A&SPIRE IN DEEDS

Baylor University

College of Arts & Sciences

Five-year Strategic Plan

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January 2025

THE PLAN

The College of Arts & Sciences will continue to be an academic leader of Baylor University because of its core curriculum, the breadth and depth of its majors and programs, and its contributions towards becoming an R1 Christian research university. This foundation will help propel Arts & Sciences to new levels of achievement in the context of *Pro Ecclesia*, *Pro Texana*, and now *Pro Mundo*.

Our previous strategic plan, *A&Spire to Illuminate,* helped to increase retention and graduation rates, invest in endowed chairs and professorships, create new majors and minors, increase Ph.D. production and granting success, and secure over $160 million through the Give Light fundraising campaign.

However, there is more to accomplish. Higher education is an ever-changing landscape that affects every aspect of human life, including solving the grand challenges of the day, addressing the permeation of AI-based technologies into the classroom and research enterprise, responding to pedagogical shifts that emphasize both the traditional classroom and engaged learning opportunities and responding to changing global cultures and identities. The world is shrinking at a rapid pace requiring a more outward-looking view that requires multifaceted experiences and viewpoints to navigate a new world.

During the next five years, the College of Arts & Sciences's imperative is to advance the standing of Baylor University in new and innovative areas across the sciences and the humanities. The framework of the new A&S plan is modeled after the university *Baylor in Deeds* and is thus called ***A&Spire in Deeds***. Our strategic plan includes six foundational pillars (Transformational Education, Research Excellence, Global Engagement, Faculty Development, Faithful Stewardship, and Christian Commitment) and three research projects (Human, Health and Technology). Together, they provide a path forward for the College of Arts & Sciences during the next five years.

With almost one half of Baylor's undergraduate population and many of its research doctoral programs, the College of Arts & Sciences is composed of 25 departments and two programs representing the humanities, social sciences, and sciences, as well as numerous other programs, institutes, and centers. We support the mission of Baylor University to "educate men and women for worldwide leadership and service by integrating academic excellence and Christian commitment within a caring community."

THE PLANNING PROCESS

The new five-year Arts & Sciences strategic plan was created utilizing input from department chairs, faculty, and staff during the course of the 2023/2024 academic year. Important steps in the process included the following:

- Academic departments and other support programs contributed their ideas during the listening sessions with the University Strategic Planning Group.
- Concomitantly, a university-wide call for "white papers" was announced, which asked faculty and staff for new ideas to help chart the strategic pathway for Baylor in the coming five years.
- Four subcommittees of faculty, staff, and associate deans from A&S were appointed in the summer of 2024 to make recommendations on important topics, with access to the appropriate white papers.
- Thirty-five members of the College of Arts & Sciences Board of Advocates were surveyed on their ideas for the future of Baylor University.
- Also during the summer, the subcommittee recommendations and information gleaned from the Board of Advocates by the associate deans and staff were compiled into a single document.
- The plan was then submitted to the A&S Council of Chairs for review and comment before finalizing the document, which was submitted on December 1, 2024, to the Office of the Provost.
- Beginning in the spring of 2025, departments and programs within Arts & Sciences will be asked to respond to how they will contribute to the implementation of the A&S strategic plan.

FOUNDATIONAL PILLARS

The six pillars presented here are foundational to the College of Arts & Sciences and Baylor University. The pillars articulate how we educate students, conduct research, support the global experience, view diversity as a strength, and stand on Christian commitments at the core of all that we do. The pillars are what makes us unique in the world of higher education and cannot be negotiated. Yet, these pillars are not static; they must be strategically strengthened and refined to fulfill the aspirations of *Baylor in Deeds*. Each department and program in A&S can and must contribute to this critical task in its own way during the next five years.

Pillar 1: Transformational Education

As Baylor University's largest academic unit, the College of Arts & Sciences maintains an enduring commitment to educational experiences that transform both our students and our world. We commit deeply to the instruction, mentorship, and formation of our students so they may discover meaning, cultivate character, and devote themselves to lives of purpose. In equal measure, we pledge our efforts to education that transforms the world around us by: coalescing knowledge toward healing and redemption; promoting the common good; offering goodness, truth, wisdom, and beauty to spaces too often starved of them; and attentiveness to care for God's creation. As its commitment to the mission of Baylor University, the College of Arts & Sciences will:

Goal 1: Continue to implement the five-year Strategic Enrollment Management plan for the purpose of improving recruitment, retention and graduation rates.

Goal 2: Create curricular tracks that supplement existing coursework with practical experiences to enhance value, improve affordability, and equip students for the competitive marketplaces of employment and graduate study. To bridge the classroom to the world beyond will require new infrastructure to support work-immersion learning experiences such as co-ops and internships, as well as other forms of engaged and experiential learning that prepare students for global citizenship, cross-cultural exchange, research immersion, civic leadership, and professional development.

Goal 3: Create more interdisciplinary majors and minors and graduate concentrations in emerging areas such as Ethics and the History of Medicine, and promote the implementation of recently approved minors such as Ethnic Studies.

Goal 4: Expand lifelong learning opportunities and engagement for alumni and community partners. Programming may include enhanced mentorship and professional development partnerships between students and alumni, course enrollment opportunities for non-degree-seeking alumni and community partners, and new degree programs and certifications.

Goal 5: Foregrounding Human-centered Learning and Communication by developing and enhancing curricular opportunities in written communication, oral discourse, artistic expression,

and cross-cultural engagement that empower students and faculty to deeply consider human nature and promote the common good.

Pillar 2: Research Excellence

The designation of Baylor as a Carnegie R1 Research University in 2021 was the realization of a decades-long vision, achieved by a concerted effort to promote impactful research. With R1 status, Baylor engages in worldwide scientific and humanistic discussions to which we bring a unique Christian perspective. Maintaining R1 status requires continued growth according to three principal criteria: research expenditures; number of doctoral graduates; and research support and infrastructure. We intend to increase future research through continued hiring of research faculty, ongoing growth of graduate programs, continued implementation of the business transformation model, and expansion of intradisciplinary collaborations among schools.

We envision that with the help of the College of Arts & Sciences, Baylor will be a leader in dynamic, cutting-edge research that addresses questions about what it means to be human in the modern age. Through an ambitious, interdisciplinary, forward-looking vision that emphasizes multiple research areas, the College of Arts & Sciences will lead in scholarly and creative research that confronts some of the most daunting challenges of our time. As part of its commitment to the research excellence of Baylor University, the College of Arts & Sciences will:

Goal 1: Increase external funding from science and humanities researchers by 50% by: hiring research active faculty; expanding selected graduate programs; identifying research areas of high impact that promote the Baylor mission; and maintaining and improving infrastructure supporting research.

Goal 2: Develop interdisciplinary graduate programs that bridge across academic units by: expanding and supporting a materials science graduate program with the School of Engineering and Computer Science; developing a data sciences graduate program with the School of Engineering and Computer Science and the Hankamer School of Business; strengthening relations in cancer research with Robbins College of Health and Human Sciences; reviewing other possible graduate programs; and increasing doctoral production across select disciplines. The humanities and social sciences will build on their current granting and foundational successes to continue to contribute to the R1 enterprise through both doctoral student graduation rates and research.

Pillar 3: Global Engagement

During the past decade, Baylor University has made strides toward becoming a global-facing university, with growth in key areas such as study abroad, international student and faculty recruitment, mission programs, collaborative online international learning (COIL), and global research collaborations. The Center for Global Engagement has led University internationalization efforts, especially those seeking to prepare our students to lead and serve in the diverse and multicultural world of the 21st century.

We seek a robust understanding of our present global context within the entire range of College of Arts & Sciences disciplines. We envision collaborating with Christian colleagues and institutions around the world, working alongside people of good will in pursuit of the flourishing of all creation through our teaching, mentoring, programming, performance, and research. As its commitment to global engagement on behalf of Baylor University, the College of Arts & Sciences will:

Goal 1: *Build upon our tradition of excellence in undergraduate and graduate education* by cultivating a globally engaged student body through teaching, research, and programming that contributes to the internationalization of the College of Arts & Sciences.

Goal 2: *Partner with the Center for Global Engagement and the Office of Engaged Learning* to increase student participation in intercultural education, such as study abroad, competitive major scholarships like the Fulbright, and global undergraduate research.

Goal 3: *Build global connections* through faculty exchange programs and speaker series with important global partners and through global research networks in fields especially prioritized within *Baylor in Deeds*.

Pillar 4: Faculty Development

We recognize that faculty are the cornerstone of the scholarly and curricular work we do in the College of Arts & Sciences. Thus, a strong, vibrant, and distinctive faculty who reflect all of God's people will continue to make our scholarship, and mentoring dynamic in the College of Arts & Sciences. The students we come to serve from a cross-section of our local, regional, and national communities, as well as international students who remind us how interconnected we are in this global world.

Our Christian mission requires us to foster a Christian community environment where faculty can thrive and where research and teaching are supported and promoted. We pledge to help foster environments where students' academic success and socio-professional interactions with faculty, staff, and fellow students are aligned with the University's core commitment to educate students in a Christian environment where respect for all God's people is practiced.

As part of its commitment to be a place where our vibrant and distinctive faculty and students at Baylor University can thrive, the College of Arts & Sciences will:

Goal 1: *Help faculty remain on the cutting edge of research in their disciplines* with additional infrastructure support. The sciences will require adequate research equipment and space, as well as technological and staff support, while the humanities will require more technological support and access to new kind of information to address important problems of the day.

Goal 2: *Help faculty access new materials for teaching* as we create more programs, certificates, majors, and minors as disciplinary content broadens.

Goal 3: *Create opportunities for professional development of faculty* for attending conferences, seminars and symposiums, but also by sharing their knowledge on campus and throughout the greater Waco community.

Pillar 5: Faithful Stewardship

As a faithful steward of its resources, the College of Arts & Sciences will develop a financial model to fund and sustain its strategic plan in the coming five years. The goal is to sustain current operations while building for the future as a highly ranked Christian research university by judiciously securing the resources needed to fund the new College of Arts & Sciences five-year strategic plan. The allocation of discretionary funds generated from graduate professional programs, annual giving, and the granting enterprise will be prioritized towards initiatives that will fulfill our most pressing strategic needs. The development of a comprehensive philanthropic plan is necessary to target strategic initiatives suitable for fundraising activities. It is only then that accessing University resources is requested for significant interdisciplinary projects, or when facilities are in need of upgrades.

The College of Arts & Sciences budget pro forma will project revenues and expenditures across five years by the A&S financial team with these goals in mind:

Goal 1: Estimate resource needs for each of the key strategic areas sanctioned in the new plan.

Goal 2: Identify allocations to the budget pro forma from existing discretionary accounts, while securing reserves for future contingencies.

Goal 3: The A&S development team recommends which resource needs to target through philanthropy, including input from the A&S Board of Advocates.

Goal 4: Recommend which part of the budget pro forma should be submitted to the Office of the Provost for financial support.

Pillar 6: Christian Commitment

The College of Arts & Sciences is deeply committed to the Christian tradition. This breadth and depth reflects tremendous diversity, an abiding commitment to introspection and exploration, and a shared embracing of humility and empathy as we seek to learn, support, and draw our students into the work God is doing in the world today. In doing so, we seek to model not merely civil discourse, but also love, hospitality, and friendship with people and communities that may have different experiences, traditions, and cultures than our own. Arts & Sciences embodies this treasured environment in its cultivation of a community of Christian scholars, in its commitment to the transformation of students, faculty, and staff, in its focus on scholarship in all fields, including religion, and in its historic rootedness in Baptist principles and praxis.

The College of Arts & Sciences contributes uniquely to Baylor's Christian identity in several important ways: we provide virtually all Baylor undergraduates with a foundational orientation to Christianity through the Christian Scriptures and Christian Heritage common core courses; we have many departments in the humanities and social sciences with graduate programs that focus specifically on religion, several of which rank among the best in the country; we have faculty that edit academic journals devoted to religion and the intersection of Christianity and society;

we have an active ministry guidance program in the Department of Religion that provides students with a range of ministry internships; and we have a robustly ecumenical group of religion scholars with diverse research emphases, including those that attend to the historical and continued relevance of Baylor's Baptist heritage and those oriented toward aspects of other traditions within Christianity.

In its commitment to be the Baylor University that the world needs, the College of Arts & Sciences will:

Goal 1: Encourage global leadership in the academic study of Baptist life and thought by ensuring that students have diverse opportunities to learn about and critically engage the Baptist tradition as a living and global faith, and by encouraging research that enlivens Baylor's Baptist heritage in its local, regional, and global context.

Goal 2: *Provide students with a rich understanding of the ecumenical Christian tradition's identity, global presence, and lived conviction to ground their future "worldwide leadership and service"* in all disciplines through the core curriculum and a range of curricular and co-curricular programming.

Goal 3: Provide resources for students and faculty to cultivate intercultural and interreligious understanding and skill development so that they are prepared to work alongside people of other faiths constructively as they seek to address society's greatest challenges.

STRATEGIC PROJECTS

The College of Arts & Sciences's six pillars support our commitment to delivering a rigorous and enriching transformational education for Baylor undergraduate and graduate students that also considers the importance of stewarding our resources for maximum impact. The pillars support ongoing and new research and teaching efforts that have and will continue to positively impact communities near and far.

During the next five years, the College of Arts & Sciences will look toward new horizons encouraging faculty, students, and staff to ask a different set of questions and seek outcomes that address some of most pressing issues of our day. To do this, we turn to strategic commitments that advance existing strengths, incorporates themes from the 'white papers,' and integrates recommendations from four subcommittees. Through this process, three areas of emphasis during the coming five years have been identified that span the disciplinary breadth of the College of Arts & Sciences: *The Human Project*, *The Health Project*, and *The Technology Project*. While independent in some aspects, the three projects also intersect in ways necessary to help solve important problems of the day. The Human Project draws from Baylor's exceptional scholarship in the arts and humanities with its unique and historic commitment to the Christian tradition. The Health Project is built upon a strong foundation of research and teaching, while The Technology Project builds on existing strengths in data and materials sciences.

To enhance the effectiveness, interdisciplinarity, and strengths of the of the science, humanities, and social science academic departments and programs within the College of Arts & Sciences, potential departmental or programmatic restructuring will be considered to better reflect emerging synergies.

THE HUMAN PROJECT

The scope of scholarship and teaching that takes place in the College of Arts & Sciences is multifaceted. In substantive ways, our humanities faculty ask thoughtful and difficult questions that have confronted humankind since the beginning of time. Faculty researching and teaching in the performing and creative arts programs bring to life on the stage, through photographs, visual and digital mediums, and in classrooms with students, the myriad ways the arts and artists attempt to answer the daily challenges that impact the world and the most marginalized among us. Faculty researching and teaching at the intersection of the humanities and health encourage critical inquiry into the healing practices for the whole person. Faculty researching and teaching in the political and social sciences help to illuminate how the choices we make as a society impact people and communities, how to address ethical quandaries that require critical analysis about the past, present, and the future, and how to use language and culture to bring people together and remind us of the interconnectedness of our global world. Faculty researching and teaching in communication, philosophy, writing, and the literary arts help us to see a world *that is* and what *it can be* if we take seriously that words spoken and written shape our world and have enormous power to create a better world for everyone. To say it plainly, our humanities,

performing and creative arts, and social science faculty in words and in deeds reminds us that we are human.

We recognize in the College of Arts & Sciences that we are in a pivotal moment in this global world. The real and yet imagined possibilities of AI and Generative AI requires the humanities faculty to ask even more pointed questions and to seek long-term and ongoing solutions that will help maintain our connection to each other and the natural world.

The Human Project strategic initiative envisions a new and yet undetermined future for the humanities at Baylor; it seeks to cast an ambitious, interdisciplinary, forward-looking approach to being human that refuses to let the most daunting challenges of our time define human existence and identity. Drawing upon Baylor's historic rootedness in the Christian tradition and the depth and breadth of the liberal arts tradition, The Human Project reimagines the perennial paradox of human existence in our contemporary context: to be human is both a gift and a task.

Through the ambitious vision of The Human Project, the College of Arts & Sciences is committed to renewing the humanities at Baylor through a five-year consultative process accessible to all humanities faculty. This process will be guided by four strategic questions — synthesized from the white papers submitted by A&S faculty — that will shape long-term research funding and curricular priorities, including those tied to the coming review of the College of Arts & Sciences Core Curriculum.

1. What does it mean for humans to be creatures, to have bodies, to be embodied, to be vulnerable and dependent on the physical world in which we live, especially in an era of upheaval in our climate and natural environment? To answer these questions, we recommend the following:
    a. Expand research focusing on bioethics, disability studies, and food and ecology.
    b. Cultivate initiatives that integrate the arts, humanities, and medical humanities into broader health and environmental initiatives relating to being human.
2. What does it mean for humans to think, to pursue truth, to create, to worship, to imagine, and to communicate as and with humans, especially in an era of supercomputers, machine learning, and artificial intelligence?
    a. Create an A1/Data Ethics Collaborative.
    b. Communicate how technology and science are necessarily contextualized within broader understandings of human existence.
    c. Build upon creative work in the arts, including the Christianity and the Arts Initiative.
3. What does it mean to love one's neighbor, to build vibrant, resilient, and civil communities that affirm diversity, and to become educated and engaged citizens, especially in an era of social fragmentation and polarization?

a. Engage in digital and public humanities initiatives that provide a bridge between the scholarly community and the public.
b. Build repositories and programs that recognize Baptist history as both expansive and inclusive.
c. Strengthen the presence of our humanities and social sciences in the Baylor in Washington programs.
d. Cultivate partnerships with national universities and institutions that extend our commitment to the diversity of our campus, community, and nation.

4. What are the effects of increasing nationalism, war, and international inequity on our pursuit of the common good? What does it mean to be globally interdependent, to seek God's mandate of peace and justice in the pursuit of our common good?

    a. Advance and broaden our research focus on global Christianity and its interreligious context.
    b. Cultivate research, teaching, and networks that emphasize ethical global citizenship and leadership.

Through exploration of these questions and others, The Human Project will expand and invite new and exciting approaches to the exploration of humanity and the human good. In addition to building on and promoting disciplinary expertise in the humanities, social sciences, and fine arts, The Human Project will foster a richly collaborative and interdisciplinary network of scholarship and creativity connecting the humanities with the College's two other strategic commitments, The Health Project and The Technology Project. The Human Project will play a vital role in recognizing the signal importance of the humanities, social sciences, and fine arts to Baylor's commitment, as envisioned in *Baylor in Deeds*, to promote groundbreaking and innovative research and teaching as a global, R1 Christian university.

THE HEALTH PROJECT

The Health Project reaffirms our longstanding commitment to health-related research and education, while envisioning new opportunities and challenges of the coming decade. The College of Arts & Sciences considers excellence in health and related disciplines to be a hallmark of its identity. As such, we are committed to focusing some of our research efforts to find solutions to tackle a variety of pressing health challenges, including the health disparities impacting underrepresented minorities, low-income populations, and rural communities. To that end, The Health Project encompasses research in two major areas: Environmental Determinants of Health and Behavioral and Mental Health. Both areas will play a central role in prehealth and global education and training as outlined in the foundational pillars of Transformational Education and Global Engagement. The Health Project also intersects with our other strategic initiatives, The Human Project (through such things as the Baylor Ethics Center, Medical Humanities and the Arts), and The Technology Project through a focus on material science/biomedical engineering and computational research in health-related fields.

Environmental Determinants of Health

This interdisciplinary College of Arts & Science effort reflects the core concept that humans are deeply connected with their environment, and that health is tied to the health and sustainability of our surrounding ecosystems. The Environmental Determinants of Health Project calls for collaboration of researchers, physicians, public health professionals, and ecologists to understand the complex environmental causes of diseases, spanning different research areas that include toxicology, microbiomics, water quality and security, tropical and emerging diseases, and global health.

The Toxicology, Diseases, and Infections Initiative addresses the effects of environmental and genetic factors on human health. Our goal is to understand how individual factors such as exposure to contaminants, genetic predisposition, life stage, and residence affect human health. This effort will emphasize the use of 'omics tools (e.g. genomics) and will be led by experts in molecular biology and environmental chemistry. One example is to form an interdisciplinary team focused on developing function-driven experimental and data approaches to yield a high-resolution understanding of the mechanisms that underpin observed phenotypes in complex biological systems, and to develop predictive AI/ML computational modeling approaches for scaling understanding from the molecular to the whole-human scale.

The Baylor Interdisciplinary Cancer Initiative seeks to understand the molecular, cellular, and organismal causes of diseases aligning with Baylor's long emphasis on basic and applied cancer research. This group now includes 15 research groups across four departments from the College of Arts & Sciences and two departments from Robbins College of Health and Human Sciences. We intend to continue and expand this collaborative effort by hiring additional faculty who incorporate new data science methods to provide predictive functional models for the cause and treatment of cancer illnesses. We will draw on existing strengths in drug discovery in non-traditional research areas such as nutrition, diet, and the microbiome. By focusing on these intersections, Baylor can contribute to cancer research in unique ways, potentially leading to novel discoveries. We will continue building the research infrastructure to attract collaborative grants across disciplines; longer-range goals might include centers such as a Data Science Hub, a new Artificial Intelligence/Machine Learning Core, a Natural Product Drug Repository Center, and an expanded Vivarium for Genetic Engineering.

The Baylor Water Security Initiative calls us to be stewards of natural resources and address the problem of water security at local, state, and even global levels. This initiative will address two initial questions. First, how will population growth in central Texas stress existing water resources given Texas' climate gradient and projected future climate variation? Second, which communities will be disproportionately impacted by water access stressors, and what public policies can offset impacts through technological, conservation, or water use efficiency programs?

In addition to existing infrastructure and faculty expertise, Baylor researchers benefit from geographic advantages for studying water issues and their connection to environmental health.

We propose to develop a water observation and adaptation (O/A) network across critical climate and population growth gradients. The network will include a data synthesis center studying local and global water security patterns to develop creative solutions to human and ecological water demands. As the project grows outward, research products will have an increased influence on business and public policy decisions that will feed back into continued growth of the broader initiative. Over the long term, we envision building capacity in research areas involving the water cycle (geo-environmental solutions), engineering (technological solutions), human behavioral and health sciences (conservation and healthcare solutions), and economics (legal and monetary solutions) to complement existing strengths in water quality sciences.

Behavioral and Mental Health for Student Well-being

Health and well-being encompass behavioral, mental, and psychological factors as well as physiological ones. This initiative will investigate the feasibility of collaborative work across existing units in the College of Arts & Sciences both to improve mental health outcomes for current students and to form the basis for larger research-based initiatives should these initial projects prove successful.

The Baylor Clinical Research Initiative will address anxiety and related mental health concerns (e.g., depression), which are among the more significant challenges facing college students. These conditions are especially prevalent among college students from historically underrepresented backgrounds. We propose The Baylor Clinical Research Initiative to partner with our medical humanities program, the Office of Prehealth Studies, and existing Baylor mental health units such as the Baylor University Counseling Center (BUCC) or the Baylor Psychology Clinic to respond effectively to students experiencing heightened anxiety and related mental health concerns.

The care model might include education, screening, increasing the number of campus service providers via use of novel providers (e.g., trained lay providers), and access to new or refined interventions. Initial efforts will involve working closely with Student Life, the BUCC, and other units to develop training and educational materials that can be used to inform student mental health care, particularly during the first-year experience.

Similarly, mental health is profoundly affected by poor sleep habits, something that impacts more than half of Baylor students. Sleep loss affects the brain and immune system, leading to poorer health, diminished well-being, and lower academic performance. Sleep problems in students often arise from behavioral habits and suboptimal residence hall sleeping conditions; these issues can be addressed on a large scale with cost-effective strategies.

Baylor is uniquely positioned to address these challenges. Our campus contains key resources including scientific experts, dedicated teams of clinicians, leaders in Student Life and Athletics divisions, and a breadth of collaborative faculty across Baylor's academic units. The initiative will explore the possibilities for education and outreach as well as provide practical recommendations for campus living communities to improve residence hall sleeping environments.

The Baylor Clinical Research Hub is designed as a longer-range goal inviting collaboration from the Hankamer School of Business, Robbins College of Health and Human Sciences, the Diana R. Garland School of Social Work, the School of Engineering and Computer Science, and Truett Seminary. Priority areas of collaboration would include assessment and screening; addressing mental health stigma; intervention development and refinement; processes for increasing treatment engagement; sleep disorders; stress, exercise, and cardiac functioning; and opportunities to improve the acquisition and retention of skills learned during episodes of care.

THE TECHNOLOGY PROJECT

One of the 21st century's most striking technological advances is artificial intelligence (AI) — a deep learning computational strategy using data available worldwide that is now capable of generating amazingly human-like text and images. We are on the cusp of a world in which careers of all kinds are greatly affected or supplemented by AI. Baylor must support and drive the learning necessary for our students, faculty and staff to keep pace and adapt to these new expectations. These technologies are continually evolving — creating new possibilities for teaching, research and administration at Baylor. The Technology Project within the College of Arts & Sciences seeks to address these challenges through initiatives in data science and materials science tying into our longstanding commitment to excellence in education and research.

The Data Science Initiative

The Data Science Initiative provides an opportunity to focus on enhancing students' critical thinking, creativity, and emotional intelligence, as well as to bring our researchers needed resources to compete and thrive in this new technological landscape. Accordingly, the College of Arts & Sciences recommends the following:

Enhancing Education Opportunities across both undergraduate and graduate programs is essential for cultivating future academic and industrial leaders at Baylor. We propose enhancement of the curriculum across all departments to this end. Initial focus areas will include computational biology and social sciences, laying a strong foundation for interdisciplinary learning and research.

Promoting Interdisciplinary Research and Innovation across departments will be crucial as all fields are affected by big data and AI. The Health Project and digital humanities, for example, will benefit from predictive modeling and the manipulation of large databases for better research outcomes. By integrating subject area expertise with advanced data science methodologists, we aim to provide broad computational support to our research teams.

Establishing a Data Science Service Hub to expand the existing Statistical Consulting Service, and thus transforming it into a Data Science Hub will provide advanced consulting services in machine learning, predictive analytics, and complex system simulation. This will require recruiting both data science specialists and domain-specific experts who can collaborate effectively to address diverse research and educational needs. This transformation will

significantly enhance research capabilities across the College of Arts & Sciences, fostering innovative solutions and insights.

The Materials Science Initiative

Transformative technologies largely depend on advances and breakthroughs in materials science research. The ongoing Baylor Materials Science Initiative's aim is to design, predict, and characterize new structural and multifunctional materials with potential applications in electronics, optoelectronics, and quantum technologies. This initiative has led to the recruitment of numerous new research faculty members in the College of Arts & Sciences and the School of Engineering and Computer Science, including the hiring of four distinguished chairs. These well-funded research groups provide impactful learning opportunities for undergraduate and graduate students and are addressing challenges faced by prominent industries. To continue and expand this initiative, we propose several action steps:

Promoting Materials Sciences Education to allow for the implementation of a new Ph.D. and a new master's program in Materials Science and Engineering, allowing students to work with faculty across departments in both the College of Arts & Sciences and the School of Engineering and Computer Science. The program is research-intensive and designed to prepare students for future careers in industry, federal research laboratories, and academia.

Targeting Expansion of Materials Research in collaboration with existing materials science faculty, we will identify areas for future growth in the areas of optical, magnetic, structural, and orbital characterization of materials that is critical for understanding emergent electronic phenomena and for computational modeling, which can provide critical insight into underlying mechanisms giving rise to the electronic and optical properties.

Promoting Interdisciplinary Research and Innovation for the faculty of the College of Arts & Sciences to collaborate across academic unit boundaries. A key School of Engineering and Computer Science focus is on sustainable advanced materials and manufacturing that aims to transform and simplify traditional supply chains to allow faster manufacturing at lower costs. Bioengineering is a rapidly expanding field that combines engineering with breakthroughs in biology, chemistry and physics to create cutting-edge technologies that tackle critical healthcare challenges. The signature research initiatives in Robbins College of Health and Human Sciences overlap in many ways with the College of Arts & Sciences in behavioral, health and rehabilitative sciences. These collaborations will provide opportunities to educate students on the intersection of modern healthcare technology and new ways to solve complex problems.

Creating a Materials Science Center for Characterization will continue to expand materials research supporting infrastructure. Over the last five years, the Baylor Sciences Building Center for Microscopy and Imaging (CMI) has added several critically needed capabilities, including a cryoTEM funded by the Cancer Prevention and Research Institute of Texas (CPRIT). The CMI has a five-year plan to upgrade the instrumentation to Tier 1, with an estimated cost of about $2.5 million.