School of Science, Engineering and Technology Strategic Plan 2025

Aspirational Culture

Guided by our Marianist values, we have meticulously crafted an environment where faith and academic excellence in science, engineering, technology and health harmoniously coexist. Our students embark on a journey of self-discovery and spiritual growth, forging a strong connection between their intellectual pursuits and their inner convictions. We believe that a robust faith foundation is integral to producing ethical and compassionate leaders who contribute meaningfully to the global community.

In our halls, science, engineering, technology, liberal arts, and health professional disciplines intertwine, resulting in a unique and enriching educational experience. We understand that innovation flourishes when diverse perspectives intersect. Our students engage in interdisciplinary exploration, synthesizing knowledge from various fields to tackle complex challenges. This comprehensive approach nurtures well-rounded individuals who possess both specialized expertise and a broad worldview.

We cultivate compassionate, skilled healthcare professionals who are deeply committed to the well-being of individuals and communities, particularly those underserved in San Antonio and beyond. Our students are encouraged to see their future roles not just as healthcare providers, but as agents of positive change in society and makers of healthier communities. We provide rigorous, technologically advanced academic programs that prepare students for the evolving challenges of the healthcare field. We recognize the importance of care within a culturally sensitive context and actively partner with local healthcare organizations, community clinics, and outreach programs to address the unique health needs of San Antonio's diverse population. Interprofessional collaboration is a priority, so we promote teamwork and interdisciplinary learning that reflects the modern healthcare setting. We instill in our students a strong sense of ethical responsibility and the courage to advocate for equitable healthcare access and policies.

Embracing change is at the core of our ethos. We celebrate adaptation as a catalyst for scientific progress and encourage our students and faculty to be fearless in their pursuit of innovation. In an ever-evolving world, we empower our community to embrace modern technologies, methodologies, and paradigms. Through this embrace of change, we ensure our graduates are equipped to lead with resilience and confidence in an unpredictable future.

Family spirit is more than just a phrase here – it is the foundation of our tight-knit community. Our students, faculty, and staff forge genuine connections that extend beyond the classroom. This sense of belonging fosters collaboration, empathy, and lifelong friendships. Our commitment to each other's success creates an environment where individuals thrive academically, personally, and spiritually.

Sustainability is a central tenet of our educational mission. We believe in responsible stewardship of our planet and its resources. Our research and practices prioritize environmental conservation, encouraging innovative solutions that address pressing global challenges. Through our sustainable initiatives, we cultivate environmentally conscious leaders who are dedicated to preserving our world for future generations.

Career preparation takes on a dynamic and practical dimension in our culture. We blend rigorous academic training with real-world experiences, ensuring that our graduates are prepared to excel in their chosen professions from day one. Industry partnerships, internships, and hands-on projects provide students with the skills, confidence, and networks necessary to thrive in a competitive job market. (e.g., projects that help students understand disease mechanisms, investigate new therapies and products, prevent cyberattacks, conserve resources, or improve supply chain efficiencies in the workplace).

We intentionally promote a culture where faculty and students work as collaborative researchers. Faculty members are encouraged to involve students at all levels in their research projects, creating opportunities for students to develop critical thinking, methodological rigor, and analytical skills. Through these joint efforts, students learn to formulate research questions, solve problems, design experiments, analyze data, and communicate findings effectively. Meanwhile, faculty benefit from fresh perspectives and the opportunity to nurture the next generation of researchers.

As teacher-scholars, we recognize that the most inspiring and effective educators are those who actively engage in research while remaining deeply committed to student learning and development. Our faculty members are mentors who bridge the gap between theoretical knowledge and practical application. By bringing research experiences into the classroom, our faculty ignites curiosity, promotes critical thinking, and prepares students for the evolving challenges of the increasingly technological world. We cultivate an environment where teaching and research are synergistic, not competing priorities. We celebrate and support our faculty's dual role, recognizing that their contributions as teacher-scholars are fundamental to our mission.

Finally, our commitment to serving the common good underscores everything we do. We believe in the transformative power of education to drive positive change in society. Our students are not just equipped for personal success – they are empowered to make meaningful contributions to the betterment of communities, both local and global. Whether it is through service projects, volunteerism, or socially responsible research, our graduates are poised to be compassionate leaders who uplift others.

Vision
To ethically serve the world through transformative science, engineering, technology and health education

Mission
Our mission is to cultivate a thriving, faith-forward learning community that nurtures individuals to maximize their talents in service to the world, to advance ethical leadership, and to promote sustainable innovation in science, engineering, technology and health to advance the common good.

Strategic Planning Process
The strategic planning process began with a thorough review of past efforts, examining the strategic planning, mission, and vision documents from 2009, 2012, and 2013. This provided a foundational understanding of the organization's historical direction and its evolution over time.

Foundational Strategic Initiatives from 2009-2013
- Raise Visibility of SET
- Build Relationships and tap into expertise of the community
- Evaluate existing programs to ensure they are current and competitive
- Explore new academic programs to meet emerging needs
- Recruit and retain faculty, students, and staff to serve the needs of the region and nation
- Outreach to youth, especially underrepresented minorities
- Faculty-student research
- Fundraising
- Facilities master planning
- International activities and programs

To gain fresh insights and refine our strategic approach, a new strategic planning survey was conducted. SET faculty and staff completed the survey with an 81% response rate (61/75). This survey aimed to clarify our core values and guiding principles while also performing a SWOT analysis to identify our strengths, weaknesses, opportunities, and threats. The data gathered from this survey set the stage for deeper, more informed discussions.

We integrated various local, regional, and national reports to align all our programs, whether existing or newly proposed, with community needs, economic development goals of the city, historical data from Light Cast, Hanover forecasts, Bureau of Labor Statistics data, Chronicle of Higher Education reports, and others. We attended greater: SATX events, Biomed SA events, SAMA events, ASEE (American Society for Engineering Education) EDI (Engineering Deans Institute), etc., to incorporate best practices and emerging trends into our developing plan.

Armed with this preliminary information, we organized Town Hall #1. This inclusive event was designed to engage a broad cross-section of our SET community and included faculty, staff and SET Dean's Advisory Council Members. Open dialogue and collective brainstorming were encouraged. The input from Town Hall #1 was invaluable, providing a diverse array of perspectives and ideas.

Following the town hall, we meticulously assessed the results, distilling key themes and insights. To further refine our mission and vision statements, we convened a select group of small group leaders from the SET Dean's Council. Their focused input helped shape a more cohesive and inspiring direction for our School.

Next, we presented the refined mission and vision statements to the SET Dean's Advisory Council. Their feedback was instrumental in ensuring that our statements resonated with the organization's broader goals and addressed the needs of our various stakeholders outside the university. We also conducted a review with an SET Student Advisory Panel, which included five student representatives. This step was crucial in incorporating the perspectives and needs of our student body, ensuring that our strategic plan was holistic and inclusive.

With a clear mission and vision in place, we established five strategic focus areas. These areas were chosen to align with our organizational priorities and to address the key issues identified in the earlier stages of the planning process.

Within each focus area, we developed specific goals aimed at driving progress and achieving our strategic objectives. To ensure these goals were actionable and measurable, we held Town Hall #2. This second town hall served to validate our focus areas and goals, allowing for additional input from SET faculty and staff and further refinement (Table 1).

Following Town Hall #2, we worked collaboratively with department and staff units to develop action steps and key performance indicators (Appendix 1). This collaboration ensured that our plans were grounded in the practical realities of our daily operations and that we had clear metrics to track our progress.

To finalize our strategic plan, we conducted a review with members of the Dean's Council, the SET Dean's Advisory Council, and university leadership. This review helped ensure that our plans were aligned across all levels of the organization and that leadership was fully on board. We presented our plan to all stakeholders and voted on its adoption.

Through this comprehensive and iterative process, we developed a strategic plan that is both visionary and actionable, grounded in broad-based input and designed to propel our organization forward in the years to come.

SET Strengths
- Graduate success – industry, graduate schools, professional schools
- High rate of placement into medical, dental, and other health professions
- Established, outstanding reputation for pre-health programs
- Rankings, especially related to career readiness upon graduation
- Industry-sponsored projects and applied research
- Faculty-student research collaborations resulting in publications, presentations, and grant productivity
- Specialty accreditation of multiple programs
- Community outreach initiatives
- Ability to implement cross-disciplinary initiatives linking technology and health
- Outstanding grant funding
- Diverse, supportive, and inclusive community

SET Distinctive Characteristics
- Small class sizes and personalized attention
- Rigorous programs that combine scientific education with the liberal arts in response to the needs of our constituencies
- Dedicated and experienced faculty with a passion for helping students succeed
- All classes taught by full-time faculty or select adjunct professors from industry
- Hands-on, experiential learning in well-equipped laboratories
- Abundant internship and undergraduate research opportunities

SET Current Program Portfolio

- Applied Physics - BS
- Biochemistry – BS, Minor
- Bioinformatics – BS, Minor
- Biology - BS, BA, Minor, Teacher Cert
- Chemistry - BS, BA, Minor, Teacher Cert
- Computer Engineering - BS
- Computer Information Systems - BA
- Computer Science – BS, Minor, Teacher Cert
- Computer Science and Application Systems – BA, Teacher Cert
- Electrical Engineering - BS
- Engineering Management - BS
- Engineering Science – BS with 5 concentrations
- Environmental Science – BS, BA, Minor, Teacher Cert
- Forensic Science - BS
- Industrial Engineering – BS
- Mathematics – BS, BA, Minor, Teacher Cert
- Mechanical Engineering - BS
- Nursing - BSN
- Physics – BS, BA, minor
- Software Engineering - BS
- Graduate Certificate in Cybersecurity
- Graduate Certificate in Educational Computer Gaming
- Master of Science in Computer Information Systems
- Master of Science in Computer Science
- Master of Science in Cybersecurity
- Master of Science in Electrical and Computer Engineering
- Master of Science in Industrial Engineering and Management
- Online Graduate Certificate in Software Engineering
- Online Master of Science in Software Engineering

SET Challenges

- Low enrollment in many programs
- Lack of student readiness for STEM degree programs
- Missing opportunities in a growing healthcare sector and in health-adjacent programming
- Limited resources for faculty professional development
- Outdated facilities and lack of office/research space
- Deferred maintenance
- Tech infrastructure, especially network reliability
- Access to data (dashboards, alumni, etc.)
- Regional competition for talent - faculty, students, and staff

Table 1. Summary of Strategic Focus Areas and Goals 2024

Strategic Focus Areas

SF1 Academic Programs and Learner Experience	SF2 Facilities and Technology Infrastructure	SF3 Enrollment, Revenue and Resources	SF4 Communities and the Common Good	SF5 Structures, Systems, Policy, and Process
Distinctive, Market-Responsive and Future-Aware Academic Programs	Physical Space to Support Operations	Healthy Enrollment	Alumni Engagement	Effective Communication
High-quality Teaching and Learning	Energy Efficiency and Sustainability	Extramural Funding	Pre-college Outreach and Co-curriculum	Supportive SET Organizational Structures
Prestigious Undergraduate-focused Research Programs	Comfortable, Attractive Buildings	Fundraising	Vibrant, Catholic and Marianist School Culture	Quality Service
Valuable Business, Industry, Academic and Government Collaborations and Internships	Optimal Space Utilization and Flexibility	Marketing	Lifelong Learning Institute	
Accessible Study-Abroad, Study-in USA and International STEM Programs	Digital Connectivity and Advanced Technology Solutions		Sustainable Innovation for Global Impact	

Strategic Focus Area 1: Academic Programs and Learner Experience

Distinctive, Market-Responsive and Future-Aware Academic Programs
Distinctive, market-responsive, and future-aware academic programs are essential for preparing students to thrive in a dynamic and competitive global landscape. These programs ensure that graduates are equipped with the knowledge, skills, and mindset needed to address the challenges and seize the opportunities of the future. They also fulfill our mission of educating ethical leaders, innovators, and change-makers of tomorrow.

High Quality Teaching and Learning
By prioritizing high-quality teaching, we honor the Marianist tradition of educating for adaptation and change, equipping students with the skills and knowledge necessary to navigate and contribute positively to a rapidly evolving world. This goal involves continuous professional development for faculty, innovative pedagogical strategies, and a supportive learning environment that challenges and inspires students. High-quality learning experiences also promote social responsibility, encouraging students to apply their education in service of the common good.

Prestigious Undergraduate Research Programs
Undergraduate and graduate student research opportunities allow students to apply their classroom knowledge to real-world problems, encouraging a deeper understanding and appreciation of their disciplines. This goal is further enriched by a focus on research that addresses societal challenges, promotes social justice, and serves the common good. Students are encouraged to explore ethical implications and consider the broader impact of their work, reflecting the Marianist values of community and service. Research provides students with invaluable skills and experiences that are needed in graduate studies and professional careers, thus contributing to their personal and professional growth.

Valuable Business, Industry, Academic and Government Collaborations and Internships
Building collaborations and internships with business, industry, academic, and government partners significantly enhances the educational experience and improves student outcomes. Internships provide students with practical, real-world experience that complements their academic learning, making them more competitive in the job market. By engaging with professionals and organizations across various sectors, students gain insights into current industry practices, emerging trends, and innovative solutions to complex problems. Businesses and industries benefit from fresh perspectives and innovative ideas generated by students, while St. Mary's can leverage these partnerships to stay updated with industry advancements and align programs with market needs.

Accessible Study-Abroad, Study-In USA and International STEM Programs

Prioritizing accessible study-abroad, study-in USA, and international STEM programs is a strategic goal that aligns with the Marianist values of diversity, community, and global engagement. A global perspective is essential for preparing students to thrive in an interconnected and culturally diverse world. These programs offer students the opportunity to immerse themselves in diverse cultures, languages, and academic environments, expanding their horizons and broadening their understanding of global issues. By making study-abroad, study-in USA, and international STEM programs accessible, we ensure that all students, regardless of background or financial means, can participate in transformative international experiences. International experiences enhance students' academic and personal growth, independence, adaptability, and cross-cultural communication skills. In STEM and health fields, exposure to international perspectives and research collaborations stimulates innovation and prepares students to tackle global challenges collaboratively.

Strategic Focus Area 2: Facilities and Technology Infrastructure

Physical Space to Support Operations

Adequate and well-designed facilities are essential for creating spaces that inspire creativity, innovation, and academic excellence. By prioritizing the enhancement and expansion of physical infrastructure, we ensure that our campus remains conducive to learning, research, and community engagement. Physical spaces are more than just buildings; they are hubs of activity where students, faculty, staff, and community members come together to learn, grow, and connect. From state-of-the-art classrooms and laboratories to green spaces, our physical environment reflects our commitment to providing a supportive and enriching educational experience.

Energy Efficiency and Sustainability

Promoting energy efficiency and sustainability is not just an environmental imperative but also an ethical one. By implementing energy-efficient technologies in our labs and classrooms, sourcing materials responsibly, reducing waste production in our laboratory operations, and utilizing alternative, environmentally friendly materials whenever available, we demonstrate our commitment to responsible stewardship of God's creation. Investing in energy efficiency and sustainability initiatives yields long-term benefits for our School, including cost savings, improved laboratory hygiene and well-being, and enhanced reputation as a leader in sustainability education and practice. This goal reflects our commitment to creating a more just, equitable, and sustainable world for all.

Comfortable, Attractive Buildings

The physical environment plays a crucial role in creating a sense of belonging, pride, well-being and academic excellence among students, faculty, staff, and visitors. Comfortable and inviting buildings create spaces where all feel welcomed, valued, and inspired to learn, collaborate, and innovate. By prioritizing aesthetics, functionality, and sustainability in our common spaces, labs, and classrooms, we enhance the overall student experience and attract prospective students to our distinctive academic programs.

Optimal Space Utilization and Flexibility

By optimizing space utilization, we ensure that every square foot contributes to the university's mission and strategic priorities. This involves assessing current space usage, identifying areas for improvement, and implementing strategies to repurpose or reallocate space as needed. Flexible design principles allow spaces to adapt to changing needs and accommodate diverse activities. Optimal space utilization enhances operational efficiency, reduces costs, and minimizes environmental impact, aligning with our commitment to sustainability and social responsibility.

Digital Connectivity and Advanced Technology Solutions

Investing in digital connectivity and advanced technology solutions enhances access to educational resources, facilitates communication and collaboration, and promotes innovation in teaching and research. Digital connectivity and advanced technology solutions enable us to expand our reach and impact online, reaching learners beyond the traditional classroom and engaging with diverse communities locally and globally. Technology empowers us to fulfill our mission of educating for adaptation and change in a rapidly evolving world.

Strategic Focus Area 3: Enrollment, Revenue and Resources

Healthy Enrollment

At the heart of the Marianist mission is a commitment to educating the whole person and nurturing a diverse and inclusive community. A healthy undergraduate and graduate enrollment that aligns with resources and priorities ensures that we can fulfill this mission by attracting and retaining a vibrant and dynamic student body that reflects the rich diversity of backgrounds, experiences, and perspectives. A healthy enrollment ensures financial stability and enriches the university's academic and social environment. A diverse student body enhances the learning experience for all, promoting dialogue, understanding, and empathy across differences. Furthermore, healthy enrollment enables us to expand our impact and reach, serving a broader population of students and addressing the needs of our local and global communities.

Extramural Funding

Extramural funding, which includes grants, contracts, and external research support, is essential for advancing the university's research capabilities, providing students with skills in demand by employers, awarding stipends to students to pursue summer research, offering scholarships leading to enhanced engagement and retention, enhancing educational programs, and supporting community outreach initiatives. Extramural funding enables us to pursue research that addresses pressing societal issues, aligns with Marianist values, and contributes to the student experience and the common good. By prioritizing extramural funding, we enhance our financial stability and resilience, ensuring that the university can continue to provide a high-quality education while adapting to changing economic conditions. This goal demonstrates our dedication to a culture of excellence, innovation, and service. Securing extramural funding strengthens our ability to fulfill our mission of providing a transformative education that prepares students to lead purposeful lives and make meaningful contributions to society.

Fundraising

Effective fundraising allows us to provide scholarships and financial aid, making a Marianist education accessible to students from diverse backgrounds and ensuring that financial barriers do not hinder anyone from pursuing their educational goals. Fundraising supports the development and enhancement of academic programs, faculty development, and research initiatives. Strong fundraising initiatives help build a robust network of alumni and donors who are invested in the university's mission and future.

Marketing

In today's highly competitive higher education landscape, it is imperative to effectively market academic programs to prospective students using modern, data-driven approaches. Leveraging the latest artificial intelligence and machine learning technologies, deep insights into student preferences, interests, and decision-making behaviors can be gained. Adopting cutting-edge marketing techniques is no longer a nice-to-have, but a strategic imperative.

Strategic Focus Area 4: Communities and the Common Good

Alumni Engagement

Alumni engagement is a strategic goal, especially significant because the values of community, service, and lifelong learning are central to our mission. Engaging our alumni builds a strong, supportive network that benefits both current students and graduates, creating a connected university community. Alumni engagement ensures that graduates remain involved in the life of the university, contributing their time, talent, and resources to support its mission and goals.

Engaged alumni can provide mentorship, internships, and job opportunities for current students, enhancing their educational experience and career prospects. Alumni support is invaluable in preparing students to lead purposeful lives and make meaningful contributions to society.

Pre-College Outreach and Co-Curriculum
Pre-college outreach and co-curriculum initiatives, such as registered student organizations, seminars, summer programs, camps, campus tours, mentoring, and academic workshops, help enhance the college experience for students from various backgrounds, especially those who might not have considered higher education as a viable option. These programs provide essential guidance and support, helping students navigate the college admissions process and understand the opportunities available to them. By reaching out to underrepresented and underserved populations, we contribute to closing the achievement gap. Additionally, consistent pre-college programming can create a reliable pipeline of high-quality applicants year after year, potentially leading to STEM-matched enrollments and improved retention rates. This proactive approach ensures that our student body reflects the diversity and richness of our broader community. Engaging with students also helps cultivate a sense of belonging and connection to the university. This engagement can lead to higher enrollment rates, better preparedness for college-level work, and increased retention and graduation rates.

Vibrant, Catholic and Marianist School Culture
This goal lies at the heart of our university's mission and underscores our commitment to an educational environment rooted in the values of faith, community, service, and holistic development. A vibrant Catholic and Marianist School culture creates a powerful sense of community, where authentic relationships are built on mutual respect. It also emphasizes the importance of service to others. Integrating our Catholic and Marianist traditions into all aspects of university life enriches the educational experience, providing students with a moral and ethical framework that guides their personal and professional lives. A vibrant Catholic and Marianist culture attracts students, faculty, and staff who are seeking a values-based education and a supportive, faith-filled community.

Lifelong Learning Institute
Commitment to lifelong learning reflects the belief that education does not end with graduation but is a continuous journey that enriches individuals and communities. A Lifelong Learning Institute offers programs and courses designed for adult learners, alumni, and community members, addressing their diverse interests and professional development needs.

Lifelong learning initiatives promote intergenerational engagement, creating a learning environment where experiences and perspectives are shared across age groups. This approach not only enhances the educational experience but also strengthens community bonds, reflecting the Marianist commitment to building inclusive and supportive communities.

Sustainable Innovation for Global Impact

We embrace a culture of environmental stewardship, sustainability, and innovation, aligned with the principles of *Laudato si*. We leverage our diverse programs in engineering, computer science, physics, and environmental science to drive sustainable solutions and promote energy efficiency. Our faculty and students collaborate on research in renewable energy, green technologies, and environmental data analytics, utilizing our laboratories and the resources of the Unmanned Aerial Systems Laboratory. We integrate sustainability principles across our curriculum, from our Environmental Science program to our Engineering Management courses, preparing a new generation of eco-conscious professionals. Our community outreach initiatives, including partnerships with local industries and organizations extend our positive impact beyond our campus borders.

Strategic Focus Area 5: Structures, Systems, Policy, and Process

Effective Communication

In a Marianist context, effective communication nurtures a sense of belonging and unity, essential for building and maintaining a strong, cohesive community. Transparent and open communication channels allow for the sharing of valuable information, feedback, and ideas, which supports decision-making processes, enhances trust, and strengthens relationships. Effective communication promotes collaboration and innovation by ensuring that knowledge and resources are accessible to everyone. It enables us to effectively share our mission, values, and successes with both internal and external audiences, reinforcing our identity and reputation as a Marianist institution. By prioritizing effective communication, we also enhance our ability to respond to challenges and opportunities in a timely and coordinated manner. Clear and consistent messaging helps manage change, align efforts across different departments and initiatives, and ensure that everyone is working towards common goals.

Supportive SET Organizational Structures

Supportive organizational structures ensure that our academic and administrative systems are designed to meet the needs of students, faculty, and staff effectively. Systems should support people, not the other way around. Supportive structures promote clear communication,

streamline processes, and facilitate the efficient allocation of resources, allowing the university to operate smoothly and responsively. Well-designed structures provide clear roles, responsibilities, and pathways for professional development, promoting a positive and productive work environment. This support, in turn, directly benefits students by ensuring they receive the guidance, resources, and opportunities they need to succeed academically and personally. Supportive organizational structures are key to building a strong sense of community and collaboration within the university.

Quality Service

By emphasizing quality service, we enhance the overall experience of our students, ensuring they have access to the guidance and assistance necessary to achieve their academic and personal goals. This support is vital for student retention, satisfaction, and success, creating a positive and enriching educational journey. Quality service extends to faculty and staff, providing them with the resources and environment they need to perform their roles effectively.