



FALL 2020 NEWSLETTER



## From the desk of MIKE JACKSON

Department Chair and Professor

Dear Alumni, Friends and Partners of the Department,

Happy New Year! 2020 challenged our sense of normality in so many ways. However, because of your example and continued support, the Nieri Family Department of Construction Science and Management (N.CSM) was able to continue to grow and exceed many of our annual goals, in spite of COVID-19. We are so proud that Clemson University has faced each and every challenge with the integrity and leadership we expect of this great institution. This newsletter highlights some of the many successes of our N<sub>2</sub>CSM students, faculty and staff over this past year.

Due to the leadership of Mr. Steve Foushee of P+F Construction, and Mr. Richard Gauthier, our N<sub>2</sub>CSM Experiential Learning Coordinator, the NCSM Experiential Learning (XL) Construction Yard and the John B. Nieri Construction Classroom received our official Certificate of Occupancy from the university in mid-November. We are also happy to announce that hands-on construction education activities are now taking place at this new facility. Also, due to the continued leadership of Ms. Leslie Armstrong, our NCSM Corporate Partner Program Coordinator, we were able to successfully pivot both our 2020 Annual Construction Symposium and Fall Industry Advisory Board (IAB) Meeting and Career Fair to online/virtual formats. And of course, due to the ongoing commitment to professionalism and quality by our faculty and staff, we were also able to quickly shift our Spring and Fall semester instruction to hybrid and online delivery. We have also significantly grown our part-time lecturer faculty within the department to allow for future growth and greater integration of the construction industry into our curriculum.

We have an amazing group of construction industry leaders who serve on our IAB Executive Committee. This generous group is actively helping to steer the department into a bright and promising future. Thank you to this group for bravely meeting in person in Greenville in early June to review the mission and goals of the department. One tangible outcome of that meeting was a draft of a new department vision statement: "A hands-on innovative approach to developing diverse construction industry leaders." This new vision statement will help guide us all in the development of a new strategic plan for the next five years (2021-2025).

In closing, we are grateful for all that each and every one of you are doing to make us better. 2020 was a challenging year for us all, but as a direct result of your continued support, the NCSM department continues to grow and prosper. As a team, I am convinced that we will all only grow stronger and more resilient going forward as a result of this challenge. Happy New Year to you all, our family. We are all so looking forward to a COVID-free New Year. In the meantime, Go Tigers!

Sincerely,

N. MIKE JACKSON, PH.D., P.E. DEPARTMENT CHAIR AND PROFESSOR



The Mission of the Nieri Family Department of Construction Science and Management (N,CSM) is to offer a comprehensive program of education, service and research activities consistent with the Mission of Clemson University and the Strategic Plan of the College of Architecture, Arts and Humanities (CAAH), for the purpose of improving the quality of the construction industry and thus the built environment. To realize this mission, the department has the following major goals: Excel in the education of N,CSM majors through a vigorous program of academic learning designed to produce motivated, well-educated, responsible citizens with the management and technical skills requisite for leadership positions in the construction industry; Provide meaningful and relevant education in all construction courses for other undergraduate and graduate students at Clemson University; Foster Clemson University's service mission by providing outreach activities for the construction industry and public, both nationally and internationally; and Assist in attaining Clemson University's funded research goals by conducting and disseminating the results of research and development and/or conduct educational courses for the construction industry.

To realize this mission, the department has the following major goals:

- 1. Excel in the education of Construction Science and Management undergraduate and graduate students alike through a vigorous program of academic learning designed to produce motivated, well-educated, responsible citizens with the management and technical skills requisite for leadership positions in the construction industry.
- 2. Foster Clemson University's service mission by providing outreach activities for the construction industry and public, both nationally and internationally.
- 3. Assist in attaining Clemson University's funded research goals by conducting and disseminating the results of research and development and/or providing other educational opportunities for the construction industry.



## ON THE COVER

Students visit the Samuel J. Cadden Chapel that is under construction in the heart of Clemson's campus.

# OUR HISTORY

The first courses in the undergraduate building construction program at Clemson University were offered by the School of Architecture in the 1963-64 academic year. This program was initiated in response to the demand by the South Carolina construction industry for individuals educated in the special technological and managerial skills of the construction profession. The first degrees from this initial program were awarded in May of 1966.

In 1971, the Department of Building Science became one of the original four departments of the College of Architecture. This department was a charter member of the Associated Schools of Construction (ASC) and actively participated in the formation of the American Council for Construction Education (ACCE).

The name of the department was changed to Construction Science and Management (CSM) in 1991. In 1986 the department received approval and began to offer the Master of Science degree in Construction Science and Management (MCSM). In 1992 the department also received approval to offer its MCSM degree via distance learning.

The Undergraduate and Graduate degree programs are accredited by ACCE. In 2004, the CSM Department, in collaboration with the School of Architecture and the Department of Planning and Landscape Architecture initiated a PhD Program in Planning, Development and the Built Environment (PDBE). The department was officially endowed as the Nieri Family Department of Construction Science and Management (NfCSM) in the Fall semester of 2019. Both the undergraduate BS CSM and graduate MCSM degree programs were approved by the South Carolina Committee on Higher Education as STEM designated degree programs in 2020.

The NCSM Department currently consists of ten (10) full-time faculty lines, including the Department Chair; seven (7) part-time faculty; and four staff positions. Since its inception, the department has awarded approximately 1930 bachelor's degrees (BS) and 270 master's degrees (MCSM) (through the 2019-2020 academic vear).

> FAST FACTS FOR 2020 **UNDERGRADUATE ENROLLMENT - 255** 2020 GRADUATES - 78

## MCSM DEGREE EARNS STEM DESIGNATION

Our long-awaited approval for STEM designation of our MCSM degree program is now official!

For the Nieri Family Department of Construction Science and Management, the Science, Technology, Engineering, and Mathematics (STEM) designation for the MCSM program means that we can now compete on a level playing field with other STEM designated programs from across the country for the recruitment of top rated international graduate students and also to increase our graduate program enrollment.

For our construction companies and international graduate students, the STEM designation means that our international graduate students will be able to work for 24 months after graduation with their F-1 student visa.



"This semester at Clemson University, I got the opportunity to be the team Captain of our Commercial Construction Competition Team. While it was by far one of the most challenging things I have done since entering college, it improved my knowledge in the industry drastically and helped improve my leadership capabilities! It was also well worth it when we heard our team name called for first place for the bid package and presentation sections! Go Tigers!" SAM DIESTLER, TEAM CAPTAIN



#### ONLINE DRONES COURSE FOR CONTRACTORS

In collaboration with Clemson Online, Dr. Joe Burgett has developed an online Applied Drone Technology course specifically for contractors. The course is delivered either as a "self-paced" or "instructor-led" offering. The material is particularly useful for contractors looking to start leveraging this technology but are unsure where to start, don't know the rules or are worried about the risk of operating a UAS. Those taking the class will earn their FAA Part 107 remote pilot certificate (required to fly drones

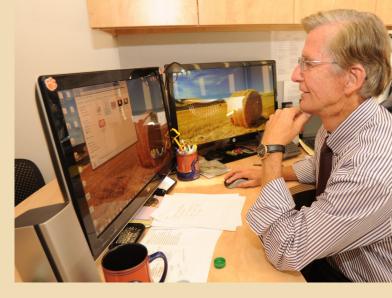


commercially), learn to create autonomous flights, check FAA airspace, file air traffic control authorization, create 3D models and do quantity take-offs from drone imagery. Flight skills are also taught and evaluated using a cutting edge flight simulator. Please contact Dr. Burgett for more information at imburg@clemson.edu.



## BAUSMAN EARNS RESEARCH GRANT TO IMPROVE EFFICIENCY AT SCDOT

Dennis Bausman, a Clemson University professor of construction science and management, has received a \$387,000 research grant aimed at helping the South Carolina Department of Transportation streamline multimillion-dollar road and bridge projects.



Since 2011, Bausman has led or participated in four other research initiatives aimed at assisting SCDOT in delivering projects on time and on budget.

"This is research that truly can be applied to SCDOT's day-to-day business, the way they manage their work," said Bausman, who holds an endowed faculty chair in the Nieri Family Department of Construction Science and Management.

"We're trying to establish best practices," he said.

In the two-year project, Bausman and his team will focus on developing standardized SCDOT procedures for contracting professional design and engineering consultants. The project, "SCDOT Scope of Services Template Research," will identify efficiencies in the week-to-week and even day-to-day plans of the pre-construction process. "The development process for transportation projects from idea to actual reality can be 10 years," Bausman said. "There are many steps that SCDOT has to manage. It's very complex."

Bausman serves as principal investigator for the new research project. Other Clemson team members include co-investigator Ehsan Mousavi, an assistant professor in the Nieri Family Department of Construction Science and Management; co-investigator Ronnie Chowdhury, the Eugene Douglas Mays Professor in the Glenn Department of Civil Engineering; and research assistant Ajay Jadhav, a Ph.D. student in the Clemson University Planning, Design and the Built Environment program. David Taylor, a managing principal with Stantec, an engineering firm in Columbia, serves as an industry consultant.

As a part of its research, Bausman's team is exploring best practices at other departments of transportation across the country. Bausman currently leads a separate but similar \$350,000 research project, updating SCDOT's project development process and training manuals for procurement. Bausman's research looks at such development issues as design, engineering and environmental concerns.

"Both projects are focused on the pre-construction period, the two to six years that it takes to get a project to where it can be competitively bid and then ultimately started and completed," Bausman said. "The South Carolina Department of Transportation is always trying to improve its processes."

The SCDOT is responsible for owning, operating and maintaining the fourth largest highway system in the United States. Its annual budget of \$1.4 billion funds road and bridge construction and improvement projects throughout the state.

A 2017 increase in the state's gas tax is expected to generate an additional \$800 million a year by 2024 to address the state's growing transportation needs. "This continued expansion of SCDOT's transportation program places increasing pressure on SCDOT personnel responsible for efficient and effective delivery of transportation projects," Bausman said.

Clemson University has become one of SCDOT's go-to sources for design, management and engineering research, he said. Through the years, SCDOT projects have also benefited a few construction science and management students who were brought in as research assistants.

"They're excited about that because it's not producing something abstract but results that can be implemented," Bausman said. "It's quite rewarding for all of us involved because you see the implementation of the research you produced."

# DISRUPTORS

## in the Construction Industry

The Fifth Annual Construction Industry Symposium just like everything else in the world was disrupted due to COVID-19. We were determined more than ever to find a way to bring our students and industry together and share how this global pandemic has changed what we do and talk about how we continued to work. Our theme was "Disruptors in the Construction Industry" but we also noticed another theme that while the world had stopped, our industry continued to work. Leaders made changes in safety to protect their employees and find ways to improve processes in order to continue the work that needed to be done. Not for profit, but for the wellbeing of our industry and the livelihoods of their employees.

This year's event was hosted via Zoom on October 15, 2020. The event was well attended and hosted a full day of interesting and engaging speakers and discussions, as highlighted below.

We hope you will all plan to join us again in 2020 at the Greenville Marriott on October 14, 2021 for our Sixth Annual Symposium. We are sure there will be a lot of great topics and discussion this coming year to share!

#### Keynote Speaker

#### Dr. Bruce Yandle

Co-Founder, Clemson Institute for the Study of Capitalism

#### The Coronavirus Economy: What to Expect in the Year Ahead?

This presentation focused on the economic outlook for the U.S. and Carolina economies and addressed economic growth, employment, material costs, and other key matters of concern to the construction industries. The presentation also explored characteristics and challenges associated with the new economy that is evolving as a result of the Coronavirus experience.

## Speakers



Brian Gallagher, Vice President, Corporate Development, Graycor, Inc.

#### EMBRACING DISRUPTION

The word disruption refers to processes, market conditions and products that are fundamentally different from what is currently in use and that render unforeseen, large scale changes. Disruption, including COVID-19 and social unrest, have impacted the construction industry. When industries and companies fail to embrace new business approaches, market conditions, innovation, and new technologies, it is usually due to entrenched mindsets and failure to imagine change. Construction companies that are agile, proactive and willing to embrace change will be the leaders - the question is, will your construction company be among them?



Corey Arledge, Executive Director of Safety, Eldeco, Inc.

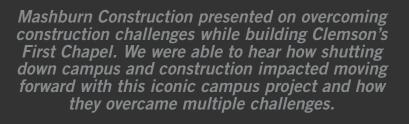
#### Emerging Technology In Safety Training

Corey walked us through how the lack of safety training and not repeating training is a top reason there are accidents on-site. He also showed us how the future of virtual training is allowing employers to make sure employees are able to get the training they need in a safe, efficient and innovative way.

## Speakers



**Paul Mashburn**CEO,
Mashburn Construction





**Berry Ponder**Vice President, Upstate Division,
Mashburn Construction





**Jordan Smith**Project Manager,
Mashburn Construction



**Corey Lemming**Director, Holder Construction



Chris Paine
General Superintendent,
Holder Construction

Holder Construction presented on how using Modular Construction as a Disruptor to the Status Quo.

#### SAVE THE DATE

Sixth Annual Construction Industry Symposium October 14, 2021

## Sponsors









In the spring of 2020, **Dr. Joe Burgett** was successful in his Pennell Center grant proposal and received funding to create the South Carolina Interagency Drone Users Consortium or SCiDUC (pronounced Sky-Duck). SCiDUC is an association of drone users exclusive to government employees. Since that time, SCiDUC has had an explosion of success! The bylaw were formally drafted and adopted by the membership in February and they just received their 501c3 status. The group has over 180 members from 60 agencies specifically including DHEC, SCDOT, DNR, Forestry Commission and many local governments and first responders. SCiDUC has a quarterly pod-cast, discussion forum and monthly "Member Spotlights" recognizing state employees using drone technology to support their agency's mission. The group has hosted several outreach events including one with Clemson supporting at-risk high school students. They have been very fortunate to have Bentley Technology System, who is a leading software development firm, support them as a Founding Industry Partner. Those interested in learning more about SCiDUC or engaging state agencies are encouraged to visit their website at www.sciduc.org. Joe Burgett and Jason Lucas both sit on the board of directors and are available to answer any questions.

#### CONGRATULATIONS TO THE FOLLOWING MCSM STUDENT

They passed the CSM Graduate Comprehensive Exam and will be graduating in December 2020!

#### Nicole Davis | Nathan Matos | Rajdatt Patil | Donnell Smith



**Robert Crates** was honored with as one Carolinas AGC 2020 scholarship recipients. The Carolinas AGC Foundation scholarship program is designed to assist those choosing to enter the construction industry as well as those wishing to advance their skills and/or knowledge to further their construction careers. The committee distributed \$12,000 to three very deserving students who will no doubt be great assets to our industry. Congratulations, Robert!



**Brittany Lacy** was awarded the PWB scholarship from the National Housing Endowment!

The NAHB Professional Women in Building Council's (PWB) Building Hope Scholarship Fund supports high school and college students pursuing education and professional development opportunities in residential construction.

#### CAPITAL ASSET ANALYTICS IN THE BIG DATA ERA WITH MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE IN THE BACKGROUND.



Dr. Vivek Sharma has been awarded a grant and joining Construction Industry Institute (CII) as an Academic Investigator for the CII Federal Facilities Data Analytics Research and Application Project (FF-DARAP). CII, based at The University of Texas at Austin, is a consortium of more than 140 leading owners, engineering-contractor, and supplier firms from both the public and private arenas. To date, six agencies have committed to the study, including Smithsonian Institution, U.S. Department of Energy, U.S. Department of State, U.S. Department of Commerce/NIST, U.S. Army Corps of Engineers, and Naval Facilities Engineering Command for a yearly commitment of \$100,000 each per year, over a three-year period, for a total grant of \$1,800,000. There is a sub-award being negotiated between CII and Clemson University.

This effort will lead to a Federal Facilities Lab (FFL), a collaboration among Texas Advanced Computing Center, CII, and Clemson University.



Carolina Power's board approved a \$100k gift to purchase and install a new 'Carolina Power Environmental Systems Lab' at our Experiential Learning (XL) Yard.

Thank you to Chris Moore and Carolina Power for investing in the future of N,CSM! More details coming soon!





## CHANGE OF PLANS

This year's Habitat for Humanity Homecoming Build looked a little different. For starters, our students built on-site instead of the iconic Bowman Field location. The amount of students allowed on-site due to COVID restrictions were limited which played a major role in this year's completion timeline. The weather was also a factor. With all of these changes, volunteers, lead by N<sub>C</sub>CSM student Brittany Lacy, were determined to not let Habitat for Humanity down. We are proud of all of the volunteers that worked tirelessly to provide for our community!

## SAVE THE DATE

Spring IAB/Career Fair - February 11
Alumni Golf/ Senior Dinner - April 22
Construction Symposium - October 14



Congratulations to **Nathan Matos** for being awarded the following scholarship from the National Housing Endowment (NHE).

- 1. Pulte Group "Build Your Future" Scholarship
- 2. Herman J. Smith Scholarship
- 3. Lee S. Evans Scholarship

Way to go, Nathan! Learn more about the scholarships at www.nahbclassic.org.



This summer, Morgan Corporation gifted the N<sub>C</sub>CSM with a drone. Pictured: Professor **Dr. Joe Burgett** with Langdon Mitchell from Morgan Corporation checking out the new drone.





On Friday, May 22, 2020, N,CSM student, Kelsey Nichole McGhee, 19, of Conway, SC passed away. She was born July 1, 2000 in Myrtle Beach, SC and is the daughter of David and Cynthia McGhee.

The N,CSM Constructor's Guild named this year's Habitat for Humanity Homecoming Build in memory of Kelsey. They also created the Kelsey Mc-Ghee Ambition Award. This year's recipient Caleigh Hankins.

Caleigh was presented the award on October 23 at the 2020 Homecoming Build site to commemorate the build and honor Kelsey. Kelsey's parents were in attendance to present the award as well as join a candle vigil in her honor.

To honor Kelsey's life's passion and desire for helping others her family welcomes donations to Habitat for Humanity of Horry County in Kelsey's name, 165 Co Op Road, Myrtle Beach, SC 29588 or at www.habitatmb.org.











#### N,CSM Planning Retreat

Earlier this year, the N<sub>C</sub>CSM department met with industry leaders and alumni to discuss the future of our department and the needs of the industry. Led by Dr. Manfred Gollent, we worked together to fine-tune our mission and goals. We are more determined than ever to give our student's the best skills needed for our ever-changing industry.



## NEW STORE COMING SOON!

We are working hard on a new store for you to get your N<sub>C</sub>SM departmental and alumni gear! An email will be coming out soon with more details!



#### XL YARD

The Experiential Learning (XL)
Yard has already proven to be
beneficial to our students. We are
able to offer so many hands-on
experiences thanks to our corporate
partners that helped bring this
vision to life.

Dr. Joseph Burgett secretly planted a few surprises for XL Yard Coordinator, Richard Gauthier this summer.
We had corn, sunflowers and watermelons popping up all around the XL Yard!

- AJ Bright Construction
- Ajax Building
- AM King
- Archer Western I a member of the Walsh Group
- ARCO
- **Baker Concrete**
- Bowen & Watson, Inc.
- Brasfield & Gorrie
- C.F. Evans Construction
- Caldwell Constructors
- Carolina Power
- Carolina Safety Consultants
- Carroll Daniel Construction Co.
- Chesterfield
- Choate Construction Co
- Clayton Construction
- Coakley & Williams Construction Inc.
- Contract Construction Co.
- **Danis Construction**
- **DPR** Construction
- **Edcon General Contractors**
- Eldeco. Inc.
- **Evans General Contractors**
- Fluor Corporation
- **Great Southern Homes**
- Greystar Development and Construction
- Groundbreak Carolinas
- Guy Roofing
- H.G. Reynolds Company, Inc.
- **Harper Corporation**
- Hogan construcion group
- Holder Construction Co
- Hood Construction, Inc
- IES Commercial & Industrial
- J Davis

- JE Dunn Construction
- Juneau Construction Company
- **KATERRA**
- Kiewit
- Lithko
- LMC (Lennar Multifamily Builders)
- Loveless Commercial Contracting Inc.
- M.B. Kahn Construction Co., Inc.
- Mashburn Construction Co., Inc.
- McCrory Construction
- McGillicuddy Concrete
- **Metromont Corporation**
- Moss & Associates
- Myers & Chapman
- New South Construction
- Patuxent Materials, Inc.
- Reeves Young, LLC.
- Robins & Morton Group
- Rodgers Builders
- Ryan Homes (NVRINC)
- Sherman Construction
- SteelFab of South Carolina
- **Superior Construction**
- Swinerton Builders
- T. D. Farrell Construction, Inc.
- The Whiting-Turner Contracting Co.
- Thompson Construction Group, Inc.
- Topcon
- Trident Construction
- **Turner Construction Company**
- **United Rentals**
- Walbridge Southeast
- Waldrop Mechanical Services
- WBG Mechanical Const. & Engrs



Clemson's N<sub>r</sub>CSM Corporate Partners include a group of leading construction companies that, collectively are dedicated to enhancing the educational experience of the N<sub>r</sub>CSM students at Clemson. Representatives from each member firm work with the department's faculty and staff to ensure that Clemson's N<sub>r</sub>CSM students have access to the best construction education possible and have the opportunity to contribute to the construction industry at the highest level possible upon graduation. It is because of this generous support that the Clemson N<sub>r</sub>CSM department is consistently recognized as a national leader in Construction Management education — currently ranked #6 among 2020's Best Construction Management Colleges in the U.S.

By introducing new technology to the faculty and students, sharing industry experiences in the classroom, and providing financial resources to the program, Clemson's N,CSM Corporate Partners are helping to strengthen the foundation for the future of the construction industry.

For more information on how your company can become a N<sub>r</sub>CSM Corporate Partner, please don't hesitate to contact Ms. Leslie Armstrong, N<sub>r</sub>CSM Corporate Partner Program Coordinator at 864-656-9588 (ARMSTR3@clemson.edu).

#### **WELCOME DEAN NICHOLAS VAZSONYI!**

Dear N,CSM family,

In October, I had just begun my tour of the departments in the College, with Architecture and Art. The tour continued in October with week-long visits with City Planning and Real Estate Development (CPRED), the Nieri Family Department of Construction Science and Management (NfCSM), the Department of English, and the Department of History and Geography.

The high points of the visit with N<sub>C</sub>CSM were the time at the brand new Experiential Learning Construction Yard, dubbed "XL Yard," where students get hands-on experience learning the art of construction, and the one-day symposium organized by Department Chair Mike Jackson on "Disruptors In The Construction Industry." The idea of "disruption," on its face a negative and potentially destructive force, is that it can pave the way for and propel innovation and progress. It has been a driving principle in the arts, sciences, and the humanities for the last two centuries and is why the world is and looks the way it does today.

The German author Goethe phrased it succinctly in the late 18th century, when he had Mephistopheles describe himself as "Part of that force that always wills evil and yet always produces good," because he is "the spirit that always negates, and rightly so, because everything that arises is worthy of destruction."

It should come as no surprise that the concept of the Faustian drive has been borrowed and repurposed by the worlds of business and construction, but it was still an eye-opening experience for me to witness the conversation. To see how saturated our College is with the humanities, from City Planning to Construction Management. Who would have thought it?

The humanities are not an optional extra, a required set of gen ed courses to put behind one as quickly as possible. They are integral to our existence on this planet. They inform how we think and why we think it.

Without the humanities, there is nothing at all but bare existence and survival of the species.

So, for this month at least, please allow me to say: "Go Humanities!"

Nicholas Vazsonyi, Dean College of Architecture, Arts and Humanities





Clemson's Nierr Family De Construction Science and



Nieri Family Department of Construction Science and Management Experiential Learning Group