

STRATEGIC PLAN
2022-2027

FORGING THE FUTURE

Dear Niner Engineering Community,

I am pleased to present the William States Lee College of Engineering 5-year strategic plan. The 30-member Strategic Planning Committee composed of faculty, staff, students, alumni and industry leaders actively partnered over the past year to develop this guiding tool. Together, they have designed a refreshed college map that not only aligns to the university strategic plan but also sets us up to forge our own future.

In addition to the committee, strong engagement from a broad cross section of our community has been essential to the strategic planning process. A total of 240 faculty, staff, students, alumni and members of the board of advisors were invited to participate. While 65% of those responded, an impressive 93% of respondents indicated positive support for the plan. All the feedback and insight we received is valuable in the process and has helped to advise our next five years of growth.

While the college strategic plan has a five-year timeline, it will be updated as needed to allow for continuing agility and leadership in the fast-changing engineering environment. This environment, the trajectory of technology and our research expertise strategically position us to lead in several key areas:

- advanced manufacturing and precision metrology,
- artificial intelligence and cybersecurity,
- transformational energy,
- smart and sustainable cities, and
- transportation and advanced mobility.

Focused in these areas, among others, and armed with the new strategic plan, the William States Lee College of Engineering is poised to expand its impact in education, research and the economy, graduating students that are real world ready to tackle the challenges facing our society in the future.

Thank you to the college strategic planning committee and our broader community for your guidance in developing this plan. As we now apply action to the plan, the William States Lee College of Engineering will forge the future for many years of growth and impact.

Sincerely,



Robert Keynton





Strategic Plan Framework Process

The William States Lee College of Engineering new strategic plan is the product of one year of intensive work, led by a 30-member strategic planning committee (“SPC”) and based on the input of 155 faculty, staff, alumni and members of the college board of advisors.

In 2021, Dean Robert Keynton appointed an SPC composed of faculty, staff, students, alumni and industry leaders and co-chaired by Dr. John Daniels and Dr. Yamilka Báez-Rivera. The SPC’s work was guided by our strategy consultant, Dr. Karen Singer-Freeman.

Dean Keynton charged the SPC with developing a dynamic and flexible 5-year plan through an intentional process that leveraged the input of faculty, staff, students, alumni and industry partners. The engagement activities and review of the plan were conducted electronically.

The SPC solicited input across faculty, staff, alumni and board of advisors. In addition to this input, the

SPC also analyzed strengths, weaknesses, opportunities and threats, and generated a draft plan that was then shared for review. There were 155 responses, with an overwhelming 93% support rate. This feedback affirmed that the plan would have a significant positive impact on the future of the College.

The SPC updated the Mission statement to include “convergent research,” which highlights the importance of solving complex problems that focus on impacting society. Likewise, the vision statement was refined to emphasize the creation of thought leaders and enhancement of student success. The Mission and Vision in this plan are the product of the same broad-based process from which the strategic plan arose.

The strategic plan, as a living document, will be updated as needed. The objectives, actions and metrics will be reviewed and revised as appropriate to ensure that the goals and vision remain achievable.

The Strategic Planning Committee

Yamilka Báez-Rivera, Co-Chair, Assoc. Chair,
Undergraduate Programs, ETCM

John Daniels, Co-Chair, Department Chair,
CEE

Henry Batten, Industrial Advisory Board,
ETCM

Cathy Blat, Assistant Dean for Student
Experiences, OSDS

Regina Caldwell '22, B.S.C.E.

Cara Chacko '15, B.S.E.E.

Harish Cherukuri, Professor and Department
Chair, MEES

Jim Conrad, Professor, ECE

Rob Cox, Professor ECE and Associate
Director of EPIC

Tim Fairchild, Industrial Advisory Board, SEEM

Stephanie Galloway, Director of Assessment
and Advising, LCOE

Courtney Green, Assistant Professor, OSDS

Andrew Hines, Industrial Advisory Board,
LCOE

Simon Hsiang, Professor and Department
Chair, SEEM

Sukumar Kamalasadan, Professor, ECE

Kristy Lowman, Advisor, CEE

Mike Mazzola, Director, EPIC

Ephraim Moges, Student

Brigid Mullany, Associate Dean for Research,
LCOE

Asis Nasipuri, Professor and Department
Chair, ECE

Tom Nicholas, Associate Professor and
Interim Department Chair, ETCM

Ertunga Ozelkan, Professor, SEEM

Bill Saunders, Lecturer, CEE

Deborah Sharer, Associate Professor and
Associate Chair, ETCM

Ron Smelser, Sr. Associate Dean of Academic
Affairs, LCOE

Stuart Smith, Professor, MEES

Amber Stern, Industrial Advisory Board, MEES

Allison Summers, Student

Brett Tempest, Associate Chair, CEE

Gary Teng, Professor, SEEM

Strategic Consultant

Dr. Karen Singer-Freeman

Our Mission

To transform lives, communities and industries through student-centered applied learning, powerful partnerships and convergent research*

*Convergent Research: solving complex problems that focus on impacting society

Our Vision

Globally recognized for innovative research, meaningful mentorship and a theory-to-practice education that creates thought leaders

The University of North Carolina at Charlotte

Our Goals

1

Empower students with the intellectual and professional skills to succeed and thrive in a changing world.

2

Grow a lifelong, inclusive, and connected community for all.

3

Elevate global research prominence in strategic areas.



GOAL



EMPOWER STUDENTS WITH THE INTELLECTUAL AND PROFESSIONAL SKILLS TO SUCCEED AND THRIVE IN A CHANGING WORLD.

Objective 1.1

Educate students to apply core competencies, conceptualize and solve complex systems, and think critically and ethically to advance society.

Tactics

1. Engage alumni, national thought leaders, board members and others key stakeholders to identify potential skill gaps needed for our students to maintain a competitive advantage now and throughout their careers.
2. Evaluate curriculum and student learning outcomes to ensure students acquire the critical skills necessary to succeed now and in the future.
3. Embed adaptive learning and other new learning pedagogies within our curricula to enhance student comprehension and knowledge of engineering fundamentals, principles and ethics.
4. Establish programs and procedures to provide faculty development opportunities around effective teaching methods and an understanding of how changes in their teaching impacts positive student learning.

Objective 1.2

Strengthen professional and life skills to enhance resiliency and adaptability.

Tactics

1. Explore seamless integration of experiential learning opportunities into all undergraduate curricula to expand, strengthen and increase student accessibility to professional work environments.
2. Enhance curricula to elevate student written and oral communication skills.



3. Discover techniques and methodologies for training students on how to be adaptable and resilient.
4. Create a platform for faculty to share best practices on how to integrate life skills such as adaptability, integrity, resilience, mental health, and mindfulness into their courses.

Objective 1.3

Engage students before, during, and after college through personalized and practice-relevant experiences.

Tactics

1. Create a new outreach coordinator position to engage middle & high school and community college students.
2. Strengthen our Summer Bridge Programs, Summer Camps, Open House, and Admitted Students activities as well as create new programming to better attract students and their families from all backgrounds.
3. Use predictive analytics and new intervention procedures to monitor student progress to increase success as well as to provide timely academic and remedial support.
4. Streamline curricula and create curriculum maps to provide clear pathways for students to graduate within four years and minimize debt.
5. Increase partnerships with industries and non-profits in the Charlotte region and beyond to significantly impact learning practices and experiences - study abroad, internships, experiential learning, undergraduate research opportunities and community engagement.
6. Expand alumni participation in senior capstone design activities, CAREER Fair events, continuing education and student employment opportunities
7. Increase presence on social media and marketing to increase awareness of programs, disseminate success stories and engage alumni and industry partners.



GOAL

2

GROW A LIFELONG, INCLUSIVE, AND CONNECTED COMMUNITY FOR ALL.

Objective 2.1

Promote individual growth, health and well-being.

Tactics

1. Develop a mindfulness program within the faculty and staff to develop interpersonal skills, self-awareness, leadership and mentorship.
2. Establish professional development and pedagogical training programs for faculty and staff to support their success and the success of students from all backgrounds.
3. To offer training and support to strengthen the growth mindset* of students, faculty and staff.
4. Create a competitive application process to support attendance at external professional development related to individual areas of desired growth.

**Growth mindset: thrive on challenges, develop your abilities*

Objective 2.2

Enrich mentorship and resources to support the success of faculty, students and staff.

Tactics

1. Encourage faculty to participate in mentoring programs to help graduate and undergraduate students become proud of their abilities, more resilient, self-confident, leaders of tomorrow and a desire for lifelong learning.
2. Strengthen our peer-to-peer mentoring programs and resources in the areas of research, teaching and leadership between new and senior faculty.
3. Improve advising along the student years by expansion of first-year advising, centralized advising, expansion of MAPS program, establish

professional and faculty mentors, and growth and diversification of mentorship among students.

4. Develop appropriate workloads that reflect the strengths of the faculty to help them succeed and provide professional development opportunities for faculty to improve how they can help students succeed.
5. Increase outreach with donors to increase student scholarships, reduce student debt and increase mobility.
6. Provide peer-to-peer and professional career development opportunities for staff, and increase opportunities for advancement within the College.

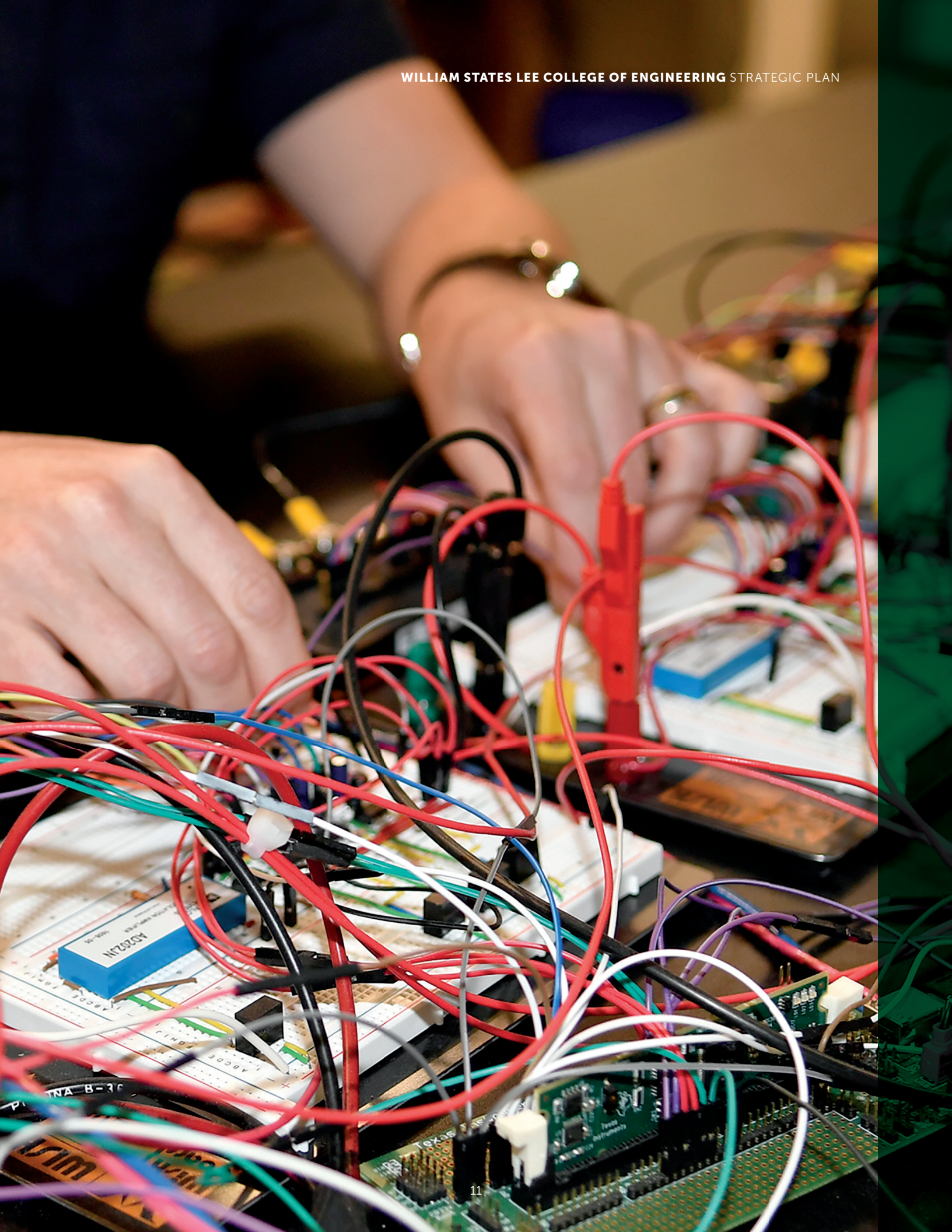
Objective 2.3

Promote integrity, respect, and a culture where diverse persons of any background are invited, included and treated equally.

Tactics

1. Create volunteer opportunities for faculty, students and staff to work together to increase the relationship with the Charlotte and University area to help the community thrive.
2. Broaden job descriptions to attract a larger pool of highly qualified applicants.
3. Increase lectures from speakers who are from different backgrounds to open communications on a variety of topics for students, faculty, staff and participating community members.
4. Increase recognition of faculty, staff and student successes that promote collaboration as well as the mission and vision of the College.
5. Create affinity groups to increase network activities to encourage faculty, staff, and students to discuss topics of interests, collaboration, and identify needs.
6. Create a mechanism to collect and respond to needs identified by the affinity groups.
7. Increase presence on social media and other platforms to enhance communication with students, faculty and staff about external and internal issues.





GOAL **3**

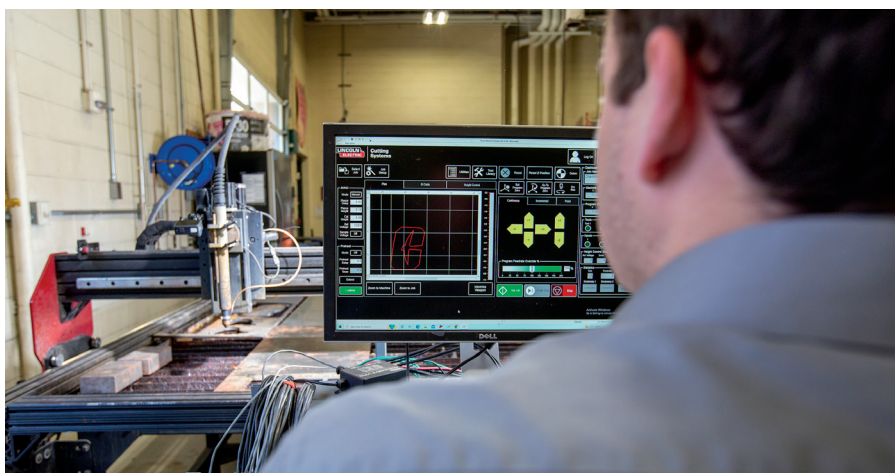
ELEVATE GLOBAL RESEARCH PROMINENCE IN STRATEGIC AREAS.

Objective 3.1

Facilitate and catalyze multidisciplinary and multi-institution research.

Tactics

1. Work with Research and Economic Development to provide seed funding to form partnerships with other institutions and/or related disciplines.
2. Invite potential team members/institutional representatives to campus.
3. Increase participation in the University Research Symposium.
4. Implement a College of Engineering Research Speaker Series to engage colleagues from the college, university and external institutions.
5. Identify and support faculty members to lead multi-institutional project/center proposal efforts.
6. Create explicit recognition and incentives for effective participation in research teams.



Objective 3.2

Increase research, innovation and scholarly activities.

Tactics

1. Create pathways for increasing curiosity, passion and fulfillment in research by building synergistic groups and hiring new faculty to strengthen these areas.
2. Increase recognition of research excellence through annual research awards programs, increased number of distinguished professorships and scholar opportunities.
3. Provide non-salary incentives such as seed funding, TAs, post-docs, enhanced staff and equipment support to facilitate research programs.
4. Ensure workload policies and annual review process support research activity.

Objective 3.3

Enhance research visibility and impact.

Tactics

1. Provide support for generating professional websites and videos, increasing social media presence and creating marketing materials to highlight research successes targeted at key influencers.
2. Strengthen mechanisms and programs to support faculty in the development of innovations and commercialization of ideas.
3. Increase faculty receiving national and international awards, professional society fellows, scholar awards, and elected to leadership positions in national and international organizations.
4. Develop mechanisms and processes to support faculty in publishing their research in high-impact journals and conferences.



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COLLEGE OF ENGINEERING

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