

State News for NSPE Members

Upcoming MATHCOUNTS Event—Volunteers Needed!

The MATHCOUNTS state competition will be held on **Saturday, March 19**, using a hybrid model. Students will compete in-person at a one of the following regional locations:

- Fairbanks area students will meet at the University of Alaska-Fairbank College of Engineering.
- Anchorage area students will meet at the University of Alaska-Anchorage College of Engineering.
- Juneau area students will meet at the RESPEC offices in Juneau.

Students will participate in unofficial countdown rounds at each location. Please contact Sophia Lee at 907-727-0627 if you're interested in volunteering to help with grading.

Statewide Board Elections and Meeting

The State ASPE Board holds elections and transitions new officers every March. We are currently looking for a President Elect for the 2022-2023 year. The President Elect is elected for a three-year cycle: President Elect in year one, President in year two, and Past President in year three.

We are also looking for Chapter Directors in Juneau, Anchorage, and Fairbanks to serve as liaisons between the chapters and the state board. Please send nominations to Jeanne Bowie (jeannebowie@kinneyeng.com).

Annual Meeting in April

The Board will hold its annual meeting near the end of April. Contact Jeanne Bowie if you are interested in attending.

Celebrating Engineers Week in Alaska!

Engineers and the work we do were celebrated throughout Alaska in February and during Engineers Week: February 20-26, 2022.

Juneau

Juneau engineers held a virtual celebration of their award winners on February 16.

Outstanding Engineer of the Year: **Mark Sams**

Outstanding Project of the Year: **PND/City and Borough of Juneau** for Don D. Statter Harbor Improvements

Scholarship Winners

- **Nancy Liddle** (Thunder Mountain High School), ASPE & AEEF Statewide Scholarships
- **Marina Lloyd** (Juneau-Douglas High School), Juneau Chapter Scholarship
- **Samuel Holst** (Juneau-Douglas High School), Juneau Chapter Scholarship

MATHCOUNTS Winners

Highest Individual Score: **Caden Morris** (Floyd Dryden Middle School)

Winning Team: Floyd Dryden Middle School—**Dan Degener, Brayden Capizzi, Caden Morris,** and **Tyler Oudekerk**

Anchorage

Anchorage engineers participated in numerous outreach events as part of this year's celebration, including making presentations in K-12 schools, student competitions, and "Journey into Engineering" presentations at UAA. The week culminated in a virtual banquet which celebrated many accomplishments, including MATHCOUNTS winners, scholarship recipients, Engineering Excellence awards, and Engineer of the Year.

Engineer of the Year: **Olga Stewart** (nominated by SWE, employer Geosyntec Consultants)

Engineering Excellence: **RESPEC/United States Air Force/City of North Pole** for Moose Creek safe water system

Scholarship Winners

Toya Takahashi (West High School), Anchorage EWeek Scholarship

Alek Helgesen-Thompson (Family Partnership), Anchorage EWeek Scholarship

Shane Morris (Unalaska City School), Anchorage EWeek Scholarship

Hannah Goldman (Frontier Charter/South High School), Anchorage EWeek Scholarship

Aaron Reno (Bartlett High School/Alaska Middle College), Anchorage EWeek Scholarship

Gerwin Mateo (Unalaska City School), Anchorage EWeek Scholarship

Quinten Cox (Soldotna High School), Anchorage EWeek Scholarship

MATHCOUNTS Winners

Highest Individual Score: **Xiling Tanner** (Kenai Middle School)

Winning Team: Rogers Park Elementary—coach **Rachel McNeil**, team members **Kevin Zhang, Brooke Peng, Cameron Posey, and Luke Olmos**

Fairbanks

UAF Fairbanks engineers held an in-person banquet on February 26 to celebrate their award winners.

Student Engineer of the Year. **Cate Whiting** (Graduate Student at UAF, Intern with RESPEC)

Young Engineer of the Year. **Emily Winfield, P.E.** (Design Alaska)

Professional Engineer of the Year. **Dan White, Ph.D., P.E.** (UAF)

Scholarship Winners

Daniel Doudna (Interior Distance Education of Alaska), Fairbanks Chapter Scholarship

Emma Beeler (UAF), Hanneman Travel Scholarship

MATHCOUNTS Winner

Highest Individual Score: **Wyatt Beardsley**

Inspiring the Next Generation of Professional Engineers

By Craig Bledsoe, P.E., CSP

Of the many things that professional engineers do during Engineers Week every year is to engage with the public. One of the most rewarding experiences is to reach out to eager students who are ready and excited to learn about the STEM professions at a young age. I was asked to engage with the entire fifth-grade class of Bear Valley Elementary School (on the Anchorage Hillside) to demonstrate Amateur Radio communications as relayed through homemade repeater satellites operating in various orbits around the Earth.

Engineering in Action

On March 3, I visited the classrooms of teachers Priya Lindeen and Kylie Lake and was introduced to throngs of students who were looking forward to talking to ham radio operators across the state of Alaska via outer space. Due to the orbital parameters of our satellite of choice, SO-50, the plan was to escort the crowd of students out to the north-facing parking lot of the school where they could hear and speak to Amateur Radio operators through an ordinary VHF/UHF walkie-talkie. This modest handheld radio was connected to a special high-gain directional Arrow antenna pointed toward the satellite as it traversed the heavens at approximately 18,000 miles per hour taking 10 minutes to race from horizon to horizon.

During the one hundred minutes between satellite passes, we returned to the classroom where I summarized the physics and mathematics needed to calculate the orbits of a variety of objects ranging from Low Earth Orbiting (LEO) satellites such as SO-50 and Elon Musk's Starlink constellation up to huge satellites in 24-hour geostationary orbits like those used for Dish Network's direct TV broadcasts or weather observatories focused over a single location on planet Earth. I played the AMSAT student slide show, and we talked about how ham radio operators with STEM interests—just like our Bear Valley fifth graders—have created small LEO CubeSats in their home workshops for space-available launch opportunities into the void beyond our atmosphere.

Following our classroom session, we all returned to the Bear Valley school parking lot where we conducted our second and final satellite pass of the school day. During both passes students using the KL7H (my callsign) portable radio station heard and spoke with a variety of ham radio stations relayed by SO-50 including AL7ID in Two Rivers near Chena Hot Springs, KL7XJ in Soldotna, KL7G at the Anchorage Amateur Radio Club's Radio Science and Operations Center (RSOC) near Kincaid Park, NL7S and KL2S in Wasilla, NL7B in Fairbanks, and many more.

Mission Accomplished

At the end of our adventures dozens of kids approached me and said that they wanted to learn more about amateur radio and get involved with all of the exciting things that professional engineers do on a daily basis. Both of the fifth-grade teachers have my contact information, plus we looked up the websites for ham radio training and FCC licensing offered by several volunteer organizations statewide.

It was a great day for reaching out to the next generation of professional engineers. I felt privileged to have been able to do my part to help these kids learn about STEM careers that will welcome and challenge them in the years to come.





Governor Dunleavy Announces Alaska Sustainable Energy Conference

Governor Mike Dunleavy announced Alaska's energy independence as a key focus

of the inaugural Alaska Sustainable Energy Conference (ASEC) in Anchorage this May. The conference will bring together energy experts and pioneers to showcase how Alaskans and communities around the world are harnessing emerging energy technologies.

"The Alaska Sustainable Energy Conference is a chance to join visionaries, researchers, and policymakers from all corners of the globe to explore the technologies that will change everything," Governor Dunleavy stated in [a news release](#). "From the fast tides of Cook Inlet, to the vast, untapped deposits of critical minerals needed to power the coming energy revolution, to the renewable microgrids that dot the far north, the Last Frontier is the ideal location to unveil the future of sustainable energy."

ASEC will be held from **May 24-26** at the Dena'ina Center, featuring more than 50 expert speakers to address specific themes including innovations in distributed energy, the evolution of the modern power grid, and the future of energy. Access conference and registration information [here](#). Early bird registration is available until March 25.

Leading up to the event, the Alaska Center for Energy & Power at the University of Alaska Fairbanks is currently hosting a pre-event virtual workshop series. The "Alaska Energy Futures" workshops cover topics like tidal energy, hydrogen exports, electric airplanes, and much more. Registration for these free virtual workshops can be found [here](#).

Stay up to date on legislative issues through the [NSPE Advocacy Center](#).

Meet the 2022 Federal Engineer of the Year



Robert Zueck, Ph.D., P.E., was named NSPE's [Federal Engineer of the Year](#) during a [virtual awards event](#) on February 24 for his discoveries and contributions in the engineering field. The Federal Engineer of the Year Award, sponsored by the Professional Engineers in Government, honors engineers employed by a federal agency that employs at least 50 engineers worldwide.

Zueck works in the US Department of the Navy's Naval Facilities Engineering Systems Command (NAVFAC), Expeditionary Warfare Center at Port Hueneme, California. He is heralded for applying his vibration research to military defense projects for which engineers can now design beyond the speed, agility, and stealth limitations of many military sensors, weapons, and platforms.

“Every success for me has come out of the hard teamwork of many fellow engineers and scientists,” Zueck stated. “I thank them all—particularly those who provided valuable constructive criticism of my rather unique research results.”

In a basic research project conducted several years ago, Zueck discovered how geometrically complex vibrations initiate, grow, and sustain themselves, often limiting higher performance for many combat systems. He used this new vibration knowledge to improve the Expeditionary Warfare Center’s modeling capability for designing, analyzing, and deploying towed sensors, ship moorings, sub-sea arrays, and other slender naval structures.

“This basic science discovery could be very useful for modeling, simulating, and testing in many other fields of engineering and science,” he said.

[Read more.](#)

Mark Your Calendars: 2022 Professional Engineers Conference



August
1-3
2022
Philadelphia, PA
Sheraton Philadelphia
Downtown

The 2022 NSPE [Professional Engineers Conference](#) will bring together professional engineers across disciplines from August 1–3, in Philadelphia at the Sheraton Philadelphia Downtown. Registration for the conference opens in April.

PECON attendees can access specialized content from experts as they discuss issues and trends impacting the profession, develop power skills and life skills not taught in school, and advance their careers by expanding their expertise and preparing for future developments in the industry.

The seventh annual [PE Day](#) will coincide with the conference’s culmination on August 3. These two events allow PEs to join their peers in celebration of the profession and advocacy for licensure.

NSPE will continue to monitor health and safety guidelines while we proceed toward hosting this in-person event.

2022 NSPE Student Scholarships Available

Students can apply for the 2022 NSPE Education Foundation scholarships through a new [online submission platform](#). The following scholarships have an **April 1** application deadline:

The [Maureen L. and Howard N. Blitman, P.E., Scholarship to Promote Diversity in Engineering](#) is awarded annually to a high school senior from an ethnic minority who has been accepted into an ABET-accredited engineering program at a four-year college or university.

The [Auxiliary Legacy Scholarship](#) is awarded annually to a female undergraduate entering or continuing their junior year of a four-year ABET-accredited engineering program.

The [Steinman Scholarship](#) is awarded annually to undergraduates entering or continuing their junior year in a four-year ABET-accredited engineering program.

The [George B. Hightower, P.E. Fellowship](#) is awarded annually to a current engineering undergraduate or graduate student who is enrolled in, or graduated from, an ABET-accredited engineering program.

Coming soon! The [Swadesh and Om P. Popli, P.E., P.L.S. Scholarship](#) will be a multi-year scholarship, providing \$5,000 each year for the recipient's four-year education. Applicants must be a female high school senior from an ethnic minority pursuing a degree in engineering at an ABET-accredited program.

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