

# Lori Mann Bruce

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## PROFESSIONAL EXPERIENCE

Provost and Vice President for Academic Affairs, Tennessee Tech University, 2018-present

Associate Vice President for Academic Affairs and Dean of the Graduate School, Mississippi State University, 2013-2018

Associate Dean for Research and Graduate Studies, Bagley College of Engineering, Mississippi State University, 2008-2013

Giles Distinguished Professor, Mississippi State University, 2012-2018.

Executive Director, High Performance Computing Collaboratory, Mississippi State University, 2008-2010

Director, Raspet Flight Research Laboratory, Mississippi State University, (Interim), 2010-2012

Associate Director of Geosystems Research Institute, Mississippi State University, 2006-2008

Professor of Electrical and Computer Engineering, 2006-present

Associate Professor, Mississippi State University, 2003-2006

Assistant Professor, Mississippi State University, 2000-2003

Assistant Professor, University of Nevada Las Vegas, 1996-2000

Engineer, Product Developer, Marketing, and Sales, DiAcoustics, Inc, 1995-1996

Graduate Researcher and University Instructor, The University of Alabama in Huntsville, 1995-1996

NSF Graduate Research Fellow, 1992-1995

Teaching Assistant, Georgia Institute of Technology, 1991-1992

Technical Staff, U.S. Army Strategic Defense Command, 1987-1990

## EDUCATION

Ph.D., Electrical & Computer Engineering Department, The University of Alabama in Huntsville

M.S., Electrical Engineering and Computer Engineering Department, Georgia Institute of Technology

Biomedical Engineering Graduate Certificate Program - Georgia Tech/Emory Medical School

B.S.E., Electrical & Computer Engineering Department, The University of Alabama in Huntsville

## EXECUTIVE SKILLS

Strategic Vision & Leadership

Entrepreneurial Mindset

Interpersonal & Communication Skills

Financial Acumen

Cultural Competency & Inclusivity

Political & External Relations

Change Management

Crisis Management

## ADMINISTRATIVE EXPERIENCE

### **Provost and Vice President for Academic Affairs, April 2018-present (Tennessee Tech University)**

As Provost, my responsibilities include providing leadership and academic oversight for eight academic colleges, 32 academic departments and schools, and 20 support units, offering 200+ programs of study to more than 10,000 undergraduate and graduate students. These units are composed of approximately 825 employees, housed in 28 academic buildings, and funded with an annual E&G budget of approximately \$90 million.

#### **Student Enrollment**

- Increased undergraduate enrollments by 9.4% over the past three years
- Increased graduate applications and admissions by approximately 80% over the past three years
- Led a university-wide team to overhaul undergraduate recruitment events, such as our fall Preview Day, Spring Showcases, and VIP family tours
- Led an initiative to better utilize foundation funds for competitive, early awards of “guaranteed” undergraduate scholarships
- Led the development of internal data dashboards, so departments can see real-time enrollment funnel data for freshmen, transfer, and graduate students
- Instituted the use of a new, advanced CRM for improved communications with and management of student applicants
- Facilitated a six-sigma/lean overhaul of admissions processes to ensure timely admissions decisions
- Led initiatives for competitive marketing/advertising campaigns for new and under-enrolled graduate programs

#### **Student Success and Retention**

- Significantly improved undergraduate student success metrics while also increasing student diversity and university access
  - Increased the six-year graduation rate from 51% to 58%
  - Increased the number of total degrees awarded annually per 100 students from 21 to 30
  - Increased the percentage of Pell-Eligible students from 42% to 48%
  - Increased the percentage of first-generation students from 41% to 50%
  - Increased the percentage of minority students from 16% to 22%
- Created a university-level academic advising center for first-year undergraduates, locating the LaunchPad in the university’s Volpe Library. It serves as a one-stop-shop for students to receive academic, as well as financial and social, advising.
- Led an initiative to enhance and in some instances redesign “gateway” courses in math, physics, chemistry, and English – courses where a DFW has a high correlation to low student retention.
- Led an initiative to empower academic advisors to actively monitor students’ class attendance and early-semester grades to identify those at academic risk. Advisors then intervene through direct outreach, offering personalized support and resources to help students improve their performance and stay on track.

## **Academic Excellence**

- Achieved a perfect score of 100 by the state for the quality of the university's academic programs (the first university to achieve a perfect score in the 40+ years Tennessee has had the Quality Assurance Program)
- Successfully led the development and submission of the university's SACSCOC 5<sup>th</sup> Year Interim Report and received approval for a differentiated review for the university's upcoming SACSCOC reaffirmation.
- All academic programs successfully obtained/renewed accreditations and/or program reviews.
- Gained state approval for and launched multiple new academic programs, including three PhD, three Master, and seven Bachelor degree programs, as well as numerous new degree concentrations, minors, and certificates.
  - PhD, Computer Science
  - PhD, Counseling & Psychology
  - PhD, Higher Education
  - Master of Arts, Learning Design & Technology
  - Master of Science, Community Health & Nutrition
  - Master of Science, Engineering Management
  - Bachelor of Science, Animal Science
  - Bachelor of Science, Design Studies
  - Bachelor of Science, Music
  - Bachelor of Science, Nuclear Engineering
  - Bachelor of Science, Studio Arts

In final stages of approval by Board of Trustees and State, slated for Fall 2025 launch

- Master of Science, Child Life
  - Master of Science, Agriscience Technology
  - Bachelor of Science, Interdisciplinary Computing
- Center for Advancing Faculty Excellence (CAFÉ) - Launched a university-wide program to promote and provide opportunities for faculty professional development in areas related to teaching, research/creative works, scholarship, leadership, and career development. This effort significantly expanded opportunities for faculty to participate in internal and external workshops, seminars, conferences, mini-grants, sabbaticals, etc.

## **Research and Scholarship**

- Led multiple initiatives to increase faculty-led extramural funding resulting in an increase in extramural grant/contract awards from \$16million in 2018 to \$46million in 2024, with a projection of \$60million for 2025.
  - Launched an on-going series of professional development initiatives designed to increase the overall number and success rate of faculty-led extramural proposals
  - Established a university "Cluster Faculty Hiring Program", with centrally supported advertising, start-up packages, and mentoring program, with the first two clusters being cybersecurity and artificial intelligence.
  - Established a structured research start-up package program for new faculty hires
  - Developed and shepherded through shared governance processes a new faculty workload policy that better enables faculty release time for research and scholarship
  - Initiated a partnership with a federal government relations firm to assist with funding requests for large-scale multidisciplinary research initiatives
  - Worked closely with the vice president for research to ensure the necessary research administrative services are in place to support faculty members and empower them to focus on their disciplinary work rather than grants administration tasks

## **University Infrastructure**

- Worked closely with architect firm on development of campus master plan, creating academic themed corridors throughout campus, as well as a public art trail.
- Successfully led proposal development teams to garner state funding for construction of multiple new academic buildings and major renovations of existing buildings and worked closely with chief financial officer and architect/construction teams for successful planning and construction.
- \$90million 160,000 square foot Lab Science Commons and Stonecipher Lecture Hall, first LEED certified building on campus. Successfully led academic team through final phases of design, construction, and move-in.
- \$70million 100,000 square foot Ashraf Islam engineering building. Personally authored proposal to the state, led university team for building program and design, led university team to value engineer design during a period of dramatic inflation in building costs, partnered with development officers to secure donation to name the building, and led team for grand opening.
- \$100million 80,000 square foot advanced construction and manufacturing engineering building. Personally authored proposal to the state, led university team for building program and design, led university team to value engineer design during a period of dramatic inflation in building costs, partnering with development officers to secure donations to name major sections of the building.
- \$100million 90,000 square foot social sciences building. Led the team to author proposal to the state, have been awarded state funding for design phase, currently working with architectural design teams to program the building and complete preliminary designs of the building.
- Successfully led teams for several major projects to completely gut and renovate four academic buildings: one for Curriculum and Instruction; one for Earth Sciences; one for Math, Computer Science, and Physics; and one for the College of Business. All of these projects required strategic movement of departments to swing spaces, fund-raising for matching funds, and programming/design of new spaces. The first three projects have completed, and the academic units have returned to their new spaces. The fourth project has passed through the design phase and is now entering the construction phase.

## **Crisis Management**

- Successfully led academic affairs, as well as the university during the President's absence, through several university crises. I personally led teams of the President's cabinet and academic leadership teams including Deans, Chairs, and Faculty Senators, to make timely decisions and take judicious actions related to campus-wide communications; public communications; coordination with city and county officials; coordination with state representatives (THEC, state legislators, state attorney general's office, etc); campus closures; resource reallocations; policy interpretations, waivers and/or revisions; etc. I also led leadership teams in post-crisis debriefs to assess and potentially revise protocols, procedures, policies, and resource allocations, based on lessons learned. With some of the crises, great care had to be taken to ensure the university appropriately balanced academic freedom and freedom of speech with the need to maintain institutional operations.
- The following are the major university crises for which I provided university leadership:
  - Tornado – In February 2020, an EF-4 tornado struck Cookeville (very near to campus) causing widespread destruction, leveling homes and businesses, and tragically killing 19 individuals. The university closed for several days, organized opportunities for students, faculty, and staff to participate in recovery efforts, and provided on-campus and community support via counseling services, access to clothing and food pantries, temporary on-campus housing, etc.
  - COVID19 – In March 2020, the university closed temporarily due to the COVID pandemic and reopened with all academic programs being delivered fully online. Prior to this event, fewer than 5% of all faculty members had taught an online course at Tennessee Tech. In

July 2020, the university returned to fully in-person staffing. And the academic programming transitioned to approximately 67% online in fall 2020; 33% online in spring 2021; and approximately 15% online fall 2021 to the present.

- Active Shooter – In February 2024, the university experienced an active shooter on campus. The shooting occurred in the early evening when a variety of academic courses were in session; a basketball game was in progress in the arena; and students, faculty, and staff were active in a variety of areas of campus. The university went into lockdown for several hours until the shooter was taken into custody.
- Negative National PR – In January 2021, fliers were distributed on campus that targeted a faculty member and a group of students for their perceived conservative ideologies. The fliers called out individuals by name, referred to them as criminals, called for their removal, and invited others to harass and intimidate them. The situation resulted in national media coverage, sparking concerns over academic freedom, freedom of speech, and targeted harassment.
- Negative National PR - In September 2022, a drag show at the university sparked controversy after a video of the event circulated online, showing a performer in front of an audience that included children. The situation resulted in significant national media coverage and fueled campus and public debate over free expression, LGBTQ+ representation, and age-appropriate entertainment in public spaces.
- Litigation – During the past five years, the university has dealt with multiple lawsuits related to personnel actions and civil rights, such as wrongful termination, freedom of speech, and gender discrimination.

## **Fundraising**

- Participated in the design and scoping of a university capital campaign, which is currently in its silent phase and has raised approximately \$75million thus far.
- Collaborated with development teams and external stakeholders to secure funding for academic programs, research initiatives, and faculty endowments. These efforts have resulted in some of the first endowed professorships for the university.
- Championed strategic partnerships with donors, corporations, and grant agencies, leading to increased philanthropic support for institutional priorities. These efforts have resulted in the naming and financial endowments for teaching labs and research labs, as well as student scholarships.
- Played a key role in securing a multimillion-dollar gifts for the construction of new academic buildings, including the Ashraf Islam Engineering Building.

## **Financial Stewardship (**

- Spearheaded a university-wide employee compensation study resulting in significant compensation increases for three consecutive years. With the upcoming third year increases, the project will have moved the faculty salaries, as a whole, from 7% below the market median to approximately 3% above the market median and the staff salaries as a whole from 16% below the market median to approximately the market median.
- Collaborated closely with the CFO to build and manage the university's budget through both periods of financial constraint and growth. Co-led a university strategic budget planning committee made up of faculty, staff, students, and administrators to review current budgets and to make recommendations on budget reallocations and investments of new revenues.
  - Increased Academic Affairs fiscal gain (E&G revenue to instructional cost ratio) from 2.0 to 2.4.
  - Increase the University's Composite Financial Index (CFI) from 2.3 to over 4.7, surpassing our peer institutions in Tennessee.

### **Associate Vice President and Dean of the Graduate School, 2013-2018 (Mississippi State University)**

As AVP and Dean, my responsibilities included providing academic leadership for and shared oversight of the more than 800 graduate faculty and approximately 3500 graduate and professional students participating in more than 150 graduate programs across campus. Responsibilities included

#### **Selected Accomplishments:**

One of my major focuses was on graduate enrollment management, including new initiatives in building the brand and image of graduate education at MSU, development of new graduate programs within various departments across the university, strategically marketing programs, launching new student recruitment activities, and modernization of the university's graduate admissions processes. Accomplishing these goals required partnering with college deans, mentoring department heads and graduate coordinators, building consensus among the faculty, and managing an office of approximately 20 staff members. As a result, our graduate admission applications increased by 10%, selectivity rates improved by more than 10 percentage points resulting in higher national rankings of academic programs, and graduate enrollment increased by 5% with an increase in new graduate students by 8%.

### **Associate Dean for Research and Graduate Studies, Bagley College of Engineering, Mississippi State University (2008-2013)**

While serving in the college leadership team, the College had approximately 2700 undergraduate students, 625 graduate students (300 MS and 325 PhD), 100 academic faculty, and 100 research faculty, post-docs, and research staff. The College housed 8 academic departments and approximately 10 research centers. NSF ranked the College in the top 10% of engineering colleges in the nation in terms of its annual research expenditures which exceed \$70million (approximately \$55million/year). As Associate Dean, my responsibilities included providing leadership and administrative management of all research, graduate programs, distance education programs, and industrial outreach and economic development activities.

#### **Selected Accomplishments:**

- Led the development of a research strategic plan for college, resulting in the selection of six research thrust areas for strategic college-level investments, including start-up packages, cost-share, infrastructure investments, and faculty working group funds.
- Successfully led college's research enterprise through transition from reliance on federal initiatives to majority competitive funding, while maintaining a ranking in the top 10% nationally by NSF.
- Coordinated the funding of all faculty start-up packages, including the coordination of funds from Dean's office, VP for Research, and Departments/Centers. Mentored junior faculty's establishment of research programs, with 5 NSF CAREER awards.
- Oversaw the college's industrial outreach and economic development activities, resulting in over \$5.5 Billion in economic impact and more than 2,300 industrial jobs created or retained in Mississippi, as reported by NIST.
- Led college-wide graduate student recruitment efforts, fellowship application workshops, professional development workshops – resulting in college graduate enrollments increasing by 15% (545 to 625) and PhD graduation rates increasing by 100% from approximately 20/year to 45/year.
- Partnered with development officers to raise private funds for doctoral fellowships, expanding our PhD fellowship program to approximately 55 PhD fellowships per year.

- Oversaw college's distance learning programs, resulting in launch of 6 additional graduate distance programs and growth of distance enrollments by 100% (100 to 230) and a US News and World Report ranking of 12<sup>th</sup> nationally.
- Established the college's Distinguished Lecture Series, including lectures by Dr. Subra Suresh, Vannevar Bush Professor and Dean of Engineering, MIT and since named as Director of NSF, and Dr. Neil deGrasse Tyson, Frederick P. Rose Director of Hayden Planetarium, American Museum of Natural History and Host of Nova ScienceNOW.
- Established Think Big @ Mississippi State program, a college-wide innovation contest where student teams propose projects aligned with college's six research thrust areas. Winning teams receive up to \$10,000 and faculty support to carryout projects.

#### **Interim Director, Raspert Flight Research Laboratory (2010 – 2012)**

The Raspert Flight Research Laboratory (RASPET) is a college-level research center, established in 1948, with a focus on low-speed aerodynamics, composites, and unmanned aerial systems (UAS). RASPET's infrastructure includes two large hangers (>80,000 square feet), composite storage and fabrication rooms, extensive machine shops, CNC machines, walk-in ovens, autoclaves, engine test cells, electronics shop, structural test area, and seven general aviation aircraft (six fixed-wing and one rotary wing), as well as multiple UAS, including two pilot-optional aircraft designed, prototyped, and flight tested for the U.S. Army. RASPET has full-time research and administrative staff and three part-time pilots. As Director, my responsibilities included providing leadership and administrative management of all research, teaching, and economic development activities at RASPET.

#### **Associate Director, Geosystems Research Institute, Mississippi State University (2006 – 2008)**

The Geosystems Research Institute (GRI) is a research leader in geospatial information systems, remote sensing, data/image visualization, data fusion, scientific modeling, and high-performance computing with applications to coastal zone management, precision agriculture, and homeland security. GRI performs funded research for DHS, DOD, DOT, NASA, NOAA, NSF, USDA, USGS, and other state and local agencies and industry. While Associate Director of GRI, its external funding was approximately \$28 million/year to support 75 active research projects involving more than 50 faculty and over 100 students and post-docs. GRI is a member of the university's High-Performance Computing Collaboratory (HPC<sup>2</sup>), housing and providing system administration for MSU's supercomputing clusters, regularly ranked in the top 20 most powerful academic computing sites in the U.S.



## KEY FACULTY ACCOMPLISHMENTS & RECOGNITIONS

Taught approximately 50 sections of 17 different courses at the undergraduate, split, and graduate levels, resulting in more than 3000 student credit hours (excluding dissertation and thesis hours)

Maintained a high level of dedication to teaching, resulting in instructor evaluation scores averaging 4.5/5.0, where the Bagley College of Engineering and the Electrical and Computer Engineering Department averages are 4.0 and 3.9, respectively

Developed new graduate and undergraduate courses in the areas of Digital Image Processing, Automated Target Recognition, Biomedical Signals and Systems, and Medical Imaging, as well as conducted complete overhauls of various existing courses

Served as major professor (thesis or dissertation chair) for more than 20 PhD and Masters students

Served as thesis/dissertation committee member for more than 50 PhD and Masters students

Received various teaching awards and faculty appreciation awards from university alumni associations and student chapters of Society of Women Engineers, Tau Beta Pi, and National Society of Black Engineers

Served as PI or Co-PI on more than 25 federally-funded grants and contracts, totaling more than \$20million

Published 150 refereed, archival, scholarly publications that have been cited more than 6000 times resulting in citation indices of h-index = 31 and i10-index = 74

Served as conference chair or on organizing committee for multiple national and international research/scholarship conferences

Invited to be keynote/plenary speaker at multiple national and international conferences

IEEE, Distinguished Lecturer (2016-2020) – Selected by the Geoscience and Remote Sensing Society as one of 10 international Distinguished Lecturers, including only 5 from the US. In this role, I gave keynote lectures and plenary talks in the US, France, Italy, Japan, China, and India, as well as online webinars with thousands of participants from more than 20 countries.

Elected to serve on the Administrative Committee (AdCom) which provides international leadership for the IEEE Geoscience and Remote Sensing Society (GRSS) from 2016 to 2020. Served as Chair of Programs for Underrepresented Members (women and minorities). AdCom has approximately 15 voting members that provide leadership and administrative oversight for GRSS which has approximately 4200 members in 79 chapters in 94 countries, with an annual operating budget of more than \$1million. During my time on AdCom, I co-led the establishment of an international “Women Mentoring Women” program, designed to assist early-career and mid-career women with professional development and career success.

Mississippi State University, Giles Distinguished Professor – This was a life-time honor, with typically no more than eight professors holding the title at any given time.