

Dean

The William States Lee College of Engineering

2019-2020

THE OPPORTUNITY

The University of North Carolina at Charlotte (UNC Charlotte) invites nominations and applications for the Dean of The William States Lee College of Engineering.

The University of North Carolina at Charlotte

UNC Charlotte is North Carolina's urban research university. It leverages its location in the state's largest city to offer internationally competitive programs of research and creative activity, exemplary undergraduate, graduate, and professional programs, and focused community engagement initiatives. UNC Charlotte is committed to addressing the cultural, economic, educational, environmental, health, and social needs of the greater Charlotte region.

Responding to the need to serve returning veterans immediately after WWII, the University of North Carolina at Charlotte is one of a generation of schools founded in metropolitan areas just after the war to meet the rising post-war demands for higher education. On September 23, 1946, the State of North Carolina opened the Charlotte Center of the University of North Carolina with an enrollment of 278 students. In 1961, the school moved its main campus from Uptown Charlotte to its current location on a 1,000-acre campus, which is ten miles from the city center. The main campus is now connected to UNC Charlotte Center City building by Charlotte Area Transit System light rail.

From its inception, in keeping with the State of North Carolina's commitment to provide affordable access to quality education, the University has worked to make learning accessible to all. Though now a large research-intensive urban university and the third largest of the 17 institutions within the state system, the University has maintained its entrepreneurial culture and its commitment to innovation.

UNC Charlotte is the fastest growing institution in the UNC System, comprising seven academic colleges and offering 24 doctoral programs, 65 master's degree programs, and 75 bachelor's degrees. There are more than 1,400 full time faculty and fall 2019 enrollment exceeds 29,500 students, including over 5,400 graduate students. UNC Charlotte has more than 144,000 living alumni including over 76,000 alumni in the Charlotte region.

The University's 2016-2021 Institutional Plan affirms its responsibility to produce degree recipients who will contribute to the state of North Carolina as well-prepared, highly-skilled and productive citizens and lifelong learners able to function in a rapidly evolving global society. The plan recognizes the centrality of the arts, humanities, and sciences to achieving these goals, the value of an interdisciplinary approach, and the importance of other experiences that can be embedded in a coherent collegiate experience, including international travel and study, internships and service-learning opportunities, and community service. Additional information can be found online at www.uncc.edu.

Charlotte, North Carolina

Located in Charlotte, the largest city in North Carolina, the University is part of a vibrant and rapidly growing metropolitan region of over 1.25 million people. Fueled by rapid job growth and moderate cost of living, between 2004 and 2014 Charlotte was ranked as the country's fastest growing metropolitan area and it tops the 50 largest U.S. cities as a millennial hub. With an estimated population of 872,000 and an average of 60 people moving to Charlotte a day, Charlotte is the 17th most populous city in the United States and the fourth fastest growing major U.S. city.

Charlotte is home to the world headquarters of seven Fortune 500 companies, and since 1990, new and expanding businesses have invested more than \$18 billion here, creating more than 170,000 new jobs. The

Charlotte region is considered the Southeast's energy engineering hub, with more than 240 energy-oriented organizations and more than 26,000 energy-oriented employees in its 16 counties. Power engineering companies in Charlotte include Duke Energy, Framatome, EPRI, URS Washington Group, Westinghouse, Siemens, Metso Power, and Parsons.

To help accelerate small business and entrepreneurship on campus and in the region, UNC Charlotte built the Partnership, Outreach, and Research to Accelerate Learning (PORTAL) building on campus in 2014. PORTAL was designed to spur business growth and job creation, promote research and innovation, and support the entrepreneurial ecosystem in the Charlotte region. The building is outfitted with over 90,000 square feet of floor space dedicated to business innovation and is a premier workspace and innovation center for regional and global business pioneers.

THE WILLIAM STATES LEE COLLEGE OF ENGINEERING

For more than 50 years, The William States Lee College of Engineering has been one of the finest engineering colleges in the Southeast. Our academic programs use experiential hands-on learning techniques, so our students understand firsthand the concepts and theory they learn in the classrooms. Our research is focused on application, as we work with area industry and the local community to solve real-world problems in engineering fields of local importance including energy, precision manufacturing, transportation, environmental, biomedical, motorsports and more.

Vision, Mission, Guiding Principles, Core Values

Vision and Mission

The William States Lee College *of* Engineering is the first choice for students, faculty, staff and industry partners discovering, integrating, applying and disseminating knowledge.

The William States Lee College *of* Engineering provides quality educational experiences and discovers and disseminates knowledge that serves the citizens and industries of local, national and international communities.

Guiding Principles

The William States Lee College *of* Engineering strives for excellence in our teaching, research and service missions in a dynamic interactive campus environment. We leverage the unique contributions of each individual to create an inclusive and supportive environment for all.

Core Values

- Diversity in race, age, gender, religion, sexual orientation, abilities and disabilities
- Equitable and respectful treatment of each person
- Open and civil communication and free exchange of ideas
- Collaboration and teamwork
- Innovation and creativity
- Continuous improvement

History

The teaching of engineering-related courses at UNC Charlotte goes back to the earliest days of the institution, which got its start as Charlotte Center in 1946 and then became Charlotte College in 1949. Throughout its junior-college phase, engineering and technology were important priorities of the institution.

In the spring of 1965, Charlotte College awarded its first Bachelors of Engineering degrees. Later that same year, Charlotte College officially became the University of North Carolina at Charlotte, an institution of the State of North Carolina's university system. By 1973, the engineering program had become the College of Engineering. In 1994, the college was officially named The William States Lee College *of* Engineering in honor of Duke Power CEO Bill Lee, an engineer, leader in the nuclear power industry and strong supporter of the engineering program at UNC Charlotte.

College Statistics

2019 Enrollment: 3,182 undergraduate students, 516 graduate students

2018-19 Graduates: 892

FY 18-19 Research Awards: \$16.5 million

FY 18-19 Research Expenditures: \$11.2 million

Degree Programs: 7 bachelor's, 7 master's, 4 doctoral

Academic Departments and Programs

Civil and Environmental Engineering

The Department of Civil and Environmental Engineering delivers bachelors, masters and doctoral programs in a research-intensive environment that provides students with the opportunity to develop state-of-the-art technical skills, a practice-ready orientation, and extraordinary character. The urban location in Charlotte is leveraged to provide students and faculty with experiential opportunities in all aspects of civil and environmental engineering, with a particular emphasis on energy and sustainability. Research focus areas include water resources, geo-environmental, structural and transportation engineering.

Degree Programs

- Bachelor of Science in Civil Engineering
- Master of Science in Civil Engineering
- Ph.D. in Civil Engineering
- Ph.D. in Infrastructure and Environmental Systems (Interdisciplinary program)

Concentrations

- Energy Infrastructure
- Environmental/Water Resources Engineering
- Geotechnical Engineering
- Land Development Engineering
- Structures
- Transportation

Electrical and Computer Engineering

The academic programs of the Department of Electrical and Computer Engineering are designed to strike a balance between theory and practical knowledge. There are five broad technical areas in ECE: Communications, Control and Signal Processing; Devices, Circuits and Systems; Energy and Sustainability; High Performance Embedded Computing; and Power Systems.

Degree Programs

- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Master of Science in Electrical Engineering
- Ph.D. in Electrical Engineering

Concentrations

- Power and Energy Systems (Electrical Engineering)

Mechanical Engineering and Engineering Science

Mechanical Engineering and Engineering Science Department faculty are experts in precision engineering, motorsports engineering, bioengineering, metrology, computational methods, mechanics and materials. Academic programs are nationally recognized, preparing students to succeed in any discipline of mechanical engineering.

Degree Programs

- Bachelor of Science in Mechanical Engineering
- Master of Science in Mechanical Engineering
- Ph.D. in Mechanical Engineering

Concentrations

- Biomedical Engineering
- Energy Engineering
- Motorsports Engineering

Systems Engineering and Engineering Management

The Department of Systems Engineering and Engineering Management exposes its students to systems, management, business and engineering concepts, as well as applications. Its academic programs teach the knowledge and skills students need to effectively solve complex problems and manage multidisciplinary projects. Research areas include energy forecasting, supply chains, engineering decision making and risk management, and cognitive engineering and data mining.

Degree Programs

- Bachelor of Science in Systems Engineering
- Master of Science in Engineering Management

Concentrations

- Engineering Management
- Energy Systems

Engineering Technology and Construction Management

The Engineering Technology and Construction Management Department teaches students to apply current real-world knowledge and practices to solve specific technical and standard design challenges. Studies in civil, electrical, mechanical and fire and safety engineering technology integrate applications of mathematics, science, engineering and technology. Construction Management study areas include materials, construction methods, earthworks, building systems, project management and administration. Multiple paths to the BSET and BSCM degrees include students enrolling at UNC Charlotte as freshmen, transferring into the upper division of the 2+2 program after completing two years at a community college, or transferring a general transfer student. Faculty research fields include water resources, electro-mechanical systems, energy strategies, transportation infrastructure, building systems, wildfire, additive manufacturing and more.

Engineering Technology Degree Programs

- Bachelor of Science in Engineering Technology in the disciplines of:
 - Civil Engineering Technology
 - Electrical Engineering Technology
 - Fire and Safety Engineering Technology
 - Mechanical Engineering Technology
- Master of Science in Construction and Facilities Management
- Master of Science in Applied Energy and Electromechanical Systems
- Master of Science in Fire Protection and Administration

Concentrations

- Applied Energy (Electrical ET and Mechanical ET)
- Applied Energy and Sustainable Systems (Civil ET)
- Fire Protection (Fire Safety ET)
- Fire Safety (Fire Safety ET)

Construction Management Degree Programs

- Bachelor of Science in Construction Management
- Master of Science in Construction and Facilities Management

Concentrations

- Applied Energy and Sustainable Systems

Office of Student Development and Success

The college's Office of Student Development and Success (OSDS) offers a variety of academic and professional support programs designed to enhance the first-year experience and help students develop a passion and sense of pride for their Lee College of Engineering education and chosen profession by becoming self-motivated and independent learners, problem solvers and professionals.

OSDS programs include:

FRESHMAN LEARNING COMMUNITY

About half of all new engineering freshmen choose to live, learn and play in the FLC. As a community, FLC students learn about the engineering profession and what it takes to be successful in the major.

MAPS PROGRAM

The Maximizing Academic and Professional Success (MAPS) program helps students realize their potential by teaching them to work smarter - not harder. Trained upperclassmen serve as peer coaches to teach fellow students effective study habits, test-taking skills and time-management skills.

PROFESSIONAL DEVELOPMENT

The Lee College of Engineering provides a number of exciting opportunities to help students prepare for their careers and build a technical resume prior to graduation. Programs range from job shadowing opportunities with local professionals, to 49erships (internships), co-ops and international exchanges.

LEADERSHIP ACADEMY

The college's Leadership Academy equips undergraduates with the leadership competencies that engineering industry and communities need. The program selects 20-25 sophomores and juniors each fall. Engineering leaders from various companies help facilitate program activities.

INDUSTRIAL SOLUTIONS LABORATORY AND SENIOR DESIGN

The Industrial Solutions Laboratory partners with local companies to bring industry projects to the two-semester Senior Design program. The Senior Design program teaches students to apply their years of math, science and engineering knowledge by solving engineering challenges presented by local companies. The multidisciplinary projects simulate real-world practice, as students manage budgets, deadlines and conflicts to provide design solutions.

Research Centers

Energy Production and Infrastructure Center

With more than 200 energy engineering companies employing 20,000 people, the Charlotte region has become known as the Southeast's 'Energy Hub.' With backing from energy engineering companies, UNC Charlotte formed the Energy Production and Infrastructure Center (EPIC) in 2008 to educate trained engineers qualified to meet the demands of the energy industry. As a highly collaborative industry/education partnership, EPIC researchers also produce technical advancements for the global energy industry. Research areas include renewable energy, energy forecasting, Smart Grids, photovoltaics, power plant and distribution infrastructure, sustainable buildings, and energy environmental concerns.

Infrastructure, Design, Environment and Sustainability Center

The Infrastructure, Design, Environment and Sustainability (IDEAS) Center works to create dynamic and strategic project-specific research collaborations among UNC Charlotte faculty and staff, other institutions, regional/local agencies and the private sector. Thematic research areas are safe and sustainable transportation, materials and science for sustainable infrastructure, and environment and water quality. IDEAS is committed to integrating its work with undergraduate and graduate education programs, so that UNC Charlotte's graduates understand the challenges and can contribute to 21st-century solutions and advances.

Center for Precision Metrology

The Center for Precision Metrology (CPM) is an interdisciplinary association of UNC Charlotte faculty and student researchers, allied with industrial partners in the research, development and integration of precision metrology as applied to manufacturing. Originally supported as a National Science Foundation Industry/University Cooperative Research Center (NSFI/UCRC), the Center for Precision Metrology is charged with breaking new ground in precision metrology through addressing real-world industrial concerns. Through an associated Affiliates Program, industry and center researchers collaborate on projects involving generic and specific manufacturing metrology problems. CPM research includes methods of production and inspection in manufacturing, measurement, algorithms, tolerance representation, and the integration of metrology into factory quality systems.

Center for Advanced Multimodal Mobility Solutions and Education

In 2016, the U.S. Department of Transportation named UNC Charlotte as the lead institution on a five-year \$7.7-million project to establish the Center for Advanced Multimodal Mobility Solutions and Education (CAMMSE). Civil and Environmental Engineering leads this multi-institution center that includes Texas Southern University, the University of Connecticut, the University of Texas at Austin and Washington State University. CAMMSE conducts multi-disciplinary, multi-modal research, education and workforce development, and technology transfer. Research priority areas include reducing congestion, promoting safety, improving the durability and extending the life of transportation infrastructure, preserving the environment and preserving the existing transportation system.

Center for Biomedical Engineering and Science

Bringing together an interdisciplinary collection of faculty, researchers, clinicians and practitioners, the Center for Biomedical Engineering Systems (CBES) Charlotte provides an essential collaborative environment for solving biomedical issues. Established in 2005, the CBES research team currently consists of 68 affiliated researchers distributed across four UNC Charlotte colleges (Engineering, Liberal Arts and Sciences, Health and Human Services, and Computing and Informatics), and area biomedical research institutions (Cannon Research Center, OrthoCarolina Research Institute, and the Levine Cancer Institute).

North Carolina Motorsports Research Center

The UNC Charlotte campus is in the heart of NASCAR country, located within 50 miles of 90 percent of the NASCAR Cup teams. UNC Charlotte formed the NC Motorsport Research Center (NCMARC) in 2006 to better organize and support the research needs of the area racing industry. NCMARC brings together faculty researchers from Mechanical Engineering, Biology, Civil Engineering, Electrical Engineering, Engineering Technology, and Chemistry. Their research areas including powertrains, alternative fuels, coordinate metrology, fluid mechanics, CFD, stress analysis and more.

Facilities

Through the commitment and support of the State of North Carolina, the Lee College of Engineering has some of the finest engineering facilities in the country. Our classrooms, lecture halls, study areas, computer labs, and many research laboratories provide students with the best hands-on learning experience possible. Our academic departments are housed in six academic buildings representing 490,000 square feet of space.

Duke Centennial Hall is the home of the Mechanical Engineering Department. Duke Hall also houses the

Dean's Office, the Center for Precision Metrology, and the Center for Biomedical Engineering and Science. The 107,000-square-foot building contains state-of-the-art classrooms, lecture halls, laboratories, machine shops, computer labs, and computational and modeling facilities.

The Alan D. Kulwicki Motorsports Laboratory is named for the 1992 Winston Cup Champion and engineer, Alan Kulwicki. The 6,800-square-foot building is the primary laboratory for undergraduates in the Motorsports Engineering Concentration.

The 16-500-square-foot Motorsports Research Building houses NCMARC and provides lab space for motorsports graduate studies. It also has faculty and graduate student offices, and computational labs.

The largest academic building on campus, the 200,000-square-foot Energy Production and Infrastructure (EPIC) building is the home to two engineering departments; Civil and Environmental Engineering, and Electrical and Computer Engineering. Opened in 2012, the building also houses the offices of the EPIC research center.

One of the first buildings constructed on the UNC Charlotte campus, the Smith Building is the home to the Engineering Technology and Construction Management Department. It also houses the college's Office of Student Development and Support (OSDS) and freshmen programs.

The Systems Engineering and Engineering Management Department has classrooms and administrative offices on the second floor of Cameron Hall, and also has lecture halls and laboratories on the first floor.

THE ROLE OF DEAN OF THE WILLIAM STATES LEE COLLEGE OF ENGINEERING

Reporting to the Provost and Vice Chancellor for Academic Affairs, the dean is the chief academic and administrative officer of the College. The dean is a member of the Deans Council.

The dean will be supported by a leadership team consisting of the senior associate dean, the business officer, the communications specialist, the director of assessment and advising, the director of alumni affairs and external constituents, the chair of Civil and Environmental Engineering, the chair of Electrical and Computer Engineering, the chair of Mechanical Engineering and Engineering Science, the chair of Systems Engineering and Engineering Management, the chair of Engineering Technology and Construction Management, and an executive assistant. The dean's office works with the College's department chairs, school directors, staff, faculty, and students, as well as units across the University, to advance undergraduate and graduate education.

KEY RESPONSIBILITIES OF THE DEAN OF THE WILLIAM STATES LEE COLLEGE OF ENGINEERING

The Dean of The William States Lee College of Engineering will interact closely with the other senior officers, deans, and directors of centers, institutes, and programs. The Dean will provide leadership for a college that enrolls over 4,000 undergraduate and graduate students across five departments including 1) Civil and Environmental Engineering, 2) Electrical and Computer Engineering, 3) Mechanical Engineering and Engineering Science, 4) Systems Engineering and Engineering Management, and 5) Engineering Technology and Construction Management.

The Dean will:

- Advance commitment to and demonstration of the College's core values, including: diversity and inclusion; equitable and respectful treatment of each person; open and civil communication and free exchange of ideas; collaboration and teamwork; innovation and creativity; and continuous improvement;
- Work collaboratively to develop a strategic agenda for the College to grow its reputation regionally, nationally, and internationally;
- Support and grow a portfolio of nationally recognized and externally funded research that is relevant to the needs of the Greater Charlotte community and beyond;

- Develop a diverse leadership team for the departments, centers, and laboratories that supports excellence in instruction, research, and engagement;
- Strengthen collaborations within the College, university, and with external partners;
- Maintain and enhance instructional capabilities of the college including evaluation of current programs and exploration and development of new programming to best serve students, the City of Charlotte, and beyond;
- Serve as the external face of the college;
- Strengthen connections to College alumni;
- Maintain and enhance the financial strength through thoughtful management of resources and external fundraising; and
- Take up additional tasks and responsibilities, as appropriate and necessary, in consultation with leadership.

QUALIFICATIONS

The University seeks candidates who bring the following skills and experiences:

- Demonstrated scholarly and professional accomplishment commensurate with an appointment as a tenured full professor in the College and continued knowledge of advances in the field;
- A demonstrated commitment to UNC Charlotte's mission of access and diversity and to building an organization that values and practices diversity and inclusion, affirmative action, and equal opportunity;
- An ability to lead a diverse faculty community that encompasses an array of different disciplines through facilitation of a collegial environment and interdisciplinary, multi-sectoral communication and management skills;
- Demonstrated administrative ability to delegate, prioritize, and make timely, transparent, and collaborative decisions;
- Demonstrated network of personal relationships with commercial and industrial partners, federal laboratories and research institutions and international associations, companies and organizations;
- Experience with the alignment of resources with strategic goals;
- A record of effective budget management for a complex organization;
- Demonstrated fundraising experience and success;
- Experience facilitating significant research programs that address major challenges in the field;
- Ability to guide the development of curricula and programs that prepare students for rapidly changing fields;
- Demonstrated success in fostering collaboration, motivating others, and building effective working relationships with internal and external stakeholders;
- An informed grasp of key issues affecting faculty recruitment, retention, promotion, and scholarly productivity;
- Familiarity with national and regional issues affecting research and higher education; and
- The ability to be an effective spokesperson and strong advocate for the College.

EDUCATION

The Dean of The William States Lee College of Engineering should possess an earned Ph.D., or equivalent terminal degree(s), and possess a record of recognized achievement in leadership, service, teaching and research.

NOMINATIONS AND APPLICATIONS

The Search Committee will begin reviewing candidates immediately and will continue until the position is filled. Priority consideration will be given to materials received by **January 13, 2020**. Applications should include 1) a detailed resume and 2) a letter of interest that addresses the responsibilities and requirements described above, as well as the applicant's motivation to apply. To ensure full consideration, inquiries, nominations, and applications (PDF preferred) should be submitted electronically, in confidence, to:

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As an EOE/AA employer and an ADVANCE Institution that strives to create an academic climate in which the dignity of all individuals is respected and maintained, The University of North Carolina at Charlotte encourages applications from all underrepresented groups. The candidate chosen for this position will be required to provide an official transcript of their highest earned degree and submit to a criminal background check.

Contact Us: martin@buffkinbaker.com

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