CURRICULUM VITA

MAGESH T. RAJAN, Ph.D., P.E

Vice President for Research and Innovation
Prairie View A&M University | Texas A&M University System

EXECUTIVE SUMMARY

A visionary, strategic and inclusive higher-education leader with unique blend of academic, research and entrepreneurial business leadership experiences for over 20 years. Currently serving as the Vice President at the Texas A&M University System Prairie View A&M University, and providing vision and strategic leadership for the university's three campuses, serving 9,000 students and 1,300 faculty and staff's interdisciplinary research, innovation, and scholarship for broader societal and economic development activities with overall fiscal management of $100.8 million across 36 academic programs in 8 colleges (Engineering, Arts & Sciences, Business, Education, Nursing, Agriculture, Architecture, Psychology & Juvenile Justice). Previously, provided successful leadership as Department Head with Dean's fundraising responsibilities, management for all academic, fiscal, and student affairs. Successful leadership experience as Executive Director for Plasma Engineering, and over ten years of entrepreneurial experience in founding and leading three successful technology-based start-up companies.

HIGHLIGHTS OF LEADERSHIP ACCOMPLISHMENTS

- **Vision & Leadership:** Elevated the land-grant university from Masters Institution status to the prestigious Carnegie R2 High Research Activity Doctoral Institution within 3 years, with overall fiscal management of $100.8 million. Developed and successfully executed four transformative and inclusive visions and strategic plans successfully during my career. Demonstrated bold and resilient leadership for growth and excellence despite the challenges of the global pandemic.
- **Diversity, Equity and Inclusion:** Leadership experience at diverse institutions including Minority and Minority Serving Institution (MI/MSI), Hispanic Serving Institution (HSI), Historically Black University (HBCU). Increased faculty diversity by 50%, supported over 300 underrepresented students, created staff equity initiative, led through inclusive and shared governance.
- **Research Affairs:** Despite COVID-19 disruptions and budget restrictions, increased the extramural funding by 235% from $14M FY18 to $47M FY21. Increased Restricted Research awards by 140%, from $8.5M (FY18) to over $20M (FY21). Doubled proposal counts to 300+ and doubled proposal funding to $200M. Increased sponsored expenditures by 90% to $37M (FY21). Oversight of 6 research centers and institutes with a $37M fiscal operations.
- **Academic Affairs:** Created and launched Ph.D. degree program in Electrical Engineering, launched several minor degree programs in Electrical; Electronics; and Systems Engineering. Developed BS degrees in Electrical; Mechanical Engineering, Online Mechanical Engineering Technology. Led several cycles of successful program and university accreditations such as ABET, SACSCOC, HLC, etc. Demonstrated rigor and academic excellence through achieving national rank (Top 24th) and increased the program visibility nationwide.
- **Student Affairs:** Increased student enrollment by 350% in MS Electrical Engineering. Implemented new BS in Mechanical Engineering program with enrollment grew from 75 to 400 students, 433% growth over 5 years. Established partnerships with international organizations to support prospective students, with 400% increase in international applications. Led partnerships with regional high-school and community colleges for enrollment pipeline.
- **Fundraising & Advancement Affairs:** Established a strong alumni, donor and corporate engagement and relationship. Raised over $6 million in support of faculty and student success. Provided stewardship for a $2.3 million development funds, with over $0.5M in cash and $1M in in-kind donations from corporate partners. Launched a 100-year anniversary fundraising campaign with a $10M target for a new academic and research building.
- **Innovation & Community Economic Prosperity:** Created four new offices for Innovation, Commercialization, Entrepreneurship, and Economic Development with significantly increased support services, executed 45 IP portfolio partnerships, 20 MOU's, and 16 start-up companies. Leading the development of a 50 acre, $100 million Innovation-Economic Development Corridor for the region, including a $10 million Innovation-Entrepreneurship Center to boost the 5,300 jobs creation, $766 million / year and $3.9B long-term economic impacts on the State of Texas.

- **Fiscal & University Infrastructure Management:** Provided leadership and oversight for managing a $100.8 million fiscal budgeting and operations. Significant experience in organizational strategic leadership with business acumen augmented through the management and entrepreneurial experience. Demonstrated 125% growth in the fiscal budget. Provided stewardship for over $70 million to strengthening the university infrastructure projects including academic, program development, curricular improvement, teaching, laboratories, research, innovation, student success, and other leadership initiatives. Supported to build a $7 million modern Solar Observatory.
- **Faculty Success:** Raised funding to create an Office of Faculty Research Advancement to strategically support large funding pursuits, supported over 100 active PIs. Provided internal funding support for over 160 faculty research. Created a research training institute that impacted over 800 faculty. Recruited 12 faculty with 100% search success, supervised 18 faculty, and achieved 100% P&T success. Established an equitable faculty workload.
- **Student Success:** Established Undergraduate Research office and doubled the UG research students & faculty mentors. Provided funding support for 153 UG research scholars and 115 graduate students through a new Funding Programs. Established an Undergraduate Research Council (UGRC) and led an International Conference on UG Research Excellence. Achieved 98% student placement record.
- **Staff Success:** Significantly invested in staff development through monthly training series, mentoring, and nurturing a progressive growth mindset. Provided $1,000 funding for each staff professional development, created a STAR Staff Award Program, and recognized outstanding staff boosting team morale.
- **Scholarly Research & Teaching:** Led over $9M grants funded research programs, and $20M infrastructure grants. Led over $40 Million in research pursuit initiatives. Published 2 Textbooks, 5 book chapters, over 100 original publications. Significant instructional record of 80-course offerings with innovative award-winning pedagogies.
- **Entrepreneurship:** Successfully founded and established 3 start-up companies in TX and SD on technology based commercialization through university supporting regional entrepreneurial and economic development. Grand winner of Texas Business competition awarded by the Mayor of Corpus Christi, Grand Statewide Winner of Wisconsin Governor Business Competition awarded by Governor Jim Doyle.

EDUCATION

- **MLE,** Institute for Higher Education Management & Leadership, Harvard Graduate School, 2019
- **Financial Leadership**, Harvard Business School, Harvard University, 2018
- **MBA**, Strategic Management, Texas A&M University-Corpus Christi, 2015
- **Ph.D.,** Electrical Engineering, University of Wisconsin-Madison, 2008
- **M.S.,** Electrical Engineering, University of Tennessee-Knoxville, 2004
- **B.S.,** Electrical and Electronics Engineering (Gold Medal), University of Madras, India, 2001
- **Diploma,** Computer Programing, Tata Infotech, India, 2000

CERTIFICATIONS

- **Six Sigma** (6σ), Green Belt (CSSGB) Certificate for Project Management
- **Leading with Finance** *Certificate*, Harvard Business School
- **Higher Education Leadership Academy**, American Council on Education (ACE)
- **LEAD**, Higher Education Leadership, Excellence and Development, Texas A&M-CC
- **Leadership Academy**, SD School of Mines & Technology
- **PE License**, Professional Engineer (PE) of Texas
- **ABET- PEV**, Program Evaluator, ABET
- **Teaching Online Certificates**, Course -Design; -Development; and -Delivery
- **Hiring the Right People**, GE General Electric Company
- **Intellectual Property** *for Technologists*, GE General Electric Company
- **Entrepreneurship** *Certificate*, Univ. of Wisconsin-Madison

PROFESSIONAL APPOINTMENTS & ACCOMPLISHMENTS

- **Vice President for Research and Innovation (Entrepreneurship, and Economic Development)**
- **Chief Research Officer (CRO) | Institutional Official (IO) | Empowered Official (EO)**
- **Professor of Electrical Engineering (Tenured)**

Prairie View A&M University, Texas A&M University System, Texas | 2019 - Present

Institution: Prairie View A&M University (PVAMU) within the Texas A&M University System (TAMUS) is a public, comprehensive, land-grant, high research activity, doctoral-granting, historically black university (HBCU) located in northwest Houston, Texas. PVAMU has three campuses in the Greater Houston region with nearly 1,300 faculty and staff serving over 9,000 students across 8 colleges, 36 baccalaureates, 31 masters and 5 doctoral degree programs. PVAMU is the second oldest public university in Texas, competes at NCAA Division 1 level, and generates over 5300 jobs/yr., and has a $766 Million/yr. and $3.9 Billion long-term economic impact on the state of Texas.

Responsibilities: Provided vision and strategic leadership for the university's 1,300 faculty/staff, 9,000 students interdisciplinary research, innovation, and scholarship for broader societal and economic development activities across 8 colleges, 36 baccalaureates, 31 masters and 5 doctoral degree programs across 3 campuses by overseeing 15 areas (listed below) with 63 FTEs and overall fiscal management of $105.8 million. Reporting to the President, I serve in the President's Cabinet to provide strategic leadership, and I work closely with the Provost/VPAA to advocate for all disciplines. Provided strategic leadership for university-wide initiatives, strategic planning, faculty advancement, graduate and undergraduate student research, sponsored research administration and compliance, research centers and institutes, innovation, technology transfer, entrepreneurship, industrial partnerships, regional economic development. Provided strategic leadership, vision, goals, and oversight of the following offices/areas:

1. Office of the Research Administration (Leadership)
2. Office of Industry Contracting & Partnerships (Industry/Community)
3. Office of Innovation-Economic Development (Community)
4. Office of Title-III Programs (Academic and Research Infrastructure)
5. Office of Research Advancement (Faculty Focused)
6. Office of Sponsored Programs (Faculty Focused)
7. Office of Undergraduate Research (Student Centered)
8. Graduate Student Research (Student Centered)
9. Six Texas A&M University System's Chancellor Research Centers and Institutes
10. Office of Research Compliance and Export Controls (Faculty & Students)
11. Land-Grant Farm Animal Wellness Program (Faculty & Infrastructure)
12. Office of Innovation-Ecosystem (Faculty & Students Focused)
13. Office of Innovation-Commercialization (Faculty & Students Focused)
14. Office of Entrepreneurship (Student Centered)
15. Office of Research Marketing and Communications (Visibility)

SELECTED LEADERSHIP ACCOMPLISHMENTS

Vision and Strategic Planning

- Developed a vision and strategic roadmap at multiple institutions for excellence and steered the academic and research programs, and achieved the goals and objectives towards excellence and growth.
- Elevated the land-grant university from Masters Institution status to the prestigious Carnegie R2 High Research Activity Doctoral Institution within 3 years.
- Led 2021- 2026 PVAMU University's Strategic Planning for research, innovation and economic development.
- Led and established the Vision and Strategic Plan for the Division of Research and Innovation. Led the creation of Strategic Missions and Goals for various departments within the Division.
- Created 6 Core Values for the Division: Excellence, Integrity, Loyalty, Leadership, Respect, and Selfless Service, and incorporated them into the operations.

Initiatives Supported for Academic, Teaching, Research, Faculty Success, Student success, and Infrastructure

- Provided stewardship for over $70 million and provided oversight to the following infrastructure, academic, curricular, teaching laboratory, research, faculty success, student support, leadership initiatives across the university.
- Supported to build a $7 million state-of-the-art Solar Observatory.

- University Leadership/Administration
  - Commissions on Colleges: SACS Reaffirmation
  - Open Source and Quality Assurance in the Virtual Online Environment
  - Increasing Program Retention Rates by Enhancing Academic Competencies
  - Academic and Leadership Training Laboratory
  - Strengthening the Academic Enhancement

- Student Success Programs
  - Financial Aid into the 21st Century
  - PV Goes Global Experience
  - Enhancement of Student Counseling Services
  - Written Communication Skills - a Writing Center

- Research and Innovation Programs
  - Center for Microbial and Cardiovascular Studies
  - Research Infrastructure Enhancement
  - Faculty Advancement for Research and Innovation
  - Program for Energy-Efficient Envelope Research
  - School of Architecture Applied Research and Design Center Program

- Infrastructure and Faculty Success Programs
  - Enhancing IT Infrastructure
  - Establishing an Emergency Resource Center
  - Digital Technologies for Academic Support
  - Center for Instructional Innovation and Technology
  - Faculty Advancement and Curriculum Enhancement (FACE) Academy

- Business – Education – Agriculture Colleges
  - Hands-On Investing Experiences in the Finance Program
  - Innovation and Entrepreneurship Program (IEP) in the College of Business
  - Innovative Approaches to Curriculum Development in the College of Education
  - Food and Nutrition Teaching Facility

- College of Engineering Programs
  - Enhancement of the Ph.D. Program in Electrical Engineering
  - Computing Curriculum through Computer and Cyber Security Education
  - Mixed-Signal Systems, DSP Solutions Research Laboratories in the Engineering Technology
  - Mechanical Engineering Laboratory Enhancement
  - Chemical Engineering Laboratory Enhancement
  - Laboratory Experiences in the Civil Engineering

- Science and Mathematics Programs
  - Genomics/Bioinformatics Laboratory
  - Chemistry Forensic Science Program,
  - Biology Undergraduate Curriculum and Infrastructure for a Forensic Science Certificate
  - Science, Mathematics, Reading, Technology, and Social Studies (SMaRTS) Lab
  - Establishing a Solar Experiment Laboratory
  - A Virtual Reality Infrastructure for Enhancing Undergraduate Math Teaching and Learning
  - Learning & Experiential in Physics
  - Astronomy and Astrophysics Imaging Program

- College of Arts, & Humanities Programs
  - Television Studio Lab & Digital Integrated Remote Production
  - Mass Communication Curriculum and Film and Television Studies
  - Enhancing the Music Program
  - Multimedia Language Lab
  - Political Science Classroom Instruction through a Smart Classroom

- College of Nursing Programs
  - Engaging Doctor in Nursing (DNP) Students to Drive Program Success
  - Doctor of Nursing Practice (D.N.P.) Program Infrastructure
  - Human Patient Simulator as a Teaching-Learning
  - Learning Experiences in a Human Patient Simulation Laboratory

Research Enterprise Growth

- Elevated the land-grant university from Masters Institution status to the prestigious Carnegie R2 High Research Activity Doctoral Institution within 3 years, with overall fiscal management of $100.8 million.
- Significantly increased by 235% in sponsored funding awards from $14M FY18 to $47M FY21, a new record.
- Doubled/100% increase in proposal amount from $98M (2018) to over $200M (2021), a new record.
- Doubled in proposal counts and funding to 300 proposals and $200M/yr. An all-time high in the university's history.
- Increased by 140% in restricted research awards from $8.5M (FY18) to over $20M (FY21) for 85 sponsoring agencies.
- Increased by 90% in sponsored programs managed expenditures to $37M (FY21).
- Increased biomedical research is shown by a 500% increase in external research awards requiring IRB.

Centers and Institutes

- Oversight of 6 research centers and institutes with a $37M Budget and Fiscal Operations.
  - $7.6M - Radiation Institute of Science and Engineering (RaISE)
  - $7M - Computational System Biology Center (CSBC)
  - $7.3M - SECURE Cybersecurity Center
  - $6.4M - Center for Smart Microgrid
  - $3.4M - Minority Achievement, Creativity, High Ability Center (MACH-3)
  - $5.3M - Integrated Food Security Research Center (IFSRC)
- Significantly streamlined structure, personnel, budgetary, fiscal, procurement, and administrative processes.

Created executive oversight committee with the Provost and VPAA, CFO/VP Business Affairs, Deans. Empowered the academic colleges to have more oversight of the centers.

Administration, Budget and Fiscal Management

- Demonstrated bold and resilient leadership during the COVID-19 pandemic impacting the research operations with minimal impact on the research enterprise's growth.
- Provided leadership and oversight of 63 FTEs and managed $100.8M fiscal activities across campus.
- *Staff Success:* Significantly invested in staff development through training, mentoring, and nurturing a progressive growth mindset. Provided funding for each staff professional development, created a STAR Staff Award Program and recognized outstanding staff boosting morale.
- Integrated several R&I offices spread across campus to one building to align with "One-Team Culture" which improved departmental communication, collaboration, and efficiency.
- Raised funding and created 5 new offices, such as the Office of Research Advancement (ORA), Office of Contracting and Partnerships (OCP), Office of Innovation Ecosystem and Commercialization (OIC), Office of Innovation-Entrepreneurship (OIE), Office of Innovation-Economic Development (OIED).
- Demonstrated bold and timely leadership to relieve the university research compliance stakeholders from historic excessive external oversight within 6 months compared to the expected 2-3 year timeline.

Community and Economic Development

- Leading a 50 acre $100 Million innovation corridor design and development for regional economic development.
- Leading a $10 Million Innovation Commercialization Center for Entrepreneurs (ICCE).
- Inducted to the Association of Public and Land-grant Universities — APLU 2020-2021 Innovation & Economic Prosperity (IEP) cohort for a prestigious national recognition and standing.
- Created Economic Development Advisory Board with leaders from government officials, industry, and investors.
- Established strong partnerships with Small Business Development Center, Cooperative Extension, and Community and Economic Development Offices.
- Established partnerships with ED organizations in four counties in the Greater Houston area for PVAMU's economic impact of $766 million on the State of Texas with 5,300 jobs created and with a $3.9 Billion long-term impact.

Fundraising and Private Partnerships

- Demonstrated leadership in attracting and cultivating external partnerships for increasing financial and in-kind resources to the institution, as well as strategic engagement of partners for academic, faculty and student support.
- Raised over $6 million through corporate partnership for faculty and student success. Established the PVAMU and Shell Corporation partnership for multi-disciplinary Nature Based Solutions theme of projects. Established $1 million funding partnership with Sandia for various faculty success initiatives.
- Industries/Corporations: Apple, NASA, Accenture, Sandia National Lab, Microsoft, Intel, IBM, Toyota, Intuit, Collins Aerospace, BioTex, CACI Intl., PAE LLC, Voyager, Teledyne Engineering, Venturewell, Milo Materials, Shell, LMI, etc.
- Foundations: Andrew W. Mellon Foundation, Robert A. Welch Foundation, Harris Foundation, American Forest Foundation, Hogg Foundation, Thurgood Marshall Scholarship Fund, Fluor Foundation, Raise Your Hand Texas Foundation, Michael J. Fox Foundation, Burroughs Welcome Fund, Truth Initiative Foundation, Griffin Harte Foundation, Beta Beta Beta Foundation.
- National Corporation for Public Broadcasting (CPB), National 4-H Council, National Collegiate Athletic Association, HBCU Library Alliance, San Antonio and Houston Livestock & Rodeo, Humanities Texas, Houston Endowment.
- Patient-Centered Outcomes Research Institute, Translational Genomics Research Institute (TGen), Petroleum Research Fund, Association of American Geographers, American Psychological Association, Princeton University, George Washington University, Baylor College of Medicine, Case Western University.

Innovation Ecosystem, Commercialization and Entrepreneurship

- Created the office to infuse and nurture an innovative ecosystem by providing significant training, workshops, policies, curriculum development, and support services to boost the innovation across campus.
- Established several innovation and commercialization services to boost the intellectual property portfolio.
- Managed over 45 active intellectual property and commercialization partnerships.
- Led to consolidate innovation and product development facilities across campus under innovation.
- Led initiatives on the National Science Foundation's Innovation Corps (I-Corps) program
- Provided entrepreneurial and start-up services to faculty, staff, and students and launched several start-ups.
- Access to the incubator, start-up processes, and the Small Business Development Center.
- Launched the inaugural 'Panthers Invent' Innovation, Business Plan and Entrepreneurship Competition.
- Supported Entrepreneurship Curriculum with the creation of courses, minors, and certifications.

Faculty Success

- Established research partnerships for faculty research with national agencies, labs, and major industries such as the US Army, US Navy, Sandia, LANL, NASA, Apple, IBM, Intel, and numerous mid and small-scale companies.
- Raised funding and created the new Office of Research Advancement to support faculty to lead significant multi-disciplinary multi-institutional funding proposals.
- Created a database of research capabilities and research clusters for over 250 faculty across 8 Colleges.
- Supported over 250 funding pursuits across 16 funding agencies impacting 84 faculty impacting $17M.
- Recognized research faculty for the university awards for excellence in various categories.
- Launched a new initiative and provided funding support for over 100 faculty through a new VPRI – GRA Grant Program.
- Launched and supported over 110 faculty through a new VPRI - Undergraduate Research Grant Program.
- Initiated a bi-weekly Research Data Blitz talk for researchers to promote interdisciplinary research across campus.
- Launched numerous grant-writing workshops, trained and impacted 200+ faculty researchers.
- Initiated a semester-long Junior Faculty - Grant Writing Training program for new faculty cohorts.
- Revamped the limited submission review and selection processes into a transparent shared governance approach and facilitated 75 limited submissions through 250 internal reviews.
- Active participation in recruiting and retention of high-performing faculty across campus.
- Partnered with Center for the Advancement of STEM Leadership – CASL for faculty leadership training.

Diversity, Equity, and Inclusion

- Provided support for over 200 grad/undergrad students represent Hispanic and African American students.
- 14 out of 17 (82%) of all new staff recruited in the Division represent a team of diversity and inclusion.
- Created several faculty and staff-led committees for several initiatives and inclusive governance and decision making.
- Established equity and diversity-focused partnerships with several universities, industries, and corporations.
- Established and led a new Undergraduate Research Council (UGRC) with 31 representatives from diverse disciplines.
- Supported faculty governed research compliance committees such as IRB, IBC, and IACUC.

Student Success: Graduate and Undergraduate

- Raised $500,000 in funding to revive and sustain the Office of Undergraduate Research (OUR).
- Doubled UG Research funding, which led to a 105% increase in UG research scholars & faculty mentors.
- Supported 153 undergraduate research scholars for diverse research and innovation experiences.
- Supported over 115 graduate student's tuition and/or salaries through a new VPRI – GRA Program
- Launched the 1st International Conference on Undergraduate Research Excellence (I-CURE)
- Oversee the Chair of Taskforce for Graduate Council Faculty Membership in the Office of Graduate Studies
- Established UG Research partnerships with Brown University and Texas A&M - regional universities.
- Supported faculty UG Research grant writing and Research Experiences for UG (REU).
- Increased visibility through UG research services, publications, and media releases on student success.
- Increased UG student and faculty engagement in UG research through conferences, symposiums, and info-sessions that promoted visibility and culture of undergraduate research across the university.

Research Integrity and Compliance

- Served as the Chief Research Officer (CRO), Institutional Official (IO), and Empowered Official (EO).
- Relieved the excessive external oversight within 6 months compared to the expected 2-3 year timeline.
- Implemented IBC protocol requirement for biological teaching laboratories.
- Updated over 100 research compliance policies, regulations, rules, SOPs, and over 200 protocols.
- Significantly reduced compliance allegations by 40% IRB; 50% IACUC; 67% IBC.
- Converted paper-based process to fully electronic processes and launched software-based operations and oversight.
- Streamlined inspections Bio-safety labs, farm/animal programs, and facility inspections, compliance site visits.
- Managed export control, financial conflict, responsible conduct of research and research integrity.
- Managed Animal Wellness Program, Attending Vet, Farm/Ranch of large animals, Cattle, Goats, Horses, etc.

Marketing, Communications and Visibility

- Significantly increased the print, digital and social media presence of faculty success and scholarship which increased the research visibility of the academic community.
- Created a Research and Innovation Training Institute (RITI) for the research community to learn and network on diverse research and innovation areas and impacted 300+ faculty and staff through a bi-weekly campus-wide training series
- Led and collaboratively designed an innovative portfolio of branding, logo, tag-lines, quotes, etc.
- Redesigned and revamped the Research & Innovation website and reduced several hundred pages to less than 50 effective and attractive webpages, resulting in a significant boost of visibility and online traffic.
- Renovated the entire building floor physical space with innovative, vibrant, motivating with new R&I branding on wall spaces, offices, training rooms, and conference rooms.
- Led a large team on the extensive "Research Week" focused on labs, UG and grad students, and PIs.

- **Head of the Electrical & Computer Engineering Department (w/ Dean's Roles & Responsibilities)**
- **Endowed Chair, William J. Hoffert Professor of Electrical Engineering (Tenured)**

South Dakota School of Mines & Technology, Rapid City, South Dakota | 2017 - 2019

Institution: South Dakota School of Mines and Technology (SD Mines) is a public, high research activity, doctoral-granting STEM-focused institution which houses over 13 research centers and International Deep Underground Neutrino Experiment (DUNE). SD Mines offers 20 BS, 18 MS and 9 PhD degree programs, the largest and diverse high-quality engineering and science programs in South Dakota, with active cooperative programs and a consistent 97% student placement rate.

Responsibilities: Reported to the Provost and Vice President of Academic Affairs, I have successfully led as the chief academic and administrative officer for the electrical and computer engineering department with 300+ undergraduate and graduate students, 18 faculty and 7 staff members, and its academic programs with budgetary, personnel management, along with Dean's responsibilities of fundraising, and cultivating alumni and donor relationships. My direct responsibilities include- provide vision and strategic planning; fundraising and alumni development; fiscal management, high-quality programs, and national accreditation, recruit, develop, and retain excellent faculty and staff; support and advocate for all disciplines and develop cross-disciplinary interactions with internal and external partners; recruit and retain students; achieve excellence in faculty teaching, research, and service; support university-wide programs/initiatives and accreditations; supervise and assess academic advising; grow departmental research; represent in the Academic Leadership Council; develop workload and maintain P&T expectations.

ACCOMPLISHMENTS

Vision and Strategic Planning

- Led a collaborative and inclusive vision and strategic planning and development for the ECE department with faculty, staff, students, industry, alumni, and community participation.
- Successfully steered the department's strategic roadmap towards excellence and expansion, and in alignment with the university strategic plan along with a corresponding dashboard to monitor progress.
- Developed and executed strategic roadmap for graduate program growth, faculty funded research, student success, curriculum innovation, and fundraising growth.
- Provided leadership for the university "Strategic Enrollment Planning" committee.
- Provided leadership for the execution of the university strategic plan's goals, sub-goals, and action items.
- Provided leadership for the development of a 5-year Department Head evaluation system.

Enrollment Growth and National Ranking

- Demonstrated a 433% enrollment growth of graduate students in the electrical engineering graduate program.
- Demonstrated a 400% enrollment growth of accelerated master's students from the campus BS program.
- Demonstrated a 6% student enrollment growth in the computer engineering undergraduate program.
- Achieved a national rank of Top 24th graduate program in the nation by CollegeChoice© through leading the quality and visibility initiative for the graduate programs in the department.
- Demonstrated significant enrollment growth while increasing the program's national recognition.
- Led an extensive international graduate student recruitment program and implemented changes to the graduate student admission process and stage-by-stage monitoring and communication processes.

Fundraising, Alumni & Donor Engagement

- Led the management and distribution of $2.3 Million in development funds in total. Led the management and awarding of $400,000 funds for student scholarships.
- Led the management, allocation, and awarding $1.5 Million foundation funds for professorships. Led the management, allocation, and awarding $200,000 foundation funds for institutional support.
- Raised over $400,000 in cash donations and raised nearly $1M in in-kind donations.
- Collaborated closely with the University Foundation for fundraising and donor engagement.
- Trained in fundraising, and Donor & Alumni Engagement, and built relationship with donors.
- Leading a major alumni engagement campaign for the 100-year anniversary of the department for $1M target.
- Led a fundraising event in support of a faculty member from alumni and community.
- Raised faculty support funding from private organizations and industries

New Program Development

- Demonstrated entrepreneurial approach for identifying opportunities, creating interests, and building partnerships for new program developments.
- Generated state universities' interest for a joint/collaborative new Ph.D. in Electrical Engineering program at SDSMT, considering historic independent and competitive state climate.
- Initiated and led the development of several new programs Electrical Engineering B.S. Minor and Electronics Engineering & Technology B.S. Minor, and Systems Engineering B.S. Minor.
- Led the planning of a fully-online M.S. Electrical Engineering program.
- Well experienced in designing, developing, and implementing successful UG and graduate degree programs.

Program Assessment & Accreditation

- Extensive experience in leading program accreditations, and completed multiple accreditations successfully.
- Experienced ABET program evaluator with excellent knowledge in accreditation commissions.
- Achieved a successful ABET full-accreditation (6 years) for B.S. in Electrical Engineering with no deficiencies or weaknesses identified.
- Achieved a successful ABET full-accreditation (6 years) for B.S. in Computer Engineering with no deficiencies or weaknesses identified.
- Implemented changes in the ABET accreditation requirements in the program and course assessments.
- Successfully created assessment metrics and completed the external program review for the MS graduate program with no deficiencies or weaknesses identified and approved by the SD Board of Regents.
- Directly involved in the assessment process for institutional Higher Learning Commission (HLC) accreditation.

Teaching & Learning Innovation

- A transformative leader in teaching and learning and advocate for Student-Centered Learning pedagogies in higher education to meet the diverse student needs and demographics.
- Experienced in innovative instructional modalities such as Face to Face, Flipped, Blended/Hybrid/Fully-Online, Challenge Based, Project Based, Guided Inquiry-Based, and Competency-Based Education.
- Increased department's adaptation to technical assistance in classes and creating online courses.
- Provided support for faculty developing online classes with tablets, software, and course-release, etc.
- Have taught over 80-course offerings and presented several invited talks on learning innovation.

Curriculum Innovation and Improvement

- Extensive experience in curriculum review and improvement to be in standards with industry needs and par with national trends in higher education.
- Led the re-design and major modification of MS in the Electrical Engineering degree program to meet students' diverse interests and implemented modifications in program requirements approved by the Board of Regents.
- Led a major curriculum improvement of the BS in Electrical Engineering for a student-centered industry-oriented design-build-test spine by introducing novel courses into the curriculum at SDSMT.
- Revamped freshmen classes and freshmen experience with broad industrial and hands-on experiences
- Introduced experiential learning credits to gain experience in research and industrial setting.

Extramural Research & Scholarship

- Led over $1M in externally funded graduate research programs, including a $700,000 NASA program for wireless body area networks and secure cyber communication.
- In 2 years, the overall department faculty graduate research proposals increased by 320% and the extramural funded research increased by 280% and grown annual research expenditures.
- Developed graduate research faculty emphasis with reduced teaching (1//2 course) load.
- Mentored and supported faculty to network and visit with federal programs and labs, grantsmanship training for faculty, including educational program funding for instructional faculty.
- Initiated multiple industry-funded research projects for the department faculty.
- Increased by 150% in the faculty body with a high graduate research emphasis.

External Partnerships (Industry Connectivity, Community and Academic Institutions)

- Established partnerships with industries for student employment (internships/coop), scholarships, faculty research projects from L3 Technologies, Raven Industries, Interstates, Rockwell Collins, Kimberly-Clark, Black Hills Energy, Garmin, Caterpillar, Blattner Energy, IBM, Sanford Health, Microsoft, etc. Established partnership with NASA Langley Research Center and NASA Jet Propulsion Lab (JPL).
- Increased industry-sponsored senior design and research projects in the department.
- Increased active industry participation in the department industry advisory board.
- Established partnership with community district area high school teacher's organization and conducted teacher training about engineering programs and organized laboratory tours.
- Established partnerships with a state institution, South Dakota State University for a collaborative engineering doctoral program and generated program funding interest from SD State Board of Regents.

Fiscal Budgeting and Management

- Developed and proposed a strategic fiscal year budget annually to the university executive council.
- Effectively managed a $4M budget in support of full-time and part-time faculty/staff salaries, operations, graduate assistantships, laboratory support, professional development, recruitment, marketing, outreach, student support, and additional support for innovative initiatives.
- Demonstrated a growth of 125% in budget support for responsible programs through demonstrated performance and reinvested the growth revenues for further expansion and excellence.
- Increased overall budget by 86% in support of facility and infrastructure upgrades.
- Effectively managed budget and spending monitoring, monthly encumbrances and projected expenses, revenues, analyzing financial reports, and ensure compliance with state and university regulations.
- Successfully balanced the budget at the end of the fiscal year without any deficit.

Faculty & Staff Success

- Chaired and recruited 9 faculty and 5 staff members in the department and provided mentorship.
- Performed direct supervision, mentoring, and evaluation of 18 faculty members for their teaching effectiveness, scholarly and research activities, and service activities
- Performed training, development, and supervision of 13 staff members.
- Created and chaired a Research Faculty Mentorship Program, Instructional Faculty Mentorship, and Staff Development programs for the professional development of faculty and staff.
- Supported faculty and staff members on work-life balance and flexible working hours.
- Improved morale and built a cohesive, and productive team of faculty and staff, effectively resolved conflicts to achieve the best outcome for the organization, and recognized outstanding performers with awards.

Student Success (Advising, Retention, Graduation & Placement)

- Created a faculty-led Internship/Co-op coordinator position and achieved a 98% placement record consistently.
- Developed and implemented a structured and closed-loop academic advising process using the Starfish system. Created a survey to assess and improve the quality of academic advising.
- Created a Student Success Seminar Series for students to learn college survival skills, study skills, and develop leadership skills through expert speaker series.
- Created a Freshmen Social Program and Freshmen Practicum program to build bonding among freshmen students and to engage more with departmental laboratories and hands-on projects.
- Created an innovation-Lab for students to engage in outside classroom learning and engagement.
- Mentored and coached students to present in conferences, symposiums, and competitions, and offered events that promoted student participation and engagement.

Student Recruitment and Outreach (K-12)

- Created and executed Summer Camps targeted for junior and senior high school students
- Demonstrated leadership in creative and effective student recruitment practices through various vehicles to reach diverse students, including educational, experiential, geographic, and cultural backgrounds.
- Created a new budgeted recruiting staff dedicated to student recruitment and marketing efforts.
- Actively led strategic online and social media marketing and promotion of programs.

- Actively led well over 150 department tours for various prospective student and parent groups.
- Created a partnership with STEM teachers in the region through pipeline courses, AP credit courses, freshmen courses, Research Experience for Teachers (RET), tours for STEM teachers, Summer Institute for Teachers (SIT), design fairs, etc.

Infrastructure Development

- Demonstrated leadership in envisioning facility improvements needed to support enhanced student learning and faculty development and executed several facility and infrastructure development.
- Led a major renovation of two 50-year-old circuits labs.
- Led a major renovation of electronics labs, power lab, optoelectronics lab, robotics lab.
- Created a new innovation-Lab (i-Lab) for student engagement a new student project and a learning laboratory.
- Created a new Design and Fabrication Lab (Fab-Lab), and a new Micro and Nanoelectronics Lab.
- Significantly improved the entire department classroom and laboratories to modern appearance.
- Equipped laboratories with several new equipment and innovative hands-on project kits for student learning.

Equity and Shared Governance

- Demonstrated examples of shared governance, including the creation of faculty-led committees such as Scholarship and award committee, Undergraduate Program Coordinator, Student Success Coordinator, Quality and Continuous Improvement Coordinator, Corporate Engagement Coordinator.
- Shared administrative governance and decision-making opportunities with faculty and staff.
- Worked closely with faculty, staff, and students to bring about meaningful results that are consistent with the college and university's missions and its strategic plan.

Diversity and Inclusive Excellence

- Extensive experience working with and matriculated a large number of diverse students.
- Trained, mentored, and matriculated diverse students, which includes 55% female, 66% Hispanic or African-American students, 73% first-generation students, 45% international students.
- Significantly increased faculty diversity in the department by gender, race, language, and ethnicity.
- Mentored minority and underrepresented students through LSAMP, McNair, SACNAS, and Tiospaye (Native American).

➢ Board Director, Center of Excellence for Advanced Multidisciplinary Projects (CAMP)

- CAMP is a competitive, nationally-recognized program that brings together students, faculty, and industry leaders to partner on real-world projects.
- Students participating in CAMP can be part of a team preparing for the national competition by building alternative fuel vehicles, a concrete canoe, an unmanned aerial vehicle, or a mini Indy or Baja car, or working on projects involving robotics or hydrogen fuel cells.
- Served in the CAMP Board to oversee the CAMP activities and personnel including the director and two other staff members and several interdisciplinary student team projects.

➢ Director, Innovation Laboratory (i-Lab)

- Created the i-lab (innovation lab) as a resource available to all students in the department who is interested to explore innovation and entrepreneurship at any level.
- Through the i-lab, provided all the physical and intellectual resources that current students need to develop and grow, including one-to-one advising, office hours with experts, workshops, an incubator program, and a competition.
- Oversaw student project proposals, progress, and completion. Encouraged successful project start-ups.

➢ Director, Biosensors and Nanoelectronics Laboratory

- Successfully established a Biosensors and Nanoelectronics laboratory focused on researching and synthesizing novel materials using laser-ablation in liquids to produce advanced nanofluids for sensor and nanoelectronics applications.
- Leading a large multi-university sensor and wireless body area network research funded by NASA, researching and developing novel bio-sensor systems coupled with cyber-encrypted wireless communication systems.
- Supervised and mentored postdoctoral, graduate, and undergraduate students.

- **Executive Director, Plasma Engineering Program**
  Texas A&M University, Corpus Christi, Texas A&M University System, Texas | 2009 – 2017
  Graduate Affiliate Faculty, College of Engineering, Texas A&M University
  Texas A&M University System, College Station, Texas | 2011 – 2017

  Institution: Texas A&M University, Corpus Christi is a public, comprehensive, doctoral-granting higher research activity-R2, Minority - Hispanic Serving Institution (MSI/HIS) of higher education serving a 13,000-student population over 35 majors and 25 graduate programs.

  Responsibilities: As the Founding Executive Director of the Plasma Engineering Program, my responsibilities include provide effective leadership with intelligence and integrity to build and establish the new program, establish research facility and infrastructure, secure extramural funding for research projects, build relationships with federal agencies, establish industrial partnerships, create and teach new courses for the program, provide organizational management, develop strategic planning, provide fiscal management, staff personnel supervision, and management, building collaborative partnerships internally within the college and externally with the community, mentor post-doctoral, graduate and undergraduate students.

  ACCOMPLISHMENTS

  Research - Leadership
  - Provided vision and strategic planning for the research program's growth and excellence.
  - Initiated and established the state-of-the-art research program and infrastructure which is recognized as one of its kind in the state of Texas and recognized by state officials, including the Texas lieutenant governor.
  - Envisioned new opportunities and attracted significant research funding to establish the research program.
  - Served as PI or Co-PI on more than $4 Million in research projects.
  - Led effective and efficient strategic budget planning and fiscal management annually.
  - Served as a Commercial Technology Reviewer for Governor Perry's Texas Emerging Technology program and reviewer for the Office of Fusion Energy Sciences (FES).

  Administration/Personnel
  - Recruited, trained, and supervised 4 full-time staff research scientists.
  - Mentored over 35 graduate and undergraduate students.
  - Addressed conflicts in a constructive manner and resolved complex personnel issues.
  - Enforced all university and state policies, procedures, rules, and regulations to ensure research compliance.

  Industrial-Economic Development Partnerships
  - Led a community-based fundraising event for pediatric cancer research and raised $50,000 in a single event.
  - Demonstrated leadership in building partnerships with diverse internal as well as external entities such as organizations in the community, industries, and academic institutions that supports the university's mission.
  - Established partnerships with industries for research and educational collaborations including Driscoll Children's Hospital System CHRISTUS Spohn Hospital System Pepsi Co. Corporate Office HEB, Water Street Restaurants.
  - Partnered with the community Small Business Innovation Center, CC Regional Economic Development Corporation, Coastal Bend Business Innovation Center, South Texas Economic Development Center, CC Hispanic Chamber of Commerce, and Business Professionals of the Coastal Bend.

  Regional Leadership Service
  - Partnered with other nonprofit organizations such as the Rotary Club of Corpus Christi, Brooke's Blossoming Hope for Childhood Cancer Foundation, Corpus Christi Museum of Science and History.
  - An integral part of establishing a multi-university South Texas Engineering Alliance (STEA) Consortium.
  - Chaired and established MOU agreement for engineering programs with Del Mar Community College in TX.
  - Serve as an advisory board member for community colleges' engineering programs in South Texas.

  Diversity and Inclusive Excellence
  - Trained, mentored, and matriculated diverse students, which includes 55% female, 66% Hispanic or African-American students, 73% first-generation students, 45% international students.
  - Mentor and advisor for programs that support minority and underrepresented students, such as Louis Stokes Alliance for Minority Participation Program, McNair Scholars Program, SACNAS (Chicanos/Hispanics and Native Americans).

- **Associate Professor, Electrical Engineering (Tenured)** (2014 – 2017)
- **Assistant Professor, Electrical Engineering (Joint Appt. Mechanical Engineering)** (2009 – 2014)

Texas A&M University Corpus Christi, Texas A&M University System, Texas | 2009 – 2017

ACCOMPLISHMENTS

Enrollment Growth

- An integral part of a 533% growth in student enrollment for a new BS Engineering program which began with 75 students in 2009 and grew to over-400 students by 2014 through directing several regional outreach programs, and high school competitions, establishing MOU's with community colleges and raising program visibilities.

Student Recruiting

- Served as an international ambassador and the graduate student applications increased by 300% in one year and elected to serve in the International education committee.
- Served as the university representative and an advisory member for the NASA Texas Space Grant Consortium promoting STEM activities among students.
- Directed several regional outreach competitions targeted to middle school and high school students.
- Served in an advisory board for community colleges and built a pipeline for student transfer from a 2-year program into 4-year university degree programs.

Student Success

- Created and served as the faculty advisor for the ASME student chapter and received national recognition. Provided opportunities for students to participate in STEM projects, research, and professional activities that significantly helped student retention and demonstrates my commitment to student learning and success.

Research & Scholarly Work

- Successfully attracted and led grant-funded research projects and programs, with one patent pending, published 2 Textbooks, 5 book chapters, over 100 original publications in journals and proceedings, serving several professional engineering societies.

Teaching Excellence and Student Advising

- Successfully taught over 80-course offerings. Developed several innovative teaching pedagogies and learning modalities and received Excellence in Teaching Innovation Awards during 2015 and 2016.
- Certified in a variety of teaching and learning innovations such as Face to Face Instruction, Flipped Classroom Instruction, Blended/Hybrid Classroom, Fully-Online Course Delivery, Challenge-Based Instruction, Project-Based Instruction, Guided Inquiry Instruction, and Competency-Based Education.
- I have advised over 1200 students in the last 10 years.

Curriculum Innovation & New Program Development

- Led the development and implementation of a new BS in Electrical Engineering degree program.
- Chaired the electrical engineering curriculum committee and developed a 4-year curriculum in compliance with university, Texas Higher Education Coordinating Board (THECB), and ABET requirements.
- An integral part of implementing and establishing a new BS in Mechanical Engineering degree program and served to grow the program and the engineering department. Played a key role in the design and development of a new Fully-Online BS in Mechanical Engineering Technology (MET) degree program through Competency-Based Education.

Accreditation and Assessment

- 100% Successful ABET accreditation of the following program with full accreditation approval. Including, BS. Mechanical Engineering Technology (2016), BS. Mechanical Engineering (2011), and BS. Mechanical Engineering Technology and Electrical Engineering Technology programs (2010).
- Assisted in the assessment process for the Southern Association of Colleges & Schools (SACS) Commission on Colleges.

Faculty/Staff Recruiting and Success

- Trained in "Hiring Right People" and experienced in best hiring practices for faculty at all levels including part-time and adjunct faculty, instructors, and research professors.
- Chaired 4, served in 5 tenure track faculty searches for Mechanical, Electrical, and Industrial Engineering programs.

Curriculum Improvement

- Played a key role in the curriculum improvement committee of all engineering and engineering technology programs in the Department of Engineering such as Mechanical Engineering, Electrical Engineering, Mechanical Engineering Technology, and Electrical Engineering Technology. Education (CBE).
- Served in the School of Engineering and Computing Sciences curriculum committee on curriculum development and improvement for Ph.D. in geospatial computing, BS and MS in computer science, MS in geographic information systems, BS in mechanical and electrical engineering, and engineering technology programs.

- **Founder and CEO,** Glasram Technologies Inc., South Dakota | 2017 – 2019
  - Successfully founded and established the company in South Dakota and pursuing research, development, and commercialization opportunities.
  - Supported regional entrepreneurial and economic development activities and pursue federal SBIR and STTR funding opportunities in support of technology development and commercialization.

- **Scientific Consultant,** Orbitec/NASA/Plasma Technologies, Inc. | 2011 - 2017
  - Provided significant scientific support for the development of cold plasma technologies for medical, space sterilization. The technology developed is being used in the US International Space Station (ISS).

- **Founder and CEO,** Glasram Technologies Inc., Texas | 2010 - 2017
  - The grand winner of the 2010 Texas Coastal Bend Business competition and awarded by the Mayor of Corpus Christi, Texas. Operated as Entrepreneur in Residence at Texas Coastal Bend Business Innovation Center.
  - Successfully founded and established the company in Texas and pursuing research, development, and commercialization opportunities.
  - Partnered with several industries and completed multiple federal SBIR grants towards technology development and commercialization.
  - Supported regional entrepreneurial and economic development activities and pursued federal SBIR and STTR funding opportunities in support of technology development and commercialization.

- **Founder and CTO,** Plasma Devices LLC., Wisconsin | 2006 - 2009
  - Grand Statewide Winner of Wisconsin Governor Business Competition under the Advanced Manufacturing category in 2006 and awarded by Governor Jim Doyle.
  - Winner of Burrill Business Competition at the University of Wisconsin Madison in 2006.
  - Successfully founded and established the company in Wisconsin and pursued commercialization opportunities.
  - Partnered with several industries and secured venture capitals towards technology development and commercialization.

- **Lead Engineer,** Global Research Center (GRC) - General Electric (GE), New York | 2008 - 2009
  - Led an engineering design and development of a large waste gasification project in New York.
  - Led projects on holographic imaging on novel selective photosensitive polymers, and cold plasma disinfection devices for soldiers supported by the US Department of Defense.
  - Winner of best technology plan as a part of GE Growth Completion, and winner of newcomer's club logo design.

- **Research Associate/Instructor,** ECE Dept., University of Wisconsin, Madison, WI | 2004 - 2008
  - Led the research experimentation on AFOSR laser induced RF sustained large volume atmospheric pressure plasmas, laser induced Window breakdown research, laser induced air breakdown plasma research.
  - Instructed undergraduate course Circuits-I as primary instructor for multiple semesters.

- **Research Assistant,** ECE Dept., University of Tennessee, Knoxville, TN | 2002 - 2004
  - Assisted in AFOSR funded research projects on cold Plasma Sterilization, Plasma Antenna and Ball-lightning.

- **Project Manager,** Engineering Education Enterprises, Inc., | 2001 - 2002
  - Managed the project design, development and testing of engineering and Higher-Ed educational technical projects.

HONORS AND AWARDS

- Mayor's Person of the Year Award, Corpus Christi, Texas
- Mayor's Corpus Christi CCU40 (40 Under 40 Award), Corpus Christi, Texas
- Excellence in Research Achievement Award, Texas A&M University-CC
- Wall of Fame for Research Recognition, Texas A&M University-CC
- Excellence in Teaching Innovation Award'16, Texas A&M University-CC
- Excellence in Teaching Innovation Award'15, Texas A&M University-CC
- LEAD Recognition, University Leadership Program Recognition, Texas A&M University-CC
- Finalist & Grand Winner, Texas Coastal Bend Business Plan Competition
- Outstanding Islander Recognition, Texas A&M University-CC
- Maze Bearer for Graduation Commencement, Texas A&M University-CC
- Distinguished Faculty Speaker, Academy Speaks, Texas A&M University-CC
- Distinguished Faculty Speaker, FAC-Talks, Texas A&M University-CC
- Faculty Mentor Medal, Honors Program, Texas A&M University-CC
- Faculty Advisor Service Award, ASME, Texas A&M University-CC
- Scientific Fellow Companion, Sigma Xi
- Who's Who in America, Marquis
- Finalist & Grand Winner, GE Business Technology Plan Completion
- NASA Elected Representative, NASA Texas Space Grant Consortium
- NSF Travel Award, ASEE Integrating Sustainability in Engineering, NSF
- Design Award, General Electric Newcomers Club
- Vilas Fellowship Award, University of Wisconsin
- Fellowship Award, Electrical and Computer Engineering, University of Wisconsin
- Vilas Fellowship Award, University of Wisconsin
- Finalist & Grand Winner, Wisconsin Governor Business Plan Competition
- Finalist & Grand Winner, Burrill Business Plan Competition - University of Wisconsin
- Best Teaching Assistant Award, Dept. of Electrical Engineering, University of Wisconsin
- Best Paper Award, SHPE - Society of Hispanic Professional Engineers
- Elected Vice President, IEEE - Madison WI Chapter
- IEEE Graduate Fellowship Award, Nuclear and Plasma Sciences Society
- Chancellor Citation Award for Professional Promise, University of Tennessee
- Tau Beta Pi Inducted, Engineering Honor Society, University of Tennessee
- Eta Kappa Nu Inducted, Electrical Engineering Honor Society, University of Tennessee
- University Topper (Gold Medalist, Ranked 2nd/7800 Students), University of Madras
- Best Senior Design Award, University of Madras

MEMBERSHIPS AND AFFILIATIONS

Boards

- Board of Director - NASA TSGC – NASA Texas Space Grant Consortium
- Board of Director – NASA TCC – NASA Technology Collaboration Center
- Board of Director – CAMP - Center of Excellence for Advanced Multidisciplinary Projects

Higher Education: Leadership, Research & Governance

- **APLU** - The Association of Public and Land-grant Universities
- **COR** - Council on Research
- **CECE** - Commission on Economic & Community Engagement
- Council of 1890 Universities

- **CSC** - Council on Strategic Communications
- Commission on International Initiatives
- **AASCU** - American Association of State Colleges and Universities
- **AAUA** - American Association of University Administrators
- **ACE** - American Council on Education
- **AACU** - Association of American Colleges & Universities
- Diversity, Equity, and Student Success
- Global Citizenship for Campus, Community, and Careers
- Undergraduate STEM Education

Innovation - Economic Development

- **GHP** - Greater Houston Partnership
- **WCEDP** - Waller County Economic Development Partnership
- **WEDC** - Waller Economic Development Corporation
- **WACC** - Waller Area Chamber of Commerce
- **PVEDC** - Prairie View Economic Development Corporation
- **PVCC** - Prairie View Chamber of Commerce
- **SBDC** - PV Small Business Development Center
- **CED** - PV Community and Economic Development

Technical

- **NPSS** - Nuclear and Plasma Sciences Society
- **APS** - American Physical Society
- **LIA** - Laser Institute of America
- **SPIE** - Society of Photo-Optical Instrumentation Engineers
- **OSA** - Optical Society of America
- **IEEE** - Institute of Electrical and Electronics Engineers
- **ASEE** - American Society of Engineering Education
- **ASME** - American Society of Mechanical Engineers
- **Sigma Xi** - Scientific Research Society

Honorary

- **Tau Beta Pi** - Engineering Honor Society
- **Eta Kappa Nu** - Electrical Engineering Honor Society
- **Order of the Engineer** - Engineering Society

Professional

- **ABET** - Accreditation Board for Engineering and Technology
- **AAAS** - American Association for the Advancement of Science
- **NSPE** - National Society of Professional Engineers
- **TSPE** - Texas Society of Professional Engineers
- **NASA TSGC** - Texas Space Grant Consortium
- **AAUP** - American Association of University Professors

Diversity, Equity and Inclusion

- **SHPE** - Society of Hispanic Professional Engineers
- **LSAMP** - Louis Stokes Alliances for Minority Participation
- **McNair** - McNair Scholars

International

- **CFR** – Council on Foreign Relations
- **TIEC** – Texas International Education Consortium

Accreditation

- **HLC** - Higher Learning Commission
- **SACSCOC** - Southern Association of Colleges and Schools Commission on Colleges

GRANTS AND CONTRACTS

EXTRAMURAL FUNDING

- $750,000, NASA, National Aeronautics and Space Administration, Wireless Body Area Network in Space: Wireless Health Monitoring System with Flexible and Wearable Sensors, 2018 – 2020, Principal Investigator.
- $700,000, DOD, Department of Defense, U.S. Army MRMC/TATRC, Design and Development of Lightweight Portable Cold Plasma Medical Device for Biomedical Applications. 2011 – 2014, Principal Investigator.
- $20,000,000, NSF-EPSCoR, National Science Foundation, South Dakota Biofilm Science and Engineering Center, A Multi-University RII Track-1: Building on The 2020 Vision: Expanding Research, Education and Innovation in South Dakota, Senior Personnel, 2019-2024.
- $100,000, Texas A&M, 2010, Plasma Engineering Research Program. Principal Investigator.
- $30,000, Brooks Blossoms Foundation, Cold Plasma Treatment on Neuroblastoma Cancer Cells. 2014 – 2015, Principal Investigator.
- $25,000, TRDF, Texas Research Development Fund, Development of Cold Plasma Device for Food Sterilization. 2012 – 2013, Principal Investigator.
- $25,000, TRDF, Texas Research Development Fund, Novel Cold Plasma Therapy for Cutaneous Squamous Cell Carcinoma Skin Cancer. 2012 – 2013, Principal Investigator.
- $25,000, TRDF, Texas Research Development Fund, Cold Plasma Induced Apoptosis Research on Various Human Cell Structures Aimed for Skin Cancer Treatment. 2012 – 2013, Principal Investigator.
- $1,500,000, DARPA, Defense Advanced Research Projects Agency, Plasma Assisted Thermal Treatment of Coal for Syngas Synthesis. 2009 – 2010, Co- Principal Investigator.
- $3,300,000, DOE, Department of Education, First In The World - Science, Technology, Engineering, Math (STEM) Online Supplemental Instruction Project. 2014 – 2016, Co- Principal Investigator.
- $680,000, DOD, Department of Defense, Engineering Functional Surfaces and Flexible Smart Sensors by Scalable Microfabrication. 2017 – 2019, Co- Principal Investigator.
- $681,000, NSF, National Science Foundation, High Accuracy High Resolution Orbitrap Hybrid Mass Spectrometry System. 2016 – 2018, Co- Principal Investigator.
- $25,000, HEF, Higher Education Fund, Atmospheric Pressure Cold Plasma Source for Instructional and Research Applications related to Material Science. 2012, Principal Investigator.
- $16,500, TRDF, Texas Research Development Fund, Experimental Investigation of Air Plasma & Nitrogen Oxide Characteristics of Plasma Medical Manipulator Using Gas Chromatography and OES. 2010, Principal Investigator.
- $60,000, HEF, Higher Education Fund, Dynamic Light Scattering for Nanotechnology Research and Education. 2011, Principal Investigator.
- $750,000, NASA, National Aeronautics and Space Administration, Non-Thermal Sanitation by Atmospheric Pressure Plasma Technology. 2013 – 2015, Co- Principal Investigator.
- $100,000, NASA, National Aeronautics and Space Administration, Non-Thermal Sanitation by Atmospheric Pressure Plasma Technology. 2011-2012, Co- Principal Investigator.
- $263,000, DOD, Department of Defense, Velocity Measurement Systems for a Low-Speed Wind Tunnel. 2014, Co-Principal Investigator.
- $92,000, NASA, National Aeronautics and Space Administration, Rapid Response On-chip Sensors for Food Production and Environmental Control and Life Support System (ECLSS) Monitoring at International Space Station (ISS). 2017 – 2018, Co- Principal Investigator.
- $9,000, REG, Research Enhancement Grant, The Effect of Non-thermal Plasma on Human Leukemia and Lymphoma Cells. 2013, Principal Investigator.

- $5,000, REG, Research Enhancement Grant, Novel Nanofluids – Induction of Nanoparticles in Liquids Using Laser Focused Plasmas at Liquid-Metal Phase Boundaries. 2013, Principal Investigator.
- $2,500, TRDF, Texas Research Development Fund, Understanding Laser Induced Plasmas at Phase Boundaries for Nanoparticle Formation and Synthesis in Liquids. 2014, Principal Investigator.
- $5,000, TAMUCC, Texas A&M University – CC, Cold Plasma Sterilization of Sea Food. 2015, Principal Investigator.
- $3,000, QEM, IC Plasma Mass Spectrometer for Interdisciplinary Undergraduate Research Training. 2011, Principal Investigator.
- $1,000, NSF - UTPA, National Science Foundation - University of Texas - Pan American, Course Delivery on Challenge-Based Instruction. 2012, Principal Investigator.
- $3,000, ODELT, Office of Distance Education and Learning Technologies, Texas A&M, Best Practices for Online Course Pedagogy Designing. 2013, Principal Investigator.
- $1,000, NSF - UTPA, National Science Foundation - University of Texas PA, Course Re-Design on Challenge-Based Instruction. 2015, Principal Investigator.
- $3,000, ODELT, Office of Distance Education and Learning Technologies, Texas A&M, Best Practices for Online Course Design and Development. 2014, Principal Investigator.
- $3,000, SOAR, STEM Outreach, Access, and Retention, Texas A&M, Student Metacognition and Motivation. Advancing STEM Learning for all Students. 2014, Principal Investigator.
- $3,000, ODELT, Office of Distance Education and Learning Technologies, Texas A&M, Online Course Deliver and Peer-Review. 2015, Principal Investigator.
- $3,000, CFE, Center for Faculty Excellence, Texas A&M, Teaching Innovation with Flipped Classroom and Community of Practice. 2015, Principal Investigator.

GRANT PROPOSAL INITIATIVES

- CPRIT, Cancer Prevention and Research Institute of Texas, $1,063,429, Induction of program cell death of melanocytes and other skin cancer cells by ionized plasma.
- NRC, Nuclear Regulatory Commission, $1,171,591, Integrated Nuclear Research Training and Education Program for Underrepresented Studies.
- NSF, National Science Foundation, $1,048,248, Acquisition of Transmission Electron Microscope.
- DOE, Department of Energy, $812,594, Fundamental Research on Electrochemical Effects of Using Non-thermal Non-equilibrium Microwave Plasmas on Low-rank Coal Particles.
- NSF, National Science Foundation, $3,895,000, Louis Stokes Alliances for Minority Participation Program in STEM.
- NSF, National Science Foundation, $600,000, Ultrasensitive 3-D Surface Plasmon Resonance (SPR) Imaging.
- DOD, Department of Defense, $265,000, In Review, Novel field-portable technique utilizing synergistic effect of cold plasma and electroporation for breast cancer treatment.
- NSF, National Science Foundation, $400,000, In Review, Acquisition of Particle Image Velocimetry to Expand Fluid Dynamics Research Capabilities.
- NSF – AISL, National Science Foundation - Advancing Informal STEM Learning, $400,000, In Review, Crossing the Boundaries and Bridging the Gap: Research Experience in Museum Setting to Advance STEM Education.
- DOE, Department of Energy, $250,000, Printing technique: a game-changing way to manufacture organic light-emitting diode (OLED) and organic photovoltaic (OPV) devices.
- NSF, National Science Foundation, $400,000, Acquisition of a Particle Image Velocimetry (PIV) System for Advancing Fluid Dynamics Research and Training.

- NSF-REU, National Science Foundation – Research Experience for Undergraduates, $453,790, Taking Ethical Considerations into Micro Electro Mechanical System Research.
- NIH, National Institutes of Health, $452,371, Skin Cancer Treatment & Monitoring by Plasma-hyperspectral Imaging.
- NSF, National Science Foundation, $412,110, MRI: Acquisition of Atomic Force Microscope.
- NSF, National Science Foundation, $400,000, Understanding Laser Induced Plasmas at Phase Boundaries for Nanoparticle Synthesis in Liquids - Integrated Research and Education Program.
- NSF-MRI, National Science Foundation Major Research Instrumentation, $512,000, Acquisition of Scanning Electron Microscope (SEM).
- DOD, Department of Defense, $273,368, Laser Plasma Induced Functional Nanofluids with Unprecedented Specificity and Reactivity.
- CPRIT, Cancer Prevention and Research Institute of Texas, $200,000, Development of a Novel Therapy for Human Head and Neck Squamous Cell Carcinoma by cold Plasma.
- TSGC, Texas Sea Grant College Program, $158,253, Evaluation of cold plasma technology for inactivation of bacterial contaminants in Gulf Coast Oysters.
- NSF, National Science Foundation, $64,706, Collaborative Research: Improving Student Reflection and Metacognitive Thinking: A Texas Collaborative for Faculty Development.
- TWC, Texas Workforce Commission, $45,264, Young Engineer Summer (YES) Camp.

SCHOLARLY PUBLICATIONS

PATENTS

- Magesh T. Rajan, Plasmawave – A Non-thermal atmospheric plasma system, Patent Pending.

BOOKS

- Magesh T. Rajan, Cold Plasma Technologies & Applications, LAP©, ISBN: 978-3330006485, 180 pages, 2016.
- Magesh T. Rajan, Laser Induced Plasmas & Optical Diagnostics, LAP©, ISBN: 978-3846548745, 268 pages, 2011.

BOOK CHAPTERS

- Magesh T. Rajan, Xavier F. Gonzales, Heather Anderson. “Regulated Cellular Exposure to Non-Thermal Plasma Allows Preferentially Directed Apoptosis in Acute Monocytic Leukemia Cells.” Studies in Health Technology and Informatics, IOS Press, vol. 184, 436 – 442. (2013) (ISBN: 978-1-61499-208-0). (DOI 10.3233/978-1-61499-209-7-436). (PubMed 23400198).
- Magesh T. Rajan, Abdollah Sarani, Xavier F. Gonzales. “Characterization of an Atmospheric Pressure Plasma Jet and its Applications for Disinfection and Cancer Treatment” Studies in Health Technology and Informatics, IOS Press, vol. 184, 443 – 449. (2013) (ISBN: 978-1-61499-208-0). (DOI 10.3233/978-1-61499-209-7-443). (PubMed 23400199).
- Magesh T. Rajan, Lillian Waldbeser and Amanda Whitmill. "THP-1 leukemia cancer treatment using a portable plasma device." Studies in Health Technology and Informatics, IOS Press, vol. 173, 515 – 517. (2012) (ISBN: 978-1-61499-021-5). (DOI 10.3233/978-1-61499-022-2-515). (PubMed 22357047).
- Magesh T. Rajan and Lillian Waldbeser. "Portable plasma medical device for infection treatment." Studies in Health Technology and Informatics, IOS Press, vol. 173, 518 – 520. (2012) (ISBN: 978-1-61499-021-5). (DOI 10.3233/978-1-61499-022-2-518). (PubMed 22357048).
- Magesh T. Rajan. “Experimental Investigation of 193 nm Excimer Laser Induced Plasma in Air” (ProQuest, 2011). ©. 120 pages, (2011). (ISBN: 978-1243508751).

PEER-REVIEWED PUBLICATIONS AND PROCEEDINGS

- Magesh T. Rajan, Haiping Hong and Rizbi Hasan. "Synthesis and characterization of water based Al_2O_3 nanofluid using laser induced plasma" Journal of Nanofluids, In-press, 2020.
- Magesh T. Rajan and Rizbi Hasan. "Laser plasma induced TiO_2 nanoparticle synthesis in water and particle characterization" IEEE Access, Vol. 7, p. 56556 – 56563, 2019.
- Magesh T. Rajan, Haiping Hong and Rizbi Hasan. "Laser plasma induced Cu_2O nanoparticle synthesis in ethanol and nanofluid particle characterization" Journal of Nanofluids, Vol. 8, pp 1676 - 1682, 2019.
- Navanietha Rathinam, Gorky, Mohit Bibra, Magesh Rajan, David Salem, Rajesh Sani. "Short Term Atmospheric Pressure Cold Plasma treatment: A Novel Strategy for enhancing the Substrate Utilization in a thermophile, Geobacillus sp." Journal: Bioresource Technology, 2019.
- Abdollah Sarani, and Cosmina Nicula, Xavier F. Gonzales, Magesh T. Rajan. "Characterization of Kilohertz-Ignited Non-thermal He and He/O2 Plasma Pencil for Biomedical Applications." Journal: IEEE Transactions on Plasma Science - Special Issue, vol. 42, no. 10, 2014.
- Magesh T. Rajan, H. Anderson, X. F. Gonzales. "Induction of apoptosis in human myeloid leukemia cells by remote exposure of resistive barrier cold plasma." Journal: Biotechnology and Bioengineering, 2014.
- Magesh T. Rajan, Abdollah Sarani, and Cosmina Nicula. "Optical emission spectroscopic diagnostics of a non-thermal atmospheric pressure helium-oxygen plasma jet for biomedical applications." Journal of Applied Physics, vol. 113, p. 233302, 2013.
- Magesh T. Rajan. "A Portable Atmospheric Air Plasma Device for Biomedical Treatment Applications." ASME Journal of Medical Devices. vol. 7, Issue 1, p. 011007, 2013.
- Magesh T. Rajan, A. Sarani, and X. Gonzales. "Atmospheric resistive barrier air plasma jet induced bacterial inactivation in aqueous environment." Journal of Applied Physics, vol. 113, 2013.
- Magesh T. Rajan, Abdollah Sarani, and Xavier Gonzales. "Characterization of Portable Resistive Barrier Plasma Jet and Its Direct and Indirect Treatment for Antibiotic Resistant Bacteria and THP-1 Leukemia Cancer Cells." IEEE Transactions on Plasma Science. 40, 12, 2012.
- Magesh T. Rajan, Kenneth Williamson, and Anudeep Reddy Kandi. "Experimental Investigation of 1064-nm IR Laser-Induced Air Plasma Using Optical Laser Shadowgraphy Diagnostics." Journal: IEEE Transactions on Plasma Science. 40, no. 10, 2012.
- Magesh T. Rajan and Shane Thompson. "Optical breakdown threshold investigation of 1064 nm laser induced air plasmas" Journal of Applied Physics, vol. 111, p. 073302, 2012.
- Magesh T. Rajan and John Scharer. "Experimental Investigation of 193 nm Laser Breakdown in Air." Journal: IEEE Transactions on Plasma Science 36, no. 5, 2512 – 2521, 2008.
- Magesh T. Rajan and John Scharer. "Experimental Investigation of UV Laser Induced Plasma Density and Temperature Evolution in Air." Journal of Applied Physics 104, 013303, 2008.
- S. Luo, J. Scharer, Magesh T. Rajan, and M. Denning. "Experimental study of laser initiated rf sustained high pressure plasmas." Journal: IEEE Transactions on Plasma Science 34, no. 6, 2006.
- Igor Alexeff, Sriram Parameswaran, Magesh T. Rajan, and Michael Grace. "An Observation of Synthetic Ball Lightning." Journal: IEEE Transactions on Plasma Science 33, no. 21, 2005.
- Magesh T. Rajan, I. Alexeff, S. Parameswaran, and S. Beebe. "Atmospheric Pressure Resistive Barrier Cold Plasma for Biological Decontamination." Journal: IEEE Transactions on Plasma Science 33, no. 21, 2005.
- Igor Alexeff, Sriram Parameswaran, Magesh T. Rajan, and Michael Grace. "An experimental study of ball lightning." Journal: IEEE Transactions on Plasma Science 32, no. 3, 2004.
- Magesh T. Rajan, K. Patel, S. Vemulapalli, N. Pokala, "Treatment on Neuroblastoma Cancer Cells Using Atmospheric Cold Plasma." IEEE Proc. on Plasma Science, 2017.

- Magesh T. Rajan, A. Wilkins, B. Phung, “Atmospheric Pressure Cold Plasma Application for Hospital Sterilization.” IEEE Proc. on Plasma Science, 2017.
- Magesh T. Rajan, J. Turner, L. Pinnell, J. Tallman, E. Moreno, “Atmospheric Pressure Cold Plasma Application for Food Safety.” IEEE Proc. on Plasma Science, 2017.
- Magesh T. Rajan, H. Xu, C. Avalos, A. Matheson, E. Swinny, “Design and Control of Plasma Actuated Unmanned Aerial Vehicles.” IEEE Proc. on Plasma Science, 2017.
- Magesh T. Rajan, A. Rhoden, “Diagnostics of Laser Induced Plasma Dynamics in Gases and Liquids.” IEEE Proc. on Plasma Science, 2017.
- Magesh T. Rajan, “Laser Plasma Induced Nanofluids.” IEEE Proc. on Plasma Science, 2017.
- Ross W. Remiker, Robert J. Surdyk, and Robert C. Morrow, Magesh T. Rajan, “Non-Thermal Fresh Food Sanitation by Atmospheric Pressure Plasma.,” Proc. of American Society for Gravitational and Space Research, 2016.
- Ross W. Remiker, Robert J. Surdyk, and Robert C. Morrow, Magesh T. Rajan, “Non-Thermal Fresh Food Sanitation by Atmospheric Pressure Plasma.” Proc. of Environmental Systems.
- Magesh T. Rajan, H. Xu, C. Avalos, A. Matheson, E. Swinny, M. Martinez. “A Novel Plasma Actuated Unmanned Aerial Vehicle (UAV).” IEEE Proc. on Plasma Science, 2016.
- Magesh T. Rajan, J. Turner, L. Pinnell, J. Tallman, E. Moreno, “Non-Thermal Atmospheric Pressure Air Plasma Treatment for Food Safety.” IEEE Proc. on Plasma Science, 2016.
- Magesh T. Rajan, A. Rhoden, D. Denny, “Measurements and Modelling of Laser Induced Plasma Dynamics in Gases and Liquids.” IEEE Proc. on Plasma Science, 2016.
- Magesh T. Rajan, “Characterization of Laser Plasma Induced Aluminum Oxide Nanoparticles in Water.” IEEE Proc. on Plasma Science, 2016.
- Magesh T. Rajan, K. Patel, “Non-thermal Plasma Jet for Treatment of Neuroblastoma Cancer Cells.” IEEE Proc. on Plasma Science, 2016.
- Magesh T. Rajan, J. Turner, L. Pinnell, J. Tallman, E. Moreno, “Non-thermal Atmospheric Pressure Air Plasma Treatment for Food Safety.” IEEE Proc. on Plasma Science, 2016.
- Jennifer Ausland, Guadalupe Vidal, Kim Pham, Magesh T. Rajan. Effective deactivation of Bacillus cereus and Salmonella Typhimurium using non-thermal plasma. Proc. of LSAMP, 2013.
- Samantha Valdez, Heather Anderson, Xavier Gonzales, Magesh T. Rajan. Application of Non-thermal Plasma on Acute Myeloid Leukemia Cells to Induce Apoptosis. Proc. of LSAMP, 2013.
- Daniel Cantu, Jennifer Chancellor, Xavier Gonzales, Magesh T. Rajan. Cold Plasma Stimulated Anti-Infection Accelerated Wound Healing. Proc. of LSAMP, 2013.
- Magesh T. Rajan. “Diagnostics of laser Induced Plasmas in Different Phases and at phase boundaries using Laser Shadowgraphy, Two-wavelength Laser Interferometry, Schlieren Imaging and Optical Emission Spectroscopy,” IEEE Proc. on Plasma Science, 2014.
- Magesh T. Rajan, C. Nicula, A. Sarani. “Characterization of Non-Thermal Atmospheric Plasma Jet in Helium, Argon and Oxygen Gas Mixtures,” IEEE Proc. on Plasma Science, 2014.
- Magesh T. Rajan and Xavier Gonzales. “Atmospheric Pressure Resistive Barrier Low Temperature Plasma Treatment for Food Industry,” IEEE Proc. on Plasma Science, 2014.
- Magesh T. Rajan, Heather Anderson, Xavier Gonzales. “Induction of Apoptosis in Human Myeloid Leukemia Cells by Remote Exposure of Resistive Barrier Cold Plasma,” IEEE Proc. on Plasma Science, 2014.
- Magesh T. Rajan. “An Emerging Cold Plasma Technology for Bioengineering - Apoptotic Activation in Leukemia Cancer Cells by Novel Cold Plasma Technology”. Proc. of Frontiers in Bioengineering, 2014.
- Magesh T. Rajan, Kenneth Williamson. “Experimental Investigation of 1064 nm IR Laser Induced Plasmas in Gases and in Liquids,” IEEE Proc. on Plasma Science, 2013.

- Magesh T. Rajan. “Scalable Nanoparticle Synthesis in Liquids Using Laser Induced Plasmas at Phase Boundaries,” IEEE Proc. on Plasma Science, 2013.
- Heather Anderson, Xavier Gonzales, Samantha Valdez, Magesh T. Rajan. “Activation of Apoptotic Cell Death in Human Myeloid Leukemia Cells by RNS: A Novel Antitumor Approach Using Resistive Barrier Plasma,” IEEE Proc. on Plasma Science, 2013.
- Xavier Gonzales, Guadalupe Vidal-Martínez, Jennifer Ausland, Kim Hoang Pham, Magesh T. Rajan. “Air Plasma Jet Induced Bacterial Inactivation in Food Environments,” IEEE Proc. on Plasma Science, 2013.
- Magesh T. Rajan, Kenneth Williamson. “Laser Shadowgraphy, Two-Wavelength Laser Interferometry, Schlieren Imaging and Optical Emission Spectroscopy Diagnostics of Laser Induced Plasmas in Different Phases and at Phase Boundaries,” IEEE Proc. on Plasma Science, 2013.
- Abdollah Sarani, Cosmina Nicula, Magesh T. Rajan. “Characterization of Non-Thermal Atmospheric Pressure Helium Plasma Jet for Biomedical Applications,” IEEE Proc. on Plasma Science, 2013.
- Abdollah Sarani, Magesh T. Rajan, Edy Valdez, Valerie Ferdin. “Surface Modification of Polyethylene Terephthalate by Atmospheric Pressure Cold Plasma Jet.,” IEEE Proc. on Plasma Science, 2013.
- Magesh T. Rajan, Abdollah Sarani, Xavier F. Gonzales. Characterization of an Atmospheric Pressure Plasma Jet and its Applications for Disinfection and Cancer Treatment. Proc. of MMVR20/NextMed, 2013.
- Magesh T. Rajan, Xavier F. Gonzales, Heather Anderson. Regulated Cellular Exposure to Non-Thermal Plasma Allows Preferentially Directed Apoptosis in Acute Monocytic Leukemia Cells. Proc. of MMVR20/NextMed, 2013.
- Heather Anderson, Magesh T. Rajan, Xavier Gonzales. In Vitro Cold Plasma Treatment Inducing Apoptosis in Acute Myeloid Leukemia Cancer Cells. Proc. of SACNAS, (*Best Paper Award*), 2012.
- Valerie Ferdin, Francisco Rodriguez, Magesh T. Rajan, Abdollah Sarani. Surface Energy Modification of Polymeric Substrates for Biomedical Applications by Atmospheric Pressure Non-Thermal Plasma Jet. Proc. of SACNAS, 2012.
- Jennifer Ausland, Magesh T. Rajan, Guadalupe Vidal. Deactivation of Salmonella Typhimurium, Bacillus cereus vegetative cells and spores by a non-thermal indirect plasma for food industry applications. Proc. of SACNAS, 2012.
- Abdollah Sarani and Magesh T. Rajan. Non-thermal Atmospheric Pressure Plasma Jet for Biomedical Applications. Proc. of SACNAS, 2012.
- Megan Norfolk, Xavier F. Gonzales, Magesh T. Rajan. Non-thermal Ionized Plasma Induction of Pre-programmed Cell Death in Acute Monocytic Leukemia Cells. Proc. of SACNAS, 2012.
- Hoang Thi Pham, Magesh T. Rajan, Guadalupe Vidal. The effect of the non-thermal plasma on the sterilization and growth of Staphylococcus aureus and Pseudomonas aerunginosa for medical applications. Proc. of SACNAS, 2012.
- Eduardo Valdes, Magesh T. Rajan, Abdollah Sarani. Surface modification of planar Polyurethane using an atmospheric pressure RF plasma jet in helium/oxygen gas mixture. Proc. of SACNAS, (*Best Paper Award*), 2012.
- Magesh T. Rajan, Guadalupe Vidal-Martínez, Alison Doyoungan, Hoang Pham. Cold plasma inactivation of Escherichia coli on agar plates as an alternative sterilization method and its effect on bacterial growth. Proc. of American Society for Microbiology, 2012.
- Guadalupe Vidal-Martínez, Hoang Pham, Magesh T. Rajan. The effect of cold plasma on Staphylococcus aureus and Pseudomonas aeruginosa growth and its potential use as an alternative method for infection treatment. Proc. of American Society for Microbiology, 2012.
- Magesh T. Rajan and Kenneth Williamson. Optical Diagnostics and Breakdown Scaling of 1064 nm Laser Induced Plasmas in Air and other Phase Boundaries. IEEE Proc. of Plasma Science, 2012.
- Magesh T. Rajan, Xavier Gonzales, Heather Anderson and Megan Norfolk. Non-thermal Plasma Induction of Pre-Programmed Cell Death in Monocytic Leukemia Cells. IEEE Proc. of Plasma Science, 2012.
- Magesh T. Rajan, Guadalupe Vidal, Hoang Pham and Jennifer Ausland. Effect of Non-thermal Plasma Exposure on Regrowth Potential of Foodborne and Pathogens. IEEE Proc. of Plasma Science, 2012.

- Magesh T. Rajan, Lillian Waldbeser. Portable Plasma Medical Device for Infection Treatment. Proc. of MMVR19/NextMed, 2012.
- Magesh T. Rajan, Lillian Waldbeser, Amanda Whitmill. THP-1 Leukemia Cancer Treatment Using Portable Plasma Device. Proc. of MMVR19/NextMed, 2012.
- Jennifer Ausland, Guadalupe Vidal, Kim Pham, Magesh T. Rajan. Effective non-thermal plasma deactivation of Bacillus cereus and Salmonella Typhimurium in poultry and produce. Proc. of Pathways, 2012.
- Heather Anderson, Megan Norfolk, Magesh T. Rajan, Xavier Gonzales. In Vitro Cold Plasma Treatment Inducing Apoptosis in Acute Myeloid Leukemia Cancer Cells. Proc. of Pathways, 2012.
- Eduardo Valdes, Magesh T. Rajan, Abdollah Sarani. Surface modification of planar Polyurethane using an atmospheric pressure RF plasma jet in helium/oxygen gas. Proc. of Pathways, 2012.
- Eduardo Valdez and Magesh T. Rajan. Characterization of Diffused Atmospheric Pressure Cold Plasma Reactive Gas Species for Surface Treatment. Proc. of Pathways, 2012.
- Jennifer Ausland, Guadalupe Vidal, Magesh T. Rajan. Deactivation of Bacillus cereus Vegetative Cells and Spores by a Non-thermal Plasma Exposure for Food Industry. Proc. of Pathways, 2012.
- Megan Norfolk, Xavier F. Gonzales, Heather Anderson, Magesh T. Rajan. Non-thermal Plasma Induction of Pre-programmed Cell Death in Monocytic Leukemia Cells. Proc. of Pathways, 2012.
- Valerie Ferdin, Francisco Rodriguez, Eduardo Valdes, Magesh T. Rajan. Atmospheric Non-Thermal Plasma Assisted Surface Energy Modification of Polymeric Materials. Proc. of LSAMP, 2012.
- Magesh T. Rajan. Experimental Study of Shock Wave Discontinuities and Interactions with Laser Induced Plasmas. IEEE Proc. of Plasma Science, 2011.
- Magesh T. Rajan. High Power Pulsed Laser Induced Breakdown Plasma at Gas-Solid Interface. IEEE Proc. of Pulsed Power, 2011.
- Magesh T. Rajan. Report on Portable Plasma Bio-Medical Device and Characterization. Midwest Technology Exchange, 2011.
- E Valdez and Magesh T. Rajan. Reactive Gas Species Characterization of Diffused Atmospheric Pressure Cold Plasma System. SACNAS, 2011.
- Magesh T. Rajan. Portable Plasma Biomedical Device for Cancer Treatment. ASME Emerging Technologies - Frontiers in Biomedical Devices, 2011.
- Magesh T. Rajan and Lilian Waldbeser. Effective Non-Thermal Plasma Induction of Apoptosis in Leukemia Cancer Cells. IEEE Proc. of Plasma Science, 2011.
- Magesh T. Rajan and Lilian Waldbeser. Treatment of Cancer Cells using a Pulsed Power Plasma Source. IEEE Proc. of Plasma Science, 2011.
- M Norfolk, Magesh T. Rajan, and A whitmill. Apoptosis and Autophagy in Cancer Cells Induced from Non-Thermal Ionized Plasma. SACNAS Proc., (Best Paper Award), 2011.
- Heather Anderson, Magesh T. Rajan, G Vidal, and H Pam. Non-Thermal Plasma Decontamination of E. Coli and S. Aureus – Research and Review. SACNAS Proc., 2011.
- Magesh T. Rajan. Portable Plasma Medical Device for Infection Treatment and Wound Healing. ASME Emerging Technologies - 6th Frontiers in Biomedical Devices, 2011.
- Magesh T. Rajan and Lilian Waldbeser. Portable Plasma Torch on E. Coli, S. Aureus, N. Meningitidis and other Clinical Isolates. IEEE Proc. of Plasma Science, 2011.
- G Vidal, Magesh T. Rajan, and H Pam. Cold Plasma Inactivation of E. coli and S. aureus on Solid Surfaces for Infection Treatment. SACNAS Proc., 2011.
- H Pam, Magesh T. Rajan, G Vidal, D Alison, J Mott, and G Buck. Sterilization of Escherichia coli and Staphylococcus aureus using a Novel Cold Plasma Technology. SACNAS Proc., 2011.

- Magesh T. Rajan., Waldbeser, L. S. (2010). Plasma – NOX Induced Apoptosis on Various Cell Structures (0730-9244 ed.). IEEE Proc. of Plasma Science, 2010.
- Hardeman, K., Magesh T. Rajan., Waldbeser, L. S. (2010). Effects of Plasma Treatment on E. Coli, S. Aureus, N. Meningitidis (vol. 7, pp. 131). SACNAS Proc. (*Best Paper Award*), 2010.
- Magesh T. Rajan., Whitmill, A., Waldbeser, L. S. Effects of Non-Thermal Ionized Plasma on Human Leukemia and Lymphoma Cells, vol. 7, pp. 82. SACNAS Proc., 2010.
- Magesh T. Rajan and John Scharer. Measurements of Air Breakdown and Scaling to Microwaves Using 193 nm Focused Laser Radiation. IEEE Proc. of Vacuum Science, 2007.
- Magesh T. Rajan and John Scharer. Measurements of Air Breakdown Process Using 193 nm Focused Laser Radiation. IEEE Proc. of Plasma Science, 2007.
- Siqi Luo, Magesh T. Rajan, and John Scharer. Optimization and Diagnostics of High-Pressure Air Plasmas. IEEE Proc. of Plasma Science, 2007.
- Magesh T. Rajan. Air Breakdown Process Using 193 nm Focused Laser Radiation. Madison, WI: Research - Univ. of Wisconsin Madison, 2006.
- Siqi Luo, Magesh T. Rajan, and John Scharer. Diagnostics and Simulation of High-pressure Argon and Nitrogen Plasma. IEEE Proc. of Plasma Science, 2006.
- Magesh T. Rajan, Siqi Luo, and John Scharer. Optical Diagnostics of Laser Initiated, RF Sustained High Pressure Seeded Plasmas. IEEE Proc. of Plasma Science, 2006.
- Igor Alexeff and Magesh T. Rajan. Advances in Plasma Antenna. IEEE Proc. of Plasma Science, 2005.
- Magesh T. Rajan and Igor Alexeff. Atmospheric Pressure Resistive Barrier Cold Plasma for Biological Decontamination. IEEE Proc. of Plasma Science, 2005.
- John Scharer, Magesh T. Rajan, and Siqi Luo. Efficient Creation of Laser Initiated, RF Sustained Atmospheric Pressure Range Plasmas. IEEE Proc. of Plasma Science, 2005.
- Magesh T. Rajan, John Scharer, and Siqi Luo. Optical Emission Measurements of Laser Initiated, RF Sustained High Pressure Seeded Plasmas. IEEE Proc. of Plasma Science, 2005.
- Siqi Luo, Magesh T. Rajan, and John Scharer. RF Matching, Time Resolved Impedance, Power Measurements of Laser Initiated, RF Sustained Atmospheric Plasmas. IEEE Proc. of Plasma Science, 2005.
- Magesh T. Rajan and Igor Alexeff. Ambient Pressure Resistive Barrier Cold Plasma Discharge for Biological and Environmental Applications. IEEE Proc. of Plasma Science, 2004.
- Igor Alexeff and Magesh T. Rajan. An Experimental Model of Ball Lightning. IEEE Proc. of Plasma Sci, 2004.
- Magesh T. Rajan, Kamran Akhtar, and John Scharer. Optical Emission Measurements of Laser Initiated, RF Sustained High Pressure Seeded Plasmas. IEEE Proc. of Plasma Science, 2004.
- Magesh T. Rajan and Igor Alexeff. Plasma Stealth Antennas – A possible breakthrough in Stealth Technology. Signature Management: Pursuit of Stealth, 2004.
- Magesh T. Rajan and Igor Alexeff. A Dual Mode – Steady State Atmospheric Pressure Nonthermal Resistive Barrier Plasma Discharge. Proc. of American Physical Society, 2003.
- Magesh T. Rajan, Igor Alexeff, and Sriram Paremswaran. Characteristics of the Steady-State Atmospheric Pressure DC Discharge. IEEE Proc. of Plasma Science, 2003.
- Magesh T. Rajan, Igor Alexeff, and Sriram Parameswaran. Simple Model of an Experimental Ball Lightning. IEEE Proc. of Plasma Science, 2003.

SUPERVISION AND TRAINING

***RESEARCH SCIENTISTS** (TRAINING, MENTORING AND SUPERVISION)*

- Dr. Cosmina Nicula, Research Scientist. (Electrical Engineering)
- Dr. Abdollah Sarani, Research Scientist. (Electrical Engineering)
- Dr. Xavier Gonzales, Research Scientist. (Biomedical Sciences)
- Dr. Kenneth Williamson, Research Scientist. (Electrical Engineering)
- Dr. Guadalupe Vidal, Research Scientist. (Microbiology)
- Dr. Zhen Ma, Research Scientist. (Mechanical Engineering)

***GRADUATES** (STUDENT TRAINING, MENTORING AND MATRICULATION)*

- Rizbi Hasan, MS, Electrical Engineering, Laser Plasma Induced Novel Nanofluids, 2019
- Saeed Shahmiri, MS, Electrical Engineering, Intelligent Robotic Systems, 2018.
- Govind Chilkoor, MS, Environmental Eng., Environmental Impacts of Flowback Water, 2018.
- Sambhu Sapkota, MS, Environmental Eng., Plasma treated Graphene for Biobattery-Supercapacitor, 2019.
- Shane Thompson PhD., Electrical Engineering, Experimental study of laser air plasmas, 2017
- Hongjie Wang PhD., Atmospheric Sci., The CO_2 and O_2 dynamics of the Gulf of Mexico, 2017
- Maureen Trnka PhD., Atmospheric Sci., Associations of chlorophyll and wind forcing, 2015
- Rizbi Hassan, MS, Electrical Engineering, Laser Plasma Nanoparticle Characterization, 2018
- Sandesh Acharya, MS Electrical Engineering, Power Engineering and Applications, 2018
- Sreeja Vemulapalli, MS Engineering Ed, Plasma Induced Neuroblastoma Cancer Therapy, 2017
- Nandini Pokala, MS Engineering Ed, Plasma Induced Neuroblastoma Cancer Therapy, 2017
- Jennifer Chancellor, MS Biology, Non-thermal plasma on various phases of wound healing, 2014
- Heather Anderson, MS Biomedical Sci., Plasma Induced Apoptosis Leukemia Cancer Cells, 2013
- Anudeep Kandi, MS Computer Science, Characterization of High Power 1064 nm Lasers, 2012
- Chelsea Perez, MS Engineering Ed, Cold Plasma Decontamination for Food Industry, 2011
- Krishna Patel, MS Biology, Cold Plasma Neuroblastoma Cancer Treatment, 2017
- Ashley Wilkins, MS Biology, Cold Plasma Hospital Sterilization, 2017
- Brandon Phung, MS Biology, Cold Plasma Hospital Sterilization, 2017
- Anthony Matheson, Mechanical Engineering, Plasma Technology & Applications, 2017
- Clyde Avalos, Mechanical Engineering, Plasma Technology and Applications, 2017
- Michael Martinez, Mechanical Engineering, Plasma Technology and Applications, 2016
- Samuel Guevara, Mechanical Engineering, Plasma Technology and Applications, 2015
- Andres Ramos, Mechanical Engineering, Large volume resistive barrier discharge, 2015
- Valerie Ferdin, Mechanical Engineering, Cold Plasma Jet Applications, 2013
- Amanda Whitmill, Biomed Science, Plasma effects on Leukemia Cancer Cell Lines, 2011
- Eduardo Valdes, Mechanical Engineering, Atmospheric Pressure Cold Plasma Jet, 2014
- Daniel Cantu Biology, Biomed, Non-thermal plasma on various phases of wound healing, 2014
- Samantha Valdez, Biomedical Sci., THP-1 cancer cells treatment using Cold Plasmas, 2013
- Cody Torno, Mechanical Engineering, Atmospheric Pressure Cold Plasma Jet, 2013
- Jennifer Ausland, Biology, Bacillus cereus sterilization by cold plasma, 2013
- Bokang Yang, Mechanical Engineering, Plasma Induced Surface Energy Measurements, 2012
- Hoang Thi Pham, Biology, Sterilization of Staphylococcus aureus, 2012
- Megan Norfolk, Biomedical Sciences, THP-1 cancer cells treatment using Cold Plasmas, 2012
- Francisco Rodriguez, Mechanical Engineering, Surface Energy Modification by Plasma, 2011
- Alison Doyungan, Biology, Deactivation of Escherichia coli using Cold Plasma, 2011
- James Shames, Mechanical Engineering, Development of Large Volume Plasma, 2011
- Thurman Walling, Mechanical Engineering, Atmospheric Pressure Cold Plasma, 2011
- Keisha Hardeman, Biomedical Sciences, Plasma Decontamination on various Bacteria, 2010
- Daniel Field, Mechanical Engineering, Plasma Optical Emission Spectroscopy, 2010
- Joseph Gloria, Mechanical Engineering, Plasma Decontamination Unit for Food Industry, 2011
- Ruben Longoria, Mechanical Engineering, Plasma Actuators for Wind Energy Conversion, 2012
- Alex Iben, Mechanical Engineering, Plasma Actuators for Wind Energy Conversion, 2012
- Matt White, Mechanical Engineering, Plasma Actuators for Wind Energy Conversion, 2012

TEACHING & LEARNING INNOVATION

- *Excellence in Teaching Innovation Award,* 2016, Texas A&M University-CC
- *Excellence in Teaching Innovation Award,* 2015, Texas A&M University-CC

COURSES DEVELOPED

Taught *over 80-course* offerings since Fall 2009. Designed and Developed 9 new Courses:

- Power and Energy Systems
- Introduction to Plasma Engineering and Applications (F2F, Blended, Fully Online)
- Advanced Plasma Engineering and Applications (F2F, Blended, Fully Online)
- Advanced Topics in Plasma Engineering (F2F, Blended, Fully Online)
- Advanced Topics in - Plasma Science in Biology
- Materials Science for Engineering Lecture (F2F, Blended, Fully Online)
- Materials Science for Engineering Laboratory
- Materials Science for Engineering Technology Lecture (F2F, Blended, Fully Online)
- Materials Science for Engineering Technology Laboratory

TEACHING CERTIFICATIONS

- Certificate of Challenge-Based Instruction, Center of Excellence in STEM Education, University of Texas - Pan American (UTPA), TX
- Certificate of Online Course Design, Office of Distance Education and Learning Technologies (ODELT), Texas A&M University, TX
- Certificate of Online Course Development, Office of Distance Education and Learning Technologies (ODELT), Texas A&M University, TX
- Certificate of Online Course Delivery, Office of Distance Education and Learning Technologies (ODELT), Texas A&M University, TX
- Student Metacognition and Motivation, Advancing STEM Learning for all Students, STEM Summer Program, STEM Outreach, Access, and Retention (SOAR), Texas A&M University, TX
- Course Re-Design on Challenge-Based Instruction, Center of Excellence in STEM Education, University of Texas - Pan American (UTPA), TX
- Flipped Classroom, Center for Faculty Excellence (CFE), Texas A&M University, TX
- Integrating Sustainability into Courses, Principles and Tools to Expand Your Educative Capacity, National Science Foundation (NSF) Academy, Anaheim, CA

STUDENT-CENTERED TEACHING TECHNIQUES DELIVERED

- F2F, Face to Face Instruction
- FLP, Flipped Classroom Instruction
- BLD/HYB, Blended/Hybrid Classroom Instruction
- ONL, Fully-Online Course Delivery
- CBI, Challenge-Based Instruction
- PBI, Project-Based Instruction
- GUI, Guided Inquiry-Based Instruction
- CBE, Competency-Based Education

ACADEMIC ADVISING

- Performed academic advising and mentoring for over *1200 students* since 2009.
- Student academic advising and mentoring activities include scheduling advising meetings, reviewing student academic progress & performance, advising for course pre-reqs and enrollments, releasing student academic holds.

TEACHING INNOVATION – PRESENTATIONS

- (Invited Speaker) Magesh T. Rajan, Vertical Integration of Research and Education – Student Learning Beyond Classroom, Distinguished TX A&M Faculty FACTalk Series
- (Invited Speaker) Magesh T. Rajan, Materials Engineering Course Design and Improvement for Effective Research-Based Learning Environment, Islander Forum, Texas A&M University
- Magesh T. Rajan, Materials Engineering Course Design and Improvement for Effective Research-Based Learning Environment. 1st Faculty Symposium. Course Design for the Millennial Student, Texas A&M University. (Showcased by the Center for Faculty Excellence)
- Magesh T. Rajan, Flipped and Blended Course Redesign on Materials Engineering Course, Community of Practice, Center for Faculty Excellence (CFE), Texas A&M University
- (Invited Speaker) Magesh T. Rajan, Materials Science Course Re-Design using Challenge-Based Instruction, Center of Excellence in STEM Education, University of Texas

NON-CREDIT INSTRUCTION

- Design and Fabrication of Conveyor System with Variable Speeds
- Ionized Non-Thermal Plasma effects on THP-1 cells
- The effects of non-thermal plasma on various phases of wound healing
- The effects of non-thermal plasma on Deactivation of Vibrio vulnificus, Salmonella Typhimurium, and Bacillus cereus Vegetative Cells and Spores for Food Industry Applications
- Surface energy modification of polymeric substrates for biomedical applications by atmospheric pressure non-thermal plasma jet
- Surface energy modification of polymeric substrates for biomedical applications by atmospheric pressure non-thermal plasma jet
- Plasma Technologies for Foundations of Engineering
- Plasmas Technology and its applications for Freshman Seminar Series

SERVICE LEADERSHIP ACCOMPLISHMENTS

UNIVERSITY / COLLEGE LEVEL SERVICE ACTIVITIES

- 2021 SACSCOC PVAMU University reaccreditation, 2021
- PVAMU 2021-2026 University Strategic Planning, 2021
- Microsoft-Accenture-PVAMU Partnership for Student Training and Workforce Development, 2021
- Texas A&M University – PVAMU partnership for faculty research collaboration, 2020
- 2020 University Vision and Strategic Planning Committee, Texas A&M, 2014
- Strategic Enrollment Planning Committee, Marketing, SDSMT, 2018
- Department Head's 5-year Evaluation Process Planning Committee, SDSMT, 2017
- Graduate Student Recruitment Ambassador to India (300% growth), Texas A&M, 2014
- Higher Education Committee at Capitol, Austin, Texas, 2011
- Faculty Senator, Elected by Faculty, University Faculty Senate, Texas A&M, 2016 – 2017
- Academic Leadership Council, SDSMT, 2017
- Council on Graduate Education, SDSMT, 2017 – 2018
- International Education Committee, Elected by Faculty, Texas A&M, 2015 – 2017
- Council of Principal Investigators, Elected by Faculty, Texas A&M, 2014 – 2016
- Research Enhancement Committee, Elected by Faculty, Texas A&M, 2014 – 2017
- College of Science and Engineering Strategic Planning, Texas A&M, 2015
- Chair, Engineering MOU between Texas A&M & Del Mar Community College, 2010 – 2011
- TEXAS A&M System Level Engineering Coordination Program, TEXAS A&M, 2009 – 2015
- Curriculum Committee, School of Engineering and Computing Sci., Texas A&M, 2015 – 2017

- Elected Faculty Representative, School of Eng. and Comp. Sci., Texas A&M, 2015 – 2016
- College of Science and Engineering Scholarship Committee, Texas A&M, 2009 – 2012
- Tenure and Promotion Committee, School of Engineering and Comp Sci., Texas A&M

SELECTED DEPARTMENT LEVEL SERVICE ACTIVITIES

- Chair, Electrical and Computer Engr (ECE) Department Strategic Planning Committee, SDSMT, 2018
- Chair, ECE Department Faculty Workload Model, SDSMT, 2018
- Chair, ECE Department Scholarship Committee, SDSMT, 2017- present
- Chair, Recruitment & Retention Committee, ECE, SDSMT, 2017- present
- Chair, Development & Fundraising Committee, ECE, SDSMT, 2017- present
- Chair, Corporate Engagement Committee, ECE, SDSMT, 2017- present
- Chair, New Faculty Mentoring Committee, ECE, SDSMT, 2017- present
- Chair, Department Culture Committee, ECE, SDSMT, 2017- present
- Chair, Student Success Initiative, ECE, SDSMT, 2017- present
- Chair, Lab and Facilities Upgrade Committee, ECE, SDSMT, 2017- present
- Chair, EE Ph.D. Program Development Committee, ECE, SDSMT, 2017- present
- Chair, Dept. Promotion & Marketing Committee, ECE, SDSMT, 2017- present
- Chair, MS Electrical Engineering Graduate Program Accreditation Committee, SDSMT, 2017- present
- Chair, Electrical Engineering Curriculum Committee, Texas A&M, 2015 – 2017
- Chair, Dept. Principal Investigator (PI) Committee, ECE, SDSMT, 2017- present
- Chair, Graduate Committee, ECE, SDSMT, 2017- present
- New Electrical Engr Program Development and Implementation, Texas A&M, 2013 – 2017
- Department of Engineering Curriculum Committee, Texas A&M, 2015 – 2017
- Engineering Technology Program Curriculum Review, Texas A&M, 2009 – 2017
- Engineering Laboratory Committee, Texas A&M, 2010 – 2017
- Industrial Advisory Board IAB, Texas A&M, and SDSMT, 2010- present
- ABET Accreditation Committee, 100% Successful in 6 accreditations, Texas A&M and SDSMT, 2010
- Chair, 12 Faculty Search & Hiring Committees (EE, CE, ME and IE), Texas A&M / SDSMT, 2010 - 2018
- Chair, 13 Multiple Staff Search & Hiring Committees, Texas A&M / SDSMT, 2010 - 2018

SELECTED INDUSTRY PARTNERSHIP AND ECONOMIC DEVELOPMENT ACTIVITIES

- Commercial Technology Reviewer, Governor Perry's Texas Emerging Technology, Texas
- Entrepreneur Member, Corpus Christi Regional Economic Development Corporation, Texas
- Entrepreneur in Residence, Coastal Bend Business Innovation Center, Texas
- Entrepreneur, South Texas Economic Development Center, Texas
- Invited Speaker, Rotary Club of Corpus Christi, Texas
- Member, Business Professionals of the Coastal Bend, Texas
- Corporate Partnership, Driscoll Children's Hospital System, Texas
- Corporate Partnership, CHRISTUS Sphon Hospital System, Texas
- Corporate Partnership, Pepsi Co. Corporate Office, Texas
- Corporate Partnership, HEB, Corporate Office, Texas
- Corporate Partnership, Water Street Restaurants, Texas
- Non-Profit Partnership, Brooke's Blossoming Hope for Childhood Cancer Foundation, Texas
- SBIR/STTR Reviewer, Office of Fusion Energy Sciences (FES)
- Business Representative, U.S. Senator John Cornyn visit to Innovation Center

- Member, Corpus Christi Hispanic Chamber of Commerce
- Board Member, Junior Auxiliary Board, Corpus Christi Museum of Science and History
- Panel Speaker, SBIR/STTR Workshop, Coastal Bend Business Innovation Center

SELECTED OUTREACH & COMMUNITY SERVICE ACTIVITIES

- Invited Speaker, Houston Tech Rodeo Conference, Texas, 2021
- Director, 1st, 2nd, and 3rd Annual Texas Coastal Bend Regional Engineering Competitions
- Director, Engineering-Week Activities, Texas A&M, 2010-2013
- Director, Sumo-Bots, Science Olympiad, Texas, 2011
- Advisory Board, Del Mar Community College – Engineering Program, Texas, 2010 - 2017
- STEM First Tech Challenge (FTC), Outreach & Recruitment, Texas, 2013
- Director, 1st South Texas Engineering Design Fair for Outreach & Recruitment, Texas, 2011
- Invited Speaker, STEM Summer Institute for High School Students, 2014
- Invited Speaker, Lab Tour Annually for School Students in the Texas Coastal Bend Region
- Invited Speaker, Engineering Program - Recruiting Event for ESLI Students
- Science Fair Judge, School of Science and Technology, Texas
- Faculty Mentor, High School Innovation Academy Mentors, 2010-2017

SELECTED PROFESSIONAL SERVICE & LEADERSHIP ACTIVITIES

- Board of Director, NASA Texas Space Grant Consortium, Texas
- Board of Director, NASA Technology Collaboration Center, Texas
- Executive Committee, IEEE Black Hills Subsection, South Dakota
- Program Evaluator (PEV), ABET Accreditation Board for Engineering and Technology
- Committee Member, STEA South Texas Engineering Alliance Consortium
- Associate Editor, AIMS Bioengineering Journal
- Editorial, International Journal of Biomedical Engineering
- Editor, Current Research in Surface Chemistry Journal
- Technical Session Chair, IEEE International Conference on Plasma Science
- Panel Reviewer, US DOE Department of Energy, SBIR/STTR Programs
- Panel Reviewer, US NSF National Science Foundation
- Elected Representative, NASA TSGC Texas Space Grant Consortium
- Grant Reviewer, NASA TSGC Texas Space Grant Consortium
- Founder and Faculty Advisor, Coastal Bend ASME Chapter, Nationally Recognized
- SDES SD Engineering Society
- Technical Chair, Texas A&M Pathways Conference
- Technical Chair, LSAMP Louis Stokes Alliances for Minority Participation Conference
- Evaluator, Promotion Dossiers for the several US and International institutions
- Member, ECEDHA Electrical and Computer Engineering Department Head Association
- Panelist, NSF National Science Foundation Grant Proposal Review
- Technical Session Chair, SACNAS Society for Advancement of Chicanos/Hispanics and Native Americans in Science Conference
- Journal Reviewer: IEEE Transactions on Plasma Science, JAP Journal of Applied Physics, EPL Europhysics Letters, Journal of Applied Optics, Journal of Optical Communications, Optics Express, Medical Research Archives, Food Biophysics, Biophysical Reviews and Letters, Journal of Biotechnology & Biomaterials, Biotechnology, and Bioengineering