.dfitrust.org for more information.

iQ Power Tools Partners with Sphere 1

iQ Power Tools, manufacturer of premium power tools with integrated dust collection systems, has joined Sphere 1, a national cooperative of independent tool, fastener, and concrete accessory distributors. “iQ Power Tools are unique and really bring something exclusive to our members. The firm’s proprietary line of dry saws with integrated dust collection prompted our board to create a ‘Power Equipment & Silica Collection’ category specifically for them. After a six-month vetting process and learning about iQ’s commitment to training and safety, we believed it was a perfect fit as one of our Preferred Suppliers,” said Rob Moe, President of Sphere 1. Sphere 1 is a cooperative of tool, fastener, and concrete accessory distributors, working together to achieve competitive and sustainable advantages in the marketplace. By partnering with preferred suppliers such as iQ Power Tools, the cooperative provides members with enhanced vendor programs and education.

Technology Forum 45:

Wednesday, February 13-15, 2019
Hilton La Jolla Torrey Pines, La Jolla, CA

Registration now open!



Strategic
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Concrete 2029 Workshop
“Implementing Technology and Innovation”
Wednesday, February 13, 8 am – 12 pm

Main SDC Technology Session
Thursday, February 14, 8 am – 5 pm
Friday, February 15, 8 am – 12 pm

Save the Date

Details at: www.ConcreteSDC.com

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