

Herff College of Engineering Strategic Planning

Dr. Okenwa Okoli

Dean and Professor

Herff College of Engineering

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Herff College of Engineering



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Agenda

Herff College of Engineering



- Welcome and introductions
- Reflections on where we are
- Creating a 5-year strategic plan





US News Best Colleges & Universities Rankings (UofM-Herff CoE)

Name of Survey	Specialty Ranking	2024 Ranking	2023	2022	2021	2020	2019
Best Graduate Engineering		160	152-200	154-202	152-200	NR	145
	Biomedical - UofM/UTHSC partnership*	113	108	98	101	101	
	Civil Engineering*	140	143	134	143		
	Computer Engineering*	137	129	146	134		
	Electrical Engineering*	172	165	170	168		
	Mechanical Engineering*	166	153	170	172		



- Increase enrollment
 - BS Student growth – double to 235 degrees awarded per year
 - Graduate Student growth – double MS degrees to 80 and PhD degrees to 25 per year
- Grow research expenditures to \$25M per year
- Improved talent management
 - Attract and retain high-quality faculty (47 tenure-track faculty – Jan 2023)
 - Increase endowed chairs and professorships
 - Grow staff
- Increase private funding to \$1.5M per year
- Increase visibility and reputation
- Ranking – building the brand



- Since the last strategic plan for the college in 2014, the Herff College of Engineering has made significant progress in undergraduate retention and success, research productivity, and doctoral graduates
 - Retention and graduation rates for undergraduates have increased
 - Majority – Minority retention and success gaps have decreased
 - BS graduates have almost doubled
 - Research expenditures increased ~\$3.5M (from 2021)
 - Doctoral Graduates have more than doubled
- Major initiatives and strategic investments are identified to sustain and accelerate the progress that college has achieved
 - As student demographics change, increase accessibility to undergraduate engineering programs focused on transfers, international students, and increased preparation of incoming freshmen
 - Grow doctoral and research programs by streamlining PHD curricula and processes, increasing amount of time that faculty can spend on research and doctoral advising, and providing more staff support for graduate and research programs

Accomplishments 2022-2023



- Degrees Awarded – 2021-2022 Data
 - BS: 205 (Increase from 105 in 2014-2015)
 - MS: 19 (Decrease from 30 in 2014-2015)
 - PHD: 21 (Increase from 7 in 2014-2015)
- Research Activity
 - FY20 = 7.5ML, FY21 = 9.8ML, FY22 = 10.1 ML
 - Research expenditures increased ~\$3.5M from FY21 to FY22. (8.1M to 11.6M)
- Enrollment on-ground and on-line – Fall 2022 Data
 - Undergraduate: 1075
 - Masters: 99
 - PHD: 90
- Other
 - New Dean
 - One year retention in College of FTF: 73.3% (53.8% for F2014 cohort)
 - Black retention: 74%
 - Construction of STEM Research and Classroom Building started
 - IDCR increased \$437,272 to \$719,800
 - Bronze-level Recognition for the ASEE Diversity Recognition Program



- We shall operate from a mindset of abundance rather than one of scarcity
- HCoE will be thought leaders open to an interdisciplinary approach to creative problem solving as we face the challenges of a 21st century world
- We will foster a collaborative, and inclusive learning environment mindful of our diversity, where all can thrive
- We will set our sights high through research and creative endeavors that encourage “anything is possible” thinking – transformational research
- We will promote servant leadership with an understanding of shared governance where all voices are heard
- In all things we will act to engage our stake holders with a particular focus on our local community



- Increase the current research expenditures to over \$35M
 - Establish R1 research focus areas in
 - Advanced manufacturing, AI, aerospace, biomaterials and imaging, transportation
- Strategically **increase** the graduate student population to over 400
 - **300** PhD students (3 PhD students per faculty – **75 TT faculty**)
 - Industry targeted Online MS programs – potentially over 150 students
- Collaborate with industry
 - Transportation hub - 3rd busiest trucking corridor in the U.S.
 - Home to national/international corporate and biomedical research entities including FedEx and FedEx Logistics, AutoZone, International Paper, St. Jude Children's Research Hospital, and Service Master
 - Hub for medical device manufacturers including, Medtronic, Smith +Nephew, Stryker
 - Huge manufacturing presence – Ford, and affiliated industries
 - Nearby space and aerospace presence – NASA, and affiliated prime contractors
 - Opportunities for embedded corporate presence – research park (?)
 - Empower start-up initiatives
- Seek large national grants
 - College wide support for research excellence
 - DoD Multidisciplinary University Research Initiatives (MURI) Program
 - Targeted faculty recruitment based on NAE Grand Challenges – Energy, Clean water, Urban infrastructure, Emulating human intelligence, Engineer better medicines, etc.
 - Nurture 2-3 ERC topics within the College



- Memphis and the State of Tennessee are going through a crucial growth spurt with prominent industries demanding trained labor to meet needs
 - Ours is the largest college of engineering in West Tennessee
 - However, student population needs a radical increase to meet needs
- Moving the Herff College of Engineering forward will mean
 - Radically increasing undergraduate student enrollment
 - Potentially doubling the College enrollment
 - Is recruitment a problem? How do we sell our programs?
 - Outcome based approach
 - Demographic cliff – thanks to lower birthrates during the recession
 - We need to take advantage of what we have... why not harness our local population?
 - Low exposure to math and science...
 - Consider work arounds
 - Bridge programs, Engineering Living and Learning Community
 - Scholarships, etc.
 - Transfer programs – local and international
 - Dual enrollment



- Ranking
 - Marketing We need to make a loud and joyful noise
 - Tell our unique story
- Alumni engagement – tell our story
- Service to the community – this is our story
- External fundraising - corporate relations
 - Student success: Scholarships, Graduate fellowships
 - Endowed Professorships, Facilities, etc.

Until lions have their own historians, tales of the hunt shall always glorify the hunter (Igbo).



- President Bill Hardgrave unveiled Ascend, the University's first Strategic Plan as a Carnegie I institution after approval from the UofM Board of Trustees (<https://www.memphis.edu/strategic-plan/>)
 - Strategic Plan highlights the Herff College of Engineering with a greater emphasis on STEM along with a focus on outcomes, a holistic student experience, broadening the UofM's reach nationally while creating access for learners of all backgrounds and strengthening the research enterprise as well as other items.
- As we begin our planning based on President Hardgrave's vision our deliberations should amongst others, include:
 - Maintaining our R1 status, and aiming to be recognized nationally, and the #1 Flagship in TN
 - Student recruitment, retention and success
 - Impacting workforce development in our local community, state and nation through engineering education
 - Redesigning of our program around the grand challenges
 - Transformational research encouraging start-up initiatives



- We must align with President Hardgrave's plan
- University deadline for completion – December 2023
 - Implementation – January 2024
- Our deadline for completion – October 2023
- Four suggested steps:
 - Develop the situation analysis – gather data
 - SWOT analysis, secondary research, interviews, benchmarking, listening sessions
 - Strategy formulation – setting the MVGP
 - Mission – our purpose
 - Vision – our future, our aspirations
 - Goals – measurable, but aim high
 - Principles – guiding us through what we do
 - Operationalization
 - Operating model – admin structure to oversee plan
 - Implementation plan – KPIs, projects, tasks, and the individuals responsible, timeline
 - Financial modeling – budget line items
 - Implementation
 - Task execution
 - Change management
 - Performance monitoring



- Meeting schedule
 - Committee – weekly
 - Co-leads with Dean – bi-weekly or as needed
- Monthly status reports on milestones
- Documentation should be provided at the end of exercise by committee
 - To include Mission statement, vision statement, and strategic goals
 - Implementation plan that includes metrics/targets
 - KPIs to measure progress towards goals
- Committee will prioritize list of signature/ strategic priorities (?) and develop an implementation plan
- Roll out - series of SP launch events!!