

## State News for NSPE Members

### Engineering Students Still Learning from Collapse of World Trade Center

Twenty years later, engineering students continue to learn from the structural factors that contributed to the collapse of World Trade Center buildings following the airplane impacts on 9/11, according to *ASU News*.

"The World Trade Center was a brilliant design," said Barzin Mobasher, an Arizona State University civil engineering professor who includes a section on the collapse as a learning tool in his upper-level undergraduate course in design of steel structures.

"It was a marvel given the resources, boldness, confidence and optimism of the engineers who designed and built it. The building worked." Mobasher said. "It was the pride of New York, and rightfully so."

But engineers aren't prescient, and designing around a possible terrorist attack by commercial airliners wasn't built into the WTC safety package. Acknowledging that design engineers can't predict every possible scenario that could have impact on any structure, Mobasher asserts that future engineers need to assess possible derivations and consider possible failures at each point in the design process.

"We study the lessons we learned in terms of the design of structures," Mobasher said of his course content. "The forensic analyses from the WTC are a window to the importance of evaluating all potential modes of failure."

[Read more.](#)

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### Helium Drilling Coming to Northeastern Arizona

Desert Mountain Energy, based in Vancouver, British Columbia, plans to drill for helium in northeastern Arizona, according to the [Journal of Petroleum Technology](#). Helium, used for wide-ranging processes including welding, the cooling of MRI

machines, microchip manufacturing, and rocket launches, is expensive and supplies are dwindling.

Arizona's Holbrook Basin historically has been a significant source for the element, and Desert Mountain has found promising signs of reserves there. In March, the company purchased 40 acres in the central part of the basin, where it plans to build a helium processing facility in late 2021, in addition to a solar plant for green power generation.

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## Car Electrification to Begin in New Production Facility in Arizona

A company that builds car electrification kits plans to install a new head office and production center in Gilbert. Zero Electric Vehicles, currently based in Tempe, says the move to Gilbert will bring 300 EV jobs to the area, according to [ABC-15](#).

The new 103,000-square-foot production space will facilitate the creation of EV conversion kits for vehicles that currently run on gasoline, the station reports. The company also plans to eventually build its own electric vehicles. EV advocates in Phoenix hope the metro area will become a hub for electric vehicle production.

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## State Licensing Board Meeting

The Arizona State Board of Technical Registration will hold its next meeting on **Tuesday, September 28**. The meeting agenda can be accessed [here](#).

Individuals that want to attend the meeting remotely must make a request in advance and are advised to read the meeting agenda prior to making a request. Contact Kurt Winter at [kurt.winter@azbtr.gov](mailto:kurt.winter@azbtr.gov) if you're interested in attending remotely.



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## **Anti-Licensing Forces Miss the Point**

Extreme anti-licensing bills have popped up in numerous states and are posing a threat to the rigorous and established professional standards followed by PEs, architects, and others who design and construct the built environment, [according to an op-ed in The Hill](#).

Lawmakers calling for these extreme measures don't differentiate between barbers and manicurists, for example, and PEs and architects, say Tom Smith, executive director of ASCE, and Michael Armstrong, CEO of NCARB. "In their absolutist free-market view, reflected in the language of their model legislation, a visit to a barbershop or beauty salon should be treated the same as designing a bridge or water treatment plant."

The legislative proposals range from measures that [would eliminate licensing entirely](#) to so-called "Universal Licensing" bills that would require states to accept licenses from any state regardless of whether the out-of-state license had the same level of qualifications behind it.

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## **NSPE Calls for PE Role in AI Risk Management**

To protect the public from the potential dangers of artificial intelligence applications, NSPE is calling for the involvement of licensed professional engineers in the AI development process.

NSPE's [recommendations were submitted](#) to the National Institute of Standards and Technology in response to NIST's request for input on an artificial intelligence risk management framework. The recommendations advocate for professional engineers or certain certified individuals to be included within the risk management framework, which covers all levels of development and implementation.

"This individual would be responsible for making decisions related to protecting the public, including those who would use or potentially be affected by an AI application," wrote NSPE President Rick Guerra, P.E., F.NSPE. "Oversight responsibility should include having the authority to approve or reject the process, methodology, or other characteristics of the specific AI project. Having a credentialed individual to ensure these considerations are made can reduce risk that an artificial intelligence application will fail."

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## Meet the 2021 Scholarship Winners

The [NSPE Education Foundation](#) recently awarded several scholarships to support talented students pursuing engineering. Meet the 2021 winners:

**Markie Ash**, of Waupaca, Wisconsin, is winner of the [Auxiliary Legacy Scholarship](#) and the [George B. Hightower, P.E. Fellowship](#). Ash is studying civil engineering with a structural emphasis at University of Wisconsin-Platteville. The \$2,500 auxiliary scholarship is awarded annually to a female undergraduate entering, or continuing, her junior year of a four-year ABET-accredited engineering program. The \$3,000 Hightower Fellowship is awarded annually to an engineering undergraduate or graduate student who is enrolled in, or graduated from, an ABET-accredited engineering program.



**Justin Sivasothy** is this year's recipient of the [Maureen L. and Howard N. Blitman, P.E., Scholarship to Promote Diversity in Engineering](#). The \$5,000 scholarship is awarded to a high school senior from an ethnic minority going into an ABET-accredited engineering degree program at a four-year college or university. Sivasothy, of Sugar Land, Texas, is attending the University of Texas at Austin.

The \$5,000 [Steinman Scholarship](#) has been awarded to five students studying in ABET-accredited programs this academic year. **Michael Kadus** (Chicago, Illinois) is studying industrial engineering at Purdue University. **Robert Schneider** (West Coxsackie, New York) is studying civil engineering at Clarkson University. **Annabel Sharnowski** (Novi, Michigan) is studying mechanical engineering with a minor in electrical engineering at the University of Michigan. **Noah Struck** (Alexandria,

Minnesota) is studying civil engineering at the University of Minnesota-Twin Cities. **Jacob Witlin** (Ellicott City, Maryland) is studying fire protection at the University of Maryland.



FROM LEFT TO RIGHT: MICHAEL KADUS, ROBERT SCHNEIDER, ANNABEL SHARNOWSKI, NOAH STRUCK, AND JACOB WITLIN

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## Nominations Open for Federal Engineer of the Year Award

Honoring the commitment of federal engineers to innovation and service is the hallmark of the [Federal Engineer of the Year Award](#) . Nominations for the award, which attracts participation from more than a dozen federal agencies, are open until **October 31**.

The FEYA ceremony is scheduled for February 24, 2022, at the National Press Club in Washington, DC. Tickets will be available for sale in January. [Apply or nominate a worthy engineer](#) .

### The 2021 Federal Engineer of the Year

Major Monica Pickenpaugh, Ph.D., P.E., of the US Air Force, was named NSPE's 2021 Federal Engineer of the Year Award winner during a [virtual awards event](#) in February. As US Forces Korea's chief of construction, she directed \$5.7 billion of funded construction in the Republic of Korea. As part of a sharing agreement with the US, the construction program supports USFK commanders' defense efforts through critical projects.



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