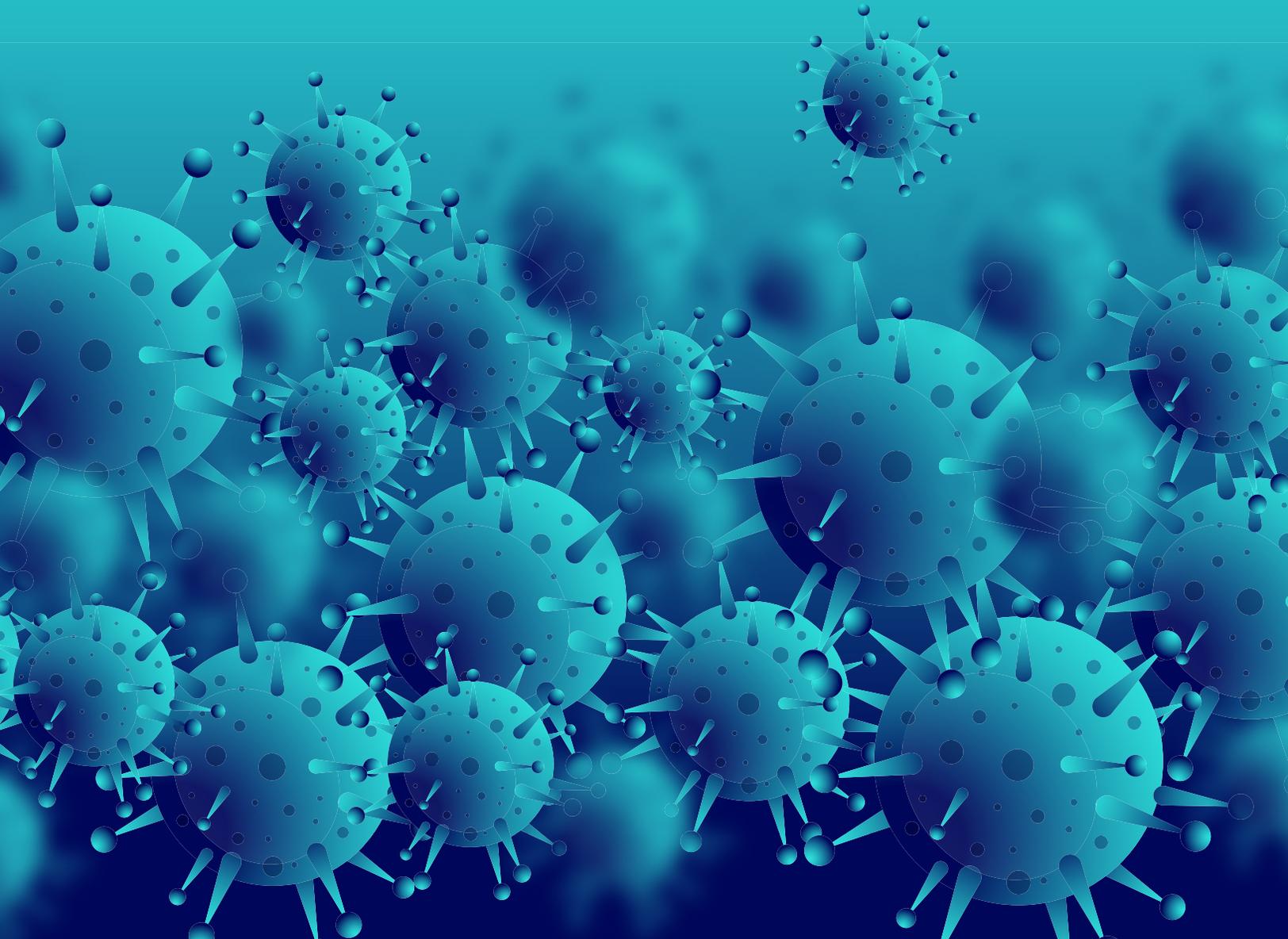


THE DURHAM SCHOOL

HEADLINES

SUMMER 2020

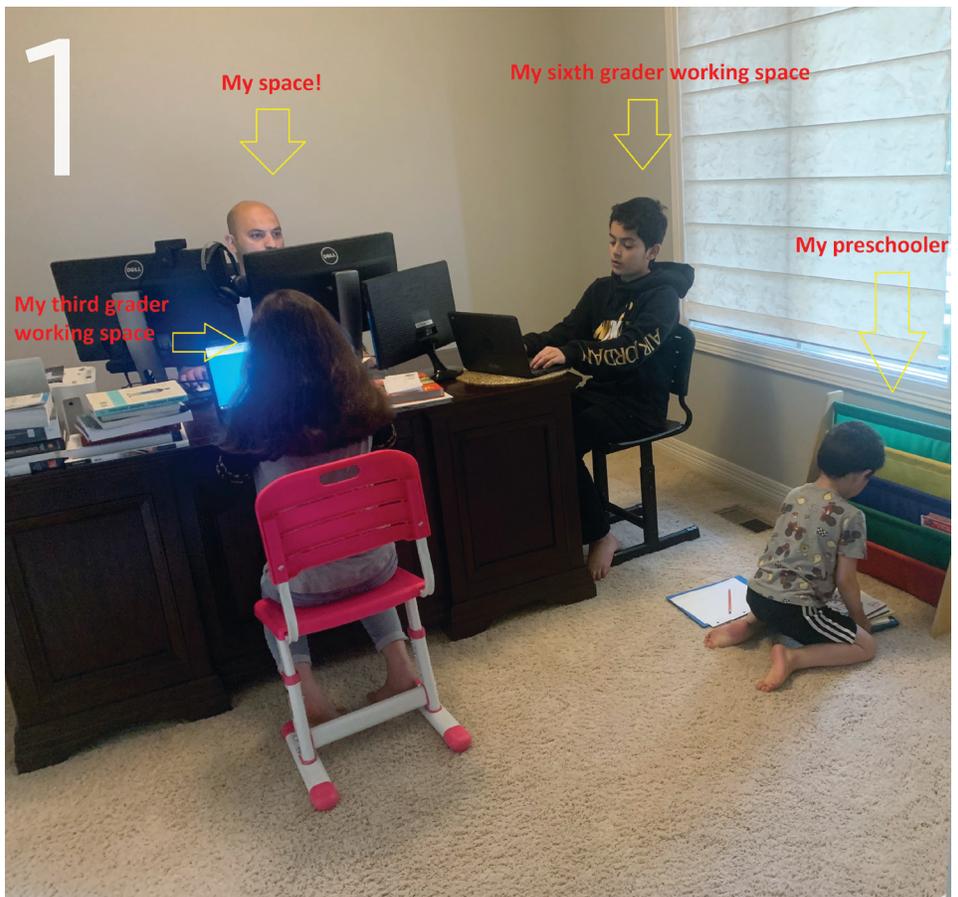


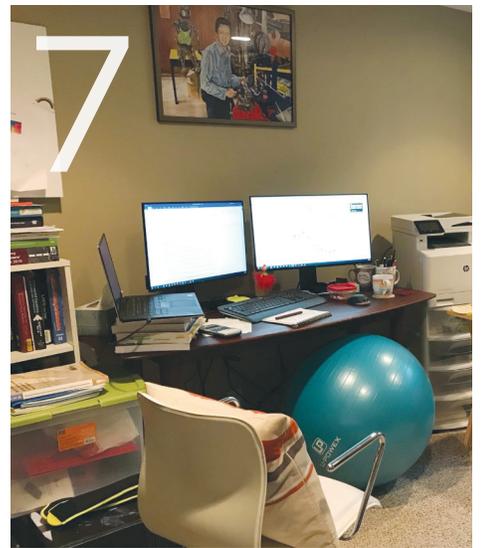
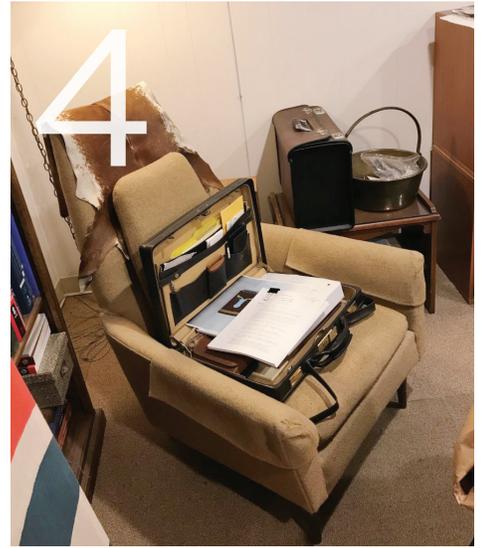
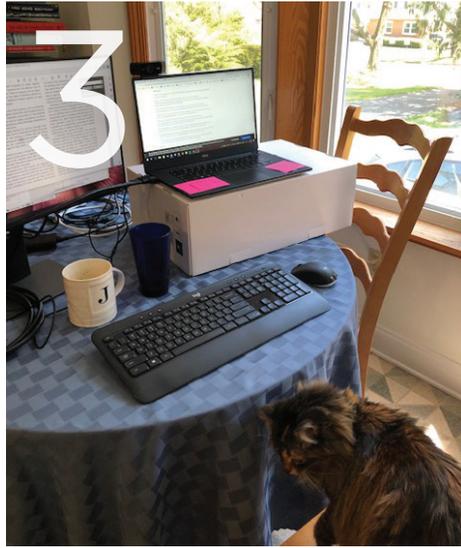
COVID-19 — WORKING FROM HOME

The COVID-19 pandemic has caused so many of us to alter the way we conduct our daily lives, including the work done by faculty, staff and students in The Durham School.

Think back, not so long ago, to your old get-to-work routine. Wake up. Shower. Coffee. Drive. Arrive at your office and start your day. Back in those days many of us pictured a life working from home, ticking off the many benefits. No commute! Pants optional! Pets! Now that we've gotten what so many of us wished for, how are we at the Durham School faring. Well, if these pictures are any indicator, we are absolutely rocking it (pandemic style).

1. Desk space shared with the most offspring.
Winner: Dr. Fadi Alsaleem
2. As far away from the kids as legally possible (garage office).
Winner: Brandon Kreiling
3. Show us your cat! CAAAAT!
Winner: Dr. Jennifer Lather
4. Comfiest chair.
Winner: Dr. Terence Foster
5. Actually dressed appropriately for work.
Winner: Dr. Iason Konstantzos
6. Boss is always watching.
Winner: Dr. Kelli Herstein
7. Is that Christopher Walken?
Winner: Dr. Ece Erdogmus Skourup
8. Check out that basement view.
Winner: Dr. Erica Ryherd
9. Caught napping on the job. Employee of the month.
Winner: Dr. Moe Alahmad
10. Bed n' office inception, feat. Zoom backgrounds. Winner: Mary Anne Phillippi





REMINDER

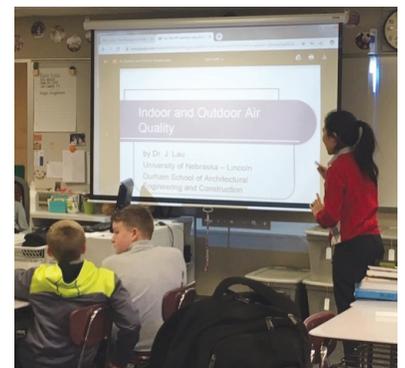
Let's be real; life before the pandemic hit was no mental health utopia. Most of us were rushing from home, to work, to the kid's daycares/schools, after-school events, night classes, weekend soccer games, Saturday weddings, Sunday baby showers, and squeezing in that trip to the dentist that's 7 months overdue. It was 24/7 everything, and even then, there wasn't enough time. Suddenly, we find ourselves in a much slower world, but it comes with one little catch; a global pandemic is holding our way of life hostage with no sign of letting go anytime soon. This takes its own unique toll on our mental health. Sure, we aren't driving through Chik-Fil-A to pick up dinner on the way home from work because we didn't have time to go to the grocery store over the weekend and only have a bottle of mustard and an expired bag of Spring Mix at home. But that's suddenly the least of our concerns. People are dying. Jobs are disappearing. Schools are closed. Our government is struggling. We don't know what life looks like in one month, let alone six, and that's making it difficult to cope. With so much uncertainty about what the future looks like, how exactly do we focus, and what do we focus on? While life priorities will look different for everyone, here are some work at home Guiding Principles, courtesy of the Canadian Federal Government.

1. You are not "working from home," you are "at your home, during a crisis, trying to work."
2. Your personal, physical, mental and emotional health are far more important than anything else right now.
3. You should not try to compensate for lost productivity by working longer hours.
4. You will be kind to yourself and not judge how you are coping based on how you see others coping.
5. You will be kind to others and not judge how they are coping based on how you are coping.
6. Your team's success will not be measured the same way it was when things were normal.

OUTREACH

The Durham School Outreach Program had busy, fulfilling winter and spring seasons for 2019 and 2020, impacting over 700 student lives. Our outreach program sparked passion for an education at DSAEC in events both intimate and large, with students as young as 10 years old to students wrapping up their senior year in high school. More than 200 young girls were inspired to build at our booth at the Introduce a Girl to Engineering Day event (top picture). Bridges were built both literally and figuratively at Discover Engineering Days with Dr. Phil Barutha (bottom left), and budding engineers were further encouraged in their pursuits for a cleaner world with purer air thanks to Dr. Josephine Lau at the St. James Engineering Club (bottom right).

Much like our classrooms looked vastly different in the unprecedented world of the Covid Pandemic, so too does our outreach program. As we shift into summer gear, our outreach is going online to reach the students where they are; at home. Utilizing new tools like Google Classroom to provide free, easy access to all students, our lesson plans provide ten weeks of Architectural and Construction Engineering education. As a prime example of doing what engineers do best, the problems most families at home are experiencing (financial stress and access to supplies), are overcome by providing creatively designed projects using common household items and free software. COVID-19 may have changed the way the world works, but our school full of professional problem solvers is still committed to inspiring the next generation of creative thinkers.



FACULTY FOCUS

College of Engineering awards faculty members

Congratulations to David Yuill and Marc Maguire on receiving honors at the annual College of Engineering Awards Reception, which was held virtually this year on Zoom. Yuill was presented with the College of



Engineering Faculty Research & Creative Activity Award that recognizes individuals for activities associated with investigation/experimentation aimed at the discovery and/or interpretation of facts, as well as the development of creative works or new products.

Maguire was chosen by eSAB/NESCO for the Holling Family Distinguished Teaching/Advising/Mentoring Award that recognizes faculty for effectiveness as an advisor and mentor, as well as effectiveness as a classroom teacher.

The Durham School is pleased to welcome Tony Roebuck

Tony Roebuck started his career path as a union-trained sheet metal apprentice giving him a unique perspective in the construction industry. As a craftsman, he worked as a fabricator in metal shops, on major commercial projects as an installer and technician, and in design as a sheet metal CAD/BIM engineer. He is joining the Durham School in the fall as an Assistant Professor of Practice.



Roebuck's experience includes working as an estimator, project engineer, preconstruction manager, business developer, project manager, and various senior management positions including chief operating officer (COO). His greatest passion is sharing his depth and breadth of knowledge as inspiration for others to consider careers in the construction industry.

Notable projects on which he served include the UCHealth Highlands Ranch Hospital, Exempla Lutheran Hospital Emergency Department, Swedish Medical Center Burn Unit and UCHealth Poudre Valley Sterile Processing.

Roebuck is currently a Ph.D. student in Organizational Development (OD) and completed a master of science in Real Estate and the Built Environment, a bachelor of science in Business Administration with a concentration in Project Management, and an associate of science in Computer Aided Drafting and Design. He also served in the United States Marine Corps.

GRANTS

Philip Barutha received a \$161,477 grant from Construction Industry Institute for a project titled, "Quantitative Validation of Deployment of Industrial Project Delivery."



Kevin Grosskopf received a three-year, \$625,000 grant from the Department of Energy Building Technologies Office for a project, titled "Advanced Building Construction with Energy Efficient Technologies & Practices (ABC)."

Kevin Grosskopf, David Yuill and Jennifer Lather received a four-year, \$1.2 million grant from the Department of Energy National Renewable Energy Laboratory (NREL) for a project titled, "Residential Buildings Subject Matter Expert Technical, Outreach and Research and Development Support."



David Yuill received a one-year, \$150,000 grant from the University of California-Berkeley National Laboratory for a project titled, "Evaluation of Fault Prevalance in Commercial Buildings."

Hawkins Construction, a Durham School industry partner, had its \$352 million bid accepted by the State of Nebraska and was awarded the state's largest highway project. The three-year project is constructing a South Beltway that will link two highways — Nebraska 2 and U.S. 77 — on the south side of Lincoln.

Kevin Grosskopf recently received a grant from the Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) to produce a white paper titled "Integrated Project Delivery for Mechanical Contractors." This paper will provide an overview of the IPD process and a guide for mechanical contractors to get them interested in the IPD project delivery method. Grosskopf is working with Matt Barrows and Phil Barutha on this paper.

FACULTY FOCUS

Engineering faculty Terry Stentz and Kelli Herstein have worked with the University of Nebraska Medical Center (UNMC) and its biocontainment unit especially studying the effects of long missions on U.S. Air Force (USAF) personnel sent to retrieve patients exposed to highly infectious diseases like Ebola, and the performance of the USAF airborne transport isolation system (TIS).

“The main objective for the USAF was to have someone from the outside, like the UNMC biocontainment research team who are experts in biocontainment environments and infectious disease medicine, evaluate the process and TIS design for performance and make suggestions and recommendations for how the equipment and processes could be improved,” said Stentz, associate professor of construction engineering and management.

Both Stentz and Herstein are industrial engineers and occupational health scientists with faculty appointments in the Department of Environmental, Agricultural, and Occupational Health Sciences in UNMC’s College of Public Health. Both have teaching and research experience in human factors, ergonomics and safety, with areas of expertise in work environments like manufacturing, health care, hospitals, construction, and other areas.

UNMC has been at the forefront of many recent outbreaks of highly infectious diseases. In 2014, the UNMC biocontainment unit treated patients infected with Ebola, and in February, the biocontainment unit began treating patients infected with COVID-19.

“Transporting highly infectious patients to Omaha or anywhere else they can be treated would be a huge undertaking in a high-stress, short notice, long flight, airborne mission,” Stentz said, “even for a military unit.”

“They go at a moment’s notice. If the State Department picks up the phone and says go pick up so and so and bring them back, that’s their mission,” Stentz said. “It’s got some security risk and a lot of operational challenges, but they are ready to go 24/7.”

Herstein, associate professor of practice in construction engineering and management, flew an exercise mission with the USAF Air Mobility Command aeromedical evacuation team aboard a C-17 Globemaster in the summer of 2018. They took off from Joint Base Charleston in South Carolina and landed at Offutt Air Force Base near Bellevue to simulate the transfer of highly infectious patients to Omaha Fire and Rescue for transport to the UNMC biocontainment unit. Then they returned to Joint Base Charleston, unloaded simulated patients, and prepared the C-17 for a different mission and the TIS units for decontamination and evaluation.

“You can do these simulations on the ground, but until you go airborne you really don’t have a complete experience of what an actual mission will be like,” said Herstein. “You can anticipate, but until you go airborne in an exercise scenario, it isn’t as real as it should be.”

During the trip, Herstein talked with the pilots and learned how they adapt to long-haul flights and got an understanding of flight crew alertness, decision making and fatigue management.





Plus, Stentz said, dealing with the TIS is an important factor in how medical personnel react and perform on these types of airborne missions. The TIS is designed to be installed, secured and activated inside the aircraft to keep quarantined people isolated from the rest of the plane while still receiving care by USAF medical personnel in full PPE. Stentz and Herstein analyzed circadian rhythms, the role of alertness and fatigue in decision-making, ergonomic and biomechanical stressors, flight crew and patient safety, and PPE and TIS integrity, among numerous factors.

Stentz and Herstein also helped the UNMC research team identify and recommend areas of improvement in

human-equipment systems, training, and medical crew fatigue performance.

“Everything we did was very well received,” Stentz said. “It confirmed some of what they thought they knew and, I think, we pointed out things that could benefit from continuous improvement, just like any high performance, critical system. In the long run, we think the College of Engineering has a vital role to play in helping to solve military problems, and we want to continue doing research projects like this one.”



The National Offshore Wind Research and Development Consortium selected RCAM Technologies, a U.S. startup company, for its second round of wind research and development technology projects, and the University of Nebraska-Lincoln College of Engineering will play a key role in the \$1.1 million project.

Funding for the two-year project will support the development of a concrete offshore wind turbine foundation that does not require a heavy-lift vessel for installation. The project scope includes design and feasibility assessments of the fixed-bottom structure that would support a 15-megawatt turbine.



Philip Barutha, assistant professor of construction programs in the Durham School, will head up research that will help to develop and determine the feasibility of the assembly process. Working with about 10 percent of the grant's funding, Barutha's team will perform high-level constructability analysis, logistics, and commercial feasibility analysis.

"We may be playing a smaller role in this big project, but this work has the potential to have a great impact on our industry and our nation's energy infrastructure," Barutha said.

"This could give places like the East Coast another economically feasible option for energy that they don't currently have. Right now, there are very few wind turbine

developments off the coast of New York producing energy, and very few in the region as a whole. If we can find economically feasible solutions to provide greener and renewable energy, developers and energy suppliers would have more reason to choose this type of project."

RCAM is dedicated to developing and commercializing innovative land-based wind and offshore support structures using advanced concrete manufacturing technologies.

"We're supporting a U.S.-based startup company, which is creating jobs in a field that is growing. Supporting entrepreneurs in small, innovative businesses is something that is very important."

Along with Nebraska, RCAM's primary partners on the project include WSP USA, NREL, Esteyco and RRD Engineering. NETSCo, Cathie Associates USA, Precast Systems Inc., VSL/Structural, the University of Delaware, Tufts University, and the University of California Irvine will provide advisory and technical support.

A U.S. Department of Energy (DOE) grant is allowing a team of Nebraska Engineering researchers to tackle many projects with the need for quick solutions, including some currently addressing the COVID-19 pandemic.



Many projects will come to a research team of Durham School faculty as part of a four-year, \$400,000 grant through the DOE's National Renewable Energy Laboratory (NREL). The team includes Kevin Grosskopf, professor of construction programs; David Yuill, associate professor of architectural engineering; and Jennifer Lather, assistant professor of architectural engineering.

Rather than having a fixed scope for work, Grosskopf said, this grant allows NREL to submit task orders for multiple quick-turnaround research projects based on an industry need that the team can complete in a short amount of time—some as little as a few weeks. That turnaround can be valuable in forming responses to a pandemic.

“What they’ve been coming to us for in the last few months is COVID-19-related activities,” Grosskopf noted. In recent weeks, the team has worked on two such projects: a shelter-in-place guide and a ventilation study in assisted-living facilities.

The rapid response from The Durham School team could be especially valuable in responding to a potential resurgence of the COVID-19 pandemic in coming months. A potential second wave of infections could strain the healthcare systems in the U.S., creating a greater demand for hospital

beds, especially those in intensive care units, greater than are currently available.

Though NREL has not yet funded such a study, Grosskopf said a possible solution is using prefabricated, modular construction to create shells (or modules) — as is done in the construction of some hotels and apartment buildings — to rapidly create new facilities, some as tall as five stories with as many as 600 beds, on existing hospital sites such as surface or parking lots.

The off-site fabrication of these stackable modular units would condense a typical construction schedule by 30 percent or more, Grosskopf said.

“When you look at a possible second wave that could come this fall or winter, you won’t want to shelter these infected individuals in field tents,” he said, noting that government projections about a second wave show U.S. hospitals could face a shortage of nearly 300,000 intensive care unit beds and another 1.4 million in-patient beds.

“From the time you get the go-ahead to the time you actually move patients into these units could be as little as 30-60 days.”

The manufactured modular units could also be repurposed for energy-efficient, affordable housing after a crisis ends, thanks to better quality control in the build process, said Grosskopf.

“In production warehouses, you start out with basic frames that are fabricated and then roll down the line through work stations, where another part of the building process is completed until you have a finished module,” Grosskopf said. “This allows for better inspection during the process and more rapid turnaround.”

“From the time you get the go-ahead to the time you actually move patients could be as little as 30-60 days.”

Kevin Grosskopf
Professor of Construction Programs

STUDENT SPOTLIGHT

A team of Nebraska architectural engineering students became national champions, taking first-place honors at the American Society of Civil Engineers' (ASCE) Architectural Engineering Institute (AEI) International Student Design Competition (ISDC) on April 22.

It was the first time a Nebraska team has placed first in the overall competition and the Building Integration category.

The Nebraska team, all students in the Durham School, also took first place in Mechanical Systems Design, second place in Structural Systems and earned the award for Outstanding Achievement in Innovation - Building Envelope.

In addition, several industry partners sponsored the competition — Smith Group (first-place Integration), HDR (first-place Mechanical), AEI (first-place Electrical), SGH (second-place Integration), HGA (second-place Electrical), SOM (second-place Structural), and WSP (second-place Mechanical).

The team members, students from Clarence Waters' Team Design AE 8030/8040 course, were: Nathan German and Jennifer Solheim (Mechanical/Acoustics); Noor Albahrani, Adam Hansen, Dalton Rabe and Ben Stodola (Electrical/Lighting); Ali Al Lawati, Nicole Aschoff, Meredith Butler and Nathan Schmidt (Structural).

"We are very pleased to be the national champions of architectural engineering," said Waters, Aaron Douglas Professor of Architectural Engineering. "Nebraska AE is blessed with outstanding students and outstanding industry support to mentor them. Omaha is the best place in the world for AE."

The competing teams were tasked with designing the renovation of War Memorial Hall on the campus of Virginia Tech. The goal was to create a student health, wellness and education hub while maintaining the historic ambiance of the building, which was constructed in 1924.

From the 11 teams that entered the competition, three were chosen as finalists and asked to present their designs at the annual AEI Forum, which was scheduled to take place in Cincinnati, Ohio. With the nationwide shutdown because of the COVID-19 pandemic, teams submitted recorded presentations to the jurors and participated virtually in a question-and-answer session.

Each year, the AEI International Student Design Competition attracts the top architectural engineering undergraduate and graduate students from leading academic institutions that offer architectural engineering degrees. The goal of the annual competition is to provide a unique venue for students to showcase their architectural engineering knowledge and skills. The competition encourages collaboration, research, innovation and peer review.

Projects are judged in building integration, and in one or more of the following four categories: structural systems, mechanical systems, electrical systems and construction. Sponsors provide the funding for the annual competition and this year, AEI instituted First and Second Place named awards in each of the five categories.



STUDENT NEWS & NOTES

Acoustical Society of America Awards Scholarships to Two Durham Graduate Students



The Acoustical Society of America (ASA) awarded scholarships to two Durham School students — Kenton Hummel and Brian Puckett.

Hummel was selected as the 2020 recipient of the Frank and Virginia Winker Memorial Scholarship for Graduate Study in Acoustics. Puckett was selected as the 2020 recipient of the Leo and Gabriella Beranek Scholarship in Architectural Acoustics and Noise Control.



Both of these prestigious awards are granted to one individual each year “who, through personal qualifications and a proposed research experience, is judged to exhibit the highest potential for performing research benefiting some aspect of the science of sound and promoting its usefulness to society.”

AGC Goes to Las Vegas



Student members from Associated General Contractors of America (AGC) attended the 2020 convention in February. Students toured the new Allegiant Stadium, home to the NFL’s Las Vegas Raiders. The tour was organized by Durham School alumnus Paul Dudzinski, who is vice president of operations with McCarthy and sits on the Durham School Construction Industry Advisory Council.

AGC Appoints Officers

In April, the UNL Student Chapter of Associated General Contractors (AGC) conducted annual officer elections on Zoom. The 2020-21 officers are: Nate Ordos, president; Evan Copes, vice president; Terrance Ball, secretary; Ethan Copes, treasurer; Shaun Richardson, social chair; and Ryan Zimmerman, recruitment chair.

AESLAC Selects 2020 Members



The Architectural Engineering Student Leadership and Advisory Committee (AESLAC) has selected its members for 2020: Anna Diederich, Jillian Dlouhy, Isabel Eberspacher, Jake Kumke, Jace Pauli, Marissa Recker, Ben Schnatz, Owen Smyser, Gabe Williams and Aaron Young.

This select group of AE students actively oversees student activities within Nebraska AE and advocates for student concerns through collaboration with AEIAC, the faculty and the industry advisory committee.

AESLAC also coordinates the AE 1010 mentoring program, pairing more than 100 first-year students with industry and student mentors. Each year, they take part in The Durham School Career Fair Host Program, hosting company representatives by helping with their fair set-up and showing them around the campus. They also organize the AE 1000 Channel Mentorship Program and Engineer’s Night Out.

The 2019-20 committee took first place in Canstruction! This community service competition challenges participants to host a canned-goods drive and use the cans to build a structure. After judging, the goods are then donated to our local food bank.



APT Takes Fourth Place



A team of students from the Durham School placed fourth in the Association for Preservation Technology (APT) International Student Design-Build Competition.

This year-long competition is open to student teams interested in historic buildings and structures. The team researched and analyzed a local historic masonry arch then designed and built an arch using historic materials.

After preservation experts evaluated submissions, the Durham School team was one of five finalists invited to attend the APT Annual Conference, held in Miami. There, teams were challenged to build and test a dry-stack masonry arch and were given a set of preservation problems to solve. Finally, they presented their findings at the conference.

The team members were: Tunç Deniz Uludağ (captain), Ahmad Shaoib Amiri, Meredith Butler, Morgan Davis, Tess McCabe and Edward McNamara. Dr. Ece Erdogmus Skourup served as the faculty advisor

CM Students Go to ASC in Reno

In early February, Durham School construction management (CM) students attended the Associated Schools of Construction (ASC) Regions 6 & 7 Student Competition and Construction Management Conference in Reno, Nevada.

Durham students had a great opportunity to gain experience, build networks, and learn by doing. The team also participated in an 18-hour estimating competition in the Concrete Solutions division, sponsored by Sundt Construction.

Team members were: Jack Bourne, Christian Chilton, Hala Fadhil, Travis Feilmeier, Jose Lopez Flores, Garrett Giesler, Kate McChesney and Matt McMahon.

EERI Club Attends SDC

Early this year, the University of Nebraska-Lincoln's Earthquake Engineering Research Institute (EERI) club attended the annual Seismic Design Competition (SDC) in San Diego, California and placed 11th overall among the 46 teams from around the world.



The Nebraska team qualified in fall 2019 to compete from their submission to a request for proposal (RFP) outlining the building footprint and other regulations.

Once accepted, they began designing and constructing a model 20-story, 5-foot-tall balsa wood tower to withstand two consecutive earthquake simulations on a shake table at the competition.

Four Nebraska EERI members attended the SDC, where over four days entries were judged on construction, architectural and structural design, how the tower actually performed, and on posters and formal presentations highlighting their designs.

Team members are: Ryan Ehresman, Collen Findall, Jairus Gonzales, Jenna Irwin, Tyler Pester, Mitch Rhoades, Riley Ruskamp, Ben Schnatz, Nate Taylor, Makenna Widholm and Zach Wullenwaber. A graduate of Durham School's AE program, Kate Fickle, structural EIT at LEO A DALY, served as industry mentor.



Congratulations to another graduating class. They were celebrated at the senior reception in the fall of 2019.

SLC Initiates New Members, Achieves Gold Member Status

During the 2019-2020 academic year, the Omicron Chapter of Sigma Lambda Chi (SLC) International Construction Honor Society was proud to initiate 16 new student members, two industry professionals, and achieve Gold Chapter status.

The fundamental purpose of SLC is to provide recognition to outstanding construction students and honor outstanding professional individuals in construction.

New members: Peyton Abendroth, Trevor Camenzind, Bryce Danielson, Andrew Dilley, Drew Drake, Emery Gigantelli, Joel Hines, Gabe Kidwell (Kidwell Electric), Anne Klute (ABC), Grant Kowalski, Kate McChesney, Brady McDonald, Sotharin Saran, Laura Tooley, Maxx Troester, Alexander Verdoni, and Cameron Zelei.

Newly elected chapter officers: Cameron Zelei, president; Trevor Camenzind, vice president, and Joel Embury, secretary/treasurer.

A fall-semester SLC initiation is being planned along with other Nebraska Omicron Chapter social and community service activities.

Nebraska Masonry Alliance Honors



Ali Al Lawati (MAE), Rick Malone (CIVE-MS) and Kelsey Stithem (MAE) each received a \$1,000 scholarship from the Nebraska Masonry Alliance (NMA).

This talented team designed from scratch a new two-story, 10,000-square foot dormitory for Little Priest Tribal College in Winnebago, Nebraska. The design featured apartment-style dormitory suites, a community room/tornado shelter, laundry and workout facilities, and study areas to promote academic success and independence.

The constraints for the project included a structural system comprised of masonry and timber elements only, including load-bearing masonry shear walls and the design of reinforcement, masonry lintels, masonry columns, and timber framing for the floor, roof, and interior load-bearing walls. All applicable structural design checks were done to comply with current industry standards and code requirements.

MCAA Receives Top Honors and Scholarships



The University of Nebraska-Lincoln student chapter of the Mechanical Contractors Association of America (MCAA) was chosen as the 2019 Student Chapter of the Year, and two students — Ali Brown and Bryce Danielson — received prestigious MCAA scholarships.



The award recognizes outstanding achievement as an organization of students who are planning careers in the mechanical construction industry. The \$3,000 award honors exceptional achievement in governance and leadership, membership recruiting, fundraising, community involvement and career development.

It is the third time the Nebraska chapter has been named Student Chapter of the Year.



The University of Nebraska Student Chapter is sponsored by MCA of Omaha. The team's faculty advisor is Vishnu Reddi, assistant professor of practice, construction, in The Durham School.

Brown, a junior, was one of two chosen to receive the Ferguson-Women in the Mechanical Industry Scholarships. Danielson, a sophomore in construction management, was chosen to receive the Alan O'Shea Memorial Scholarship.

H Hasan Chosen as Speaker

Mohammad H Hasan, a mechanical and materials engineering (MME) Ph.D. student and member of the smart buildings research group advised by Durham School's Dr. Fadi Alsaleem, was chosen as one of two keynote speakers from over 40 talks presented at the inaugural UNL Graduate Symposium in February 2020.

Alsaleem has a courtesy appointment in MME and is Hasan's Ph.D. supervisor.

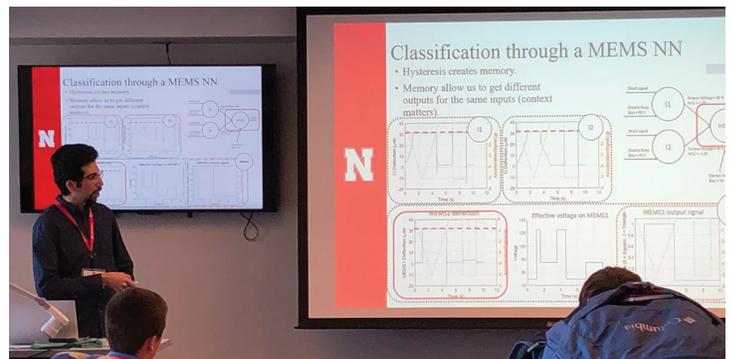
In his keynote speech titled, "Incorporating intelligence in micro-systems using bio-inspired sensing and-computing schemes," H Hasan addressed the potential of utilizing smart buildings and smart wearable devices for occupant health. Addressing the challenges of power consumption, poor scalability and response latency, H Hasan presented a solution to incorporate intelligence that draws inspiration from biological systems, especially the nervous system of insects, allowing for efficient computing with reduced complexity.

H Hasan also presented two methods to potentially couple microsensors already deployed in smart buildings with those in smart wearable devices to create an artificial neural network that offloads the building management system and the wearable device's central processors at hardware level without using digital processors, further reducing power consumption in the system.

One method is to connect a large number of microsensors to create a sensor network for computing, offering a trade-off between increasing the number of sensors and reducing the power consumption at the central processor. The appeal of this approach stems from the micro size of sensors typically used and their negligible power consumption.

The other approach discussed simulates a network of sensors within hardware, enabled by the high dynamical complexity of micro-sensors that allows them to inherently perform complex computations internally.

The inaugural Graduate Symposium talks garnered a positive reception from attendees and organizers. Both keynote speakers were commemorated by having their names engraved on a plaque housed at the College of Engineering.



ALUMNI IN THE NEWS

Seven alumni recognized by IES

Seven Durham School alumni were recognized recently with awards from the Illuminating Engineering Society (IES), with Patrick MacBride and Michelle Eble-Hankins earning multiple honors.

MacBride (MAE 2014) received the 2019 Award of Excellence Illumination Award for Outdoor Lighting for his work on SmithGroup's project at the Mike Ilitch School of Business at Wayne State University in Michigan. MacBride is also co-instructing the Daylighting course at the Durham School.

Eble-Hankins (AE Ph.D.,2008, and Durham School assistant professor of practice) and Brandon Rich (MAE 2007), both of Alvine Engineering, each received the 2019 Citation for Strong Correlation Between Lighting Design and Users of the Space Illumination Award for interior lighting design in their work on Omaha Public Schools' new J.P. Lord School.

Six IES Awards of Merit were presented to Nebraska AE alums. They are: MacBride, Smith Group, for Taubman Corporate Headquarters; Chrysanthi Stockwell (MAE 2007), HGA, for Arizona State University Student Pavilion; Adam MacKenzie (MAE 2016), Henderson Engineers, for Ben Bridge Jeweler in Tukwila, Washington; Eble-Hankins, Alvine Engineering, for OPS J.P. Lord School; Joshua Wilson (MAE 2015), Alvine Engineering, for Creighton School of Dentistry; and Andrew Lang (MAE 2006), Morrissey Engineering, for The Foundation.

Established in 1906, the IES is the recognized technical and educational authority on illumination. For over 100 years its objective has been to communicate information on all aspects of good lighting practice to its members, to the lighting community and to consumers through a variety of programs, publications and services.



Cowman Promoted



Kim Cowman, PE, LEED AP, Senior Associate, has been promoted to the position of National Director of Engineering. In this role, she directs strategy and business development for the engineering practice of the planning, architecture, engineering and interiors firm. She is based in Omaha. Cowman graduated with her MAE in 2004.

Boeck and Sawall Recognized as Young Professionals



Justin Boeck (CM 2009), construction superintendent at JE Dunn Construction, and Ryan Sawall, a member of the Durham School Construction Industry Advisory Committee and vice president and business unit leader at McCarthy Building Cos., were recognized among ENR Midwest's 2020 Top Young Professionals. Sawall also teaches Construction in Healthcare in the Durham School.



The recognition program, held annually by all of ENR's Regional Editions, honors young industry professionals, all under 40, who represent the best of the best in their careers by exhibiting qualities of leadership, career progress, and community involvement, and all have completed innovative projects and developed new ideas or entire businesses.

Jabbarani Torghabeh wins 2020 Folsom Distinguished Doctoral Dissertation Award

Zahra Jabbarani Torghabeh was selected by the University of Nebraska-Lincoln Graduate Awards Committee for the 2019-2020 Folsom Distinguished Doctoral Dissertation Award. Her doctoral study was on a CPWR funded research, titled "Ergonomic Back Injury Risk Factors in Construction Glass and Glazing Work," under advisor Terry Stentz. Jabbarani Torghabeh graduated in 2019 and has been teaching at Mississippi State University as a visiting assistant professor and will begin a tenure-track faculty position in the fall.

Rich Named 2020 Outstanding UNL AE Alumni



Brandon Rich, a 2007 graduate of the Master of Architectural Engineering (MAE) program, was presented with the Outstanding AE Alumni award at the annual Architectural Engineering Banquet in March. An associate principal at Alvine, Rich manages a team of almost two dozen engineers and designers that have active projects in about 15 states. He has been the lead electrical engineer on several award-winning projects. Over 14 years there, his work has included the Scott Data and Technology Center on the Scott campus and high-rises recognized by AEI for the Best Overall Project in both 2018 and 2019.

Among other personal achievements, in 2018, he was named one of CSE's 40 Under 40. His high-rise work includes two buildings that are on the Chicago Architectural Boat Tour official program. Because of his obvious professional impact, Rich helped to design the new Alvine Corporate Headquarters at 12th and Cass Streets in Omaha.

Rich is an active member of many community programs, including service in various board leadership positions. Added to work, family and community obligations, Rich also gives back significantly to the University and Nebraska AE at The Durham School. He has guest lectured for specialized electrical and lighting topics, volunteered as an industry evaluator during student design presentations, and has served several semesters as an industry mentor for the freshman AE 1010 class and the MAE capstone Team Design class.

INDUSTRY

Four new members and one returning member were introduced at this spring's meeting of the Architectural Engineering Industry Advisory Committee (AEIAC).

The new committee members are:



Ryan Curtis
Senior Associate at Leo A Daly (2007 - Present) holds a Master of Architectural Engineering (2006, UNL) with an emphasis in structural engineering, and a Bachelor of Science in Architectural Engineering (2005, UNO).



Eric Kamin
Principal, Electrical Engineer at DLR Group (2002 - Present) holds a Bachelor of Science in Electrical and Electronics Engineering (2001, UNL).



Rodrigo Manriquez
(returning member) Principal, Lighting Design Studio Leader at SmithGroup (1997 - Present) and Lecturer in The Durham School (2008-Present) holds a degree in Architectural Engineering and Lighting Design (1997, UK).



Brent Protzman
Director - Building Science & Standards Development (2017 - Present) and Manager - Energy Information and Analytics at Lutron Electronics (2011 - Present), is formerly an Assistant Professor of Architectural Engineering at University of Colorado. He holds degrees in: Ph.D. in Engineering with emphasis in Architectural Engineering (2007, UNL), a Master of Architectural Engineering (2004, UNL), and Bachelor of Science in Architectural Engineering (2003, UNO)



Darren Dageforde
Executive Director of Utilities and Energy Utilization at UNMC (2013-Present) received his Bachelor of Science in Mechanical Engineering at UNL.

2020 Architectural Engineering Awards & Recognition Banquet



The 2020 Architectural Engineering Awards and Recognition Banquet was held March 5 at the Scott Conference Center. More than 190 alumni, students, faculty and staff were in attendance. Congratulations to all award recipients:

- Outstanding Alumni Project Award: Interdisciplinary - Alvine Engineering
- Outstanding Alumni Project Award: Discipline Specific - Leo A Daly
- Outstanding Faculty Award - Dale Tiller
- MAE Industry Mentor Award - Abby Goranson
- Outstanding MAE Award - Sam Underwood
- Outstanding Alumni Award - Brandon Rich

Industry Bootcamp

The Durham School has entered a new partnership with the Construction Industry Advisory Council to provide educational opportunities for undergraduate and graduate students and bring industry professionals to teach in the classroom.

In fall, the first Industry Boot Camp will be offered, consisting of three, separate one-credit hour classes packaged together. The purpose of this program is to provide our students with the opportunity to learn about the latest technologies and methods while understanding the current applications and practices of the construction industry.

The first boot camp class will be taught by representatives from Kiewit, The Graham Group, Mortenson and Constructors Inc., and will cover project delivery methods, post-award construction administration, and project control and historical cost comparisons. Kevin Grosskopf, Brandon Kreiling and Matt Barrows will team with CIAC members to help produce class content.

2019 Person of the Year

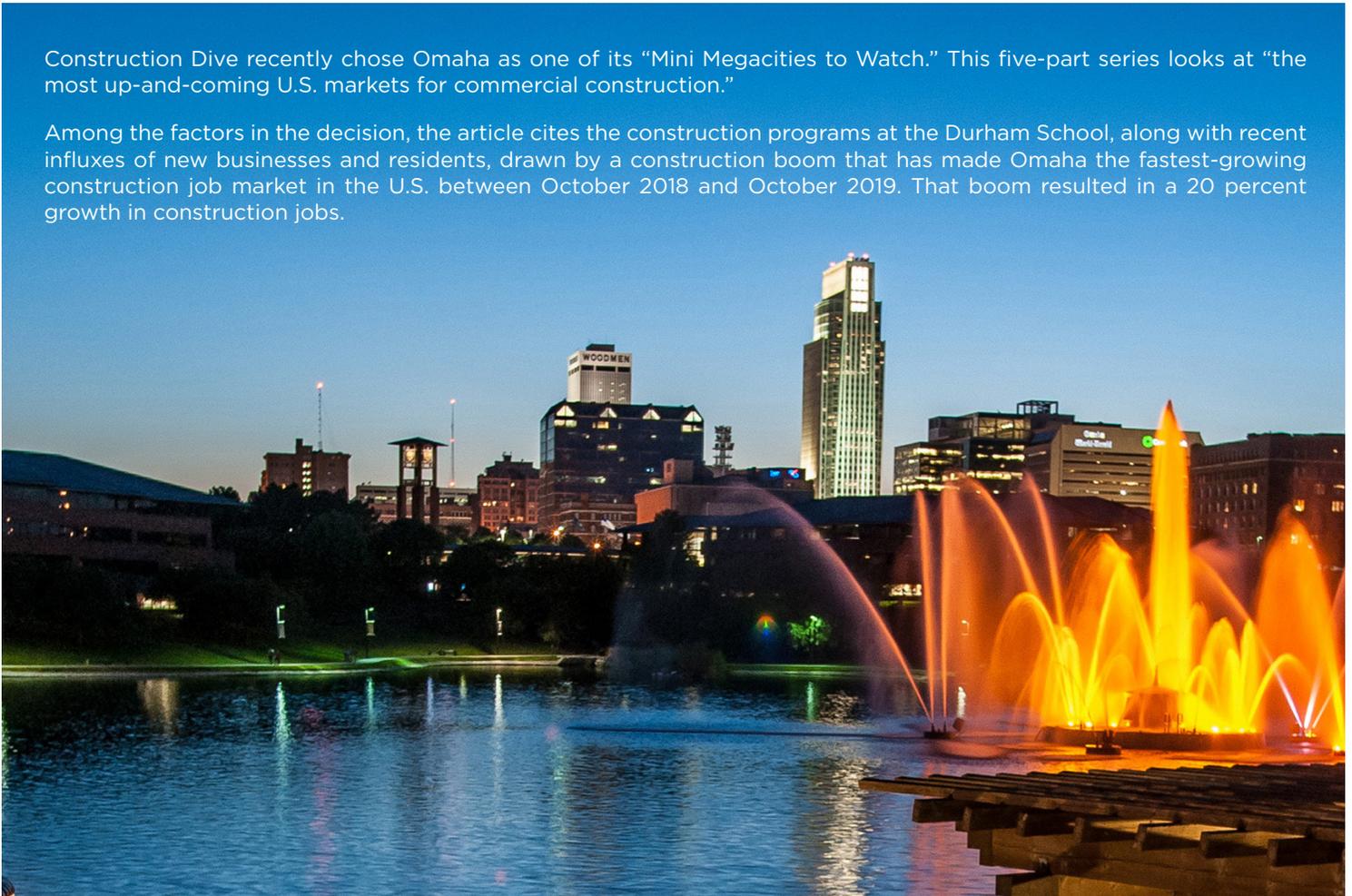
Jenny Retherford, a 2003 architectural engineering graduate and senior lecturer in civil and environmental engineering at the University of Tennessee, Knoxville, was chosen as one of six People of the Year of 2019 by the Tennessean, the major newspaper in Nashville.

Retherford was among a group labeled the “Natchez Trace Bridge Heroes” for raising awareness of a staggering number of suicide attempts on the Franklin County bridge over the past two decades and for spurring changes designed to prevent other such attempts in the future.

Inspired by a letter from Tracy Frist, the wife of former U.S. Senate Majority Leader Bill Frist, Retherford assigned six students a project to design structurally sound and aesthetically pleasing bridge barriers for federal officials to consider.

Construction Dive recently chose Omaha as one of its “Mini Megacities to Watch.” This five-part series looks at “the most up-and-coming U.S. markets for commercial construction.”

Among the factors in the decision, the article cites the construction programs at the Durham School, along with recent influxes of new businesses and residents, drawn by a construction boom that has made Omaha the fastest-growing construction job market in the U.S. between October 2018 and October 2019. That boom resulted in a 20 percent growth in construction jobs.



Durham School Merchandise Available

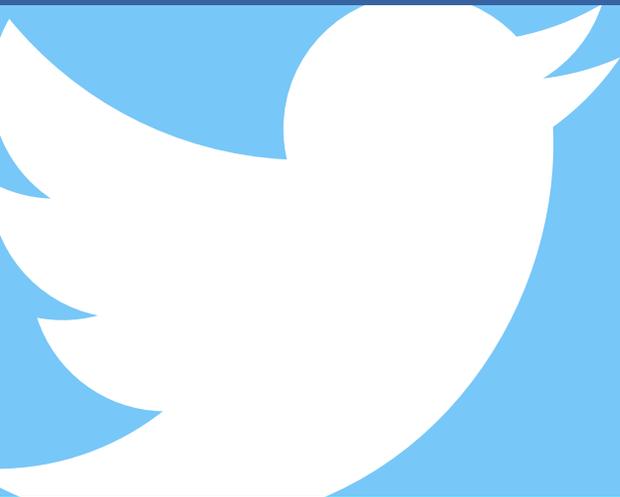
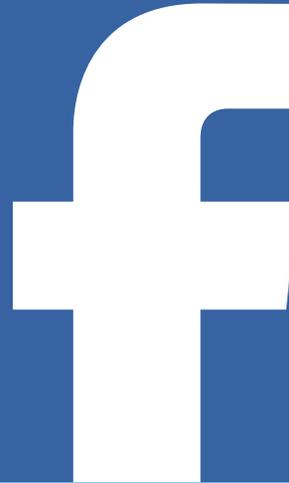
The Durham School of Architectural Engineering and Construction has set up an online merchandise store within the College of Engineering's online store. You can visit directly at: nebraskaengineeringstore.com/dsaec

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