# Texas A&M Science *NOW*

## *Scientific Leaders in Scholarship and Discovery*

Great universities are anchored on great colleges of arts and sciences. Faculty from these colleges deliver foundational undergraduate curricula and comprise the intellectual core of their universities. Science faculty, in particular, sustain our nation's preeminence in scientific research and technological innovation. With the growing global challenges of the health, wellbeing and sustainability of the world's people and its environment, scientific knowledge and discoveries are more important now, than ever. The College of Science at Texas A&M University seeks to expand its leadership role in advancing fundamental scientific research, transferring that knowledge to diverse communities of scholars, and translating scientific innovations into technologies that benefit society. To achieve these goals, we will build upon our strengths, expand our institutional and industrial collaborations, and engage local communities to advance research in the biological, chemical, and computational sciences. ***Our ultimate goal is to establish the Texas A&M University College of Science as an international center for scientific scholarship, discovery, education and innovation in a society where science matters.***

The ***Science Now*** initiative is a major investment to ***(1) attract top scientific scholars***, ***(2) build premier research facilities***, **(3)** ***advance scientific research***, and leverage our scientific prowess to ***(4) train the next generation of American scientists***. The time for growth is ideal, as the Texas A&M student body has expanded by *ca*. 30% over the past decade, and we now have an opportunity to amplify our faculty scholars to enhance educational, research and training experiences. Central to our strategic planning is an aggressive initiative to fill 50 newly-endowed faculty lines over 10 years. These faculty lines will provide the intellectual capital for renewing our historical strength in the sciences by offsetting recent faculty losses and advancing our leadership in core research areas. In addition, this initiative will provide seed money for the construction of a basic sciences research facility focused on the biological, chemical and computational sciences, as well as provide funds to engage undergraduate students in cutting-edge research and technologies.

***Science Now*** focus areas have been developed from a multi-year process of strategic planning involving self-study, external review, and summits discussing our strengths, opportunities, aspirations and results, so-called SOAR strategic planning efforts among the tenured and tenure-track faculty of Biology. A similar analysis is ongoing in Chemistry. Biology and Chemistry are both natural sciences. Chemists focus on elements and compounds that constitute all matter in the universe. Biologists study the lives of cells and organisms. Investigations of the atoms and molecules composing the matter of life lie at the interface of these two scientific fields. The study of biological structures, biochemical processes, molecular, physiological and developmental mechanisms, and the genetic heredity underlying evolution all occupy an intermediate position between biology and chemistry, a leverage point that both illuminates and harnesses the mechanisms of life.

Our departmental strategic plans identify focus areas in which Texas A&M Science can establish scientific preeminence over the next decade. Biological research thrusts are circadian timing, animal and plant resilience, body regeneration and repair, genetic mechanisms of evolution, and synthetic biology. Chemical research foci are human frontiers, extreme environments, sustainability of the planet, the chemistry of life, and the creation of tools that enable analytical and technological

innovation. Science Now's investments promote the ascendancy of our scientific research at the juncture of biology and chemistry, where broad societal impacts necessary for protecting our planet and safeguarding the welfare of those living on it exists.

## Eminent Faculty Scholars

The top priority of Science Now is an aggressive 10-year faculty investment in attracting the very best scientists to our strategic research areas. This initiative will endow 50 new faculty lines used to hire faculty in Biology and Chemistry, but also in complementary areas of scientific computation in Mathematics or Statistics. The recruitment packages for 50 eminent scholars in science, including salary, research start-up and relocation costs, will be substantial. Our plan proposes a cost sharing model with university funds matching a significant development gift of over $200M. Although sizable, investments in high-trajectory researchers provide an almost immediate return on investment from the federal grant dollars these researchers attract.

Targeted investment in faculty will build upon our current research strengths. Our scientists are now making important discoveries at the boundaries of biological and chemical research. For example, Drs. Gomer, Rosenthal and Bell-Pedersen in Biology and Drs. Liu, Wooley and Banerjee in Chemistry, among others, have recently published and patented discoveries for therapeutic treatments of diseases, the creation of sustainable materials, and inventions to promote public welfare. Future hires will target synergistic collaborations with faculty researchers across Texas A&M, building upon existing strengths in Medicine, Engineering, and Agriculture, as well as the broader biomedical and life sciences communities.

## Premier Research Facilities

The nature of scientific discovery is inextricably linked to the quality of the research environment. The Science Now Campaign seeks construction of premier science research facilities at Texas A&M. This state-of-the-art Basic Science Research Complex is necessary to attract and retain premier scientists and provide the technology, resources and environment necessary for their research. We seek an endowment of $180M to seed the Basic Science Research Complex and an additional $20M to develop new research technologies to be housed in the Complex. With University investment, we will build a discovery incubator for next generation of science now.

The Science Research Complex is envisioned to be a multiple building facility with the first phase being a new Biological Science Building (BSB). This new home to half of the Department of Biology, including current and future research faculty and their teams, was programmed in 2020 and is moving toward architectural design. The second phase of the complex will consist of Chemistry of Life Science Complex (CLSC) that will house researcher in Chemistry and Biology at the interface of the two departments' strategic plans, particularly research into synthetic biology.

## Training Science Leaders

Science Now aims to train the next generation of American scientists with a focus on attracting the brightest scientific minds to Texas A&M at the undergraduate, graduate and postdoctoral levels. We will accomplish this objective by awarding Endowed Young Investigator Scholarships to 400 Aggies and Scientist Training Fellowships to 100 early career researcher each year. At a cost of $50M, these endowed research training awards will provide top scholars from Texas and American schools the opportunity to learn from top scientists in premier research facilities at Texas A&M.

Premier sciences, along with liberal arts, are at the heart of every comprehensive research university in the United States. ***Science Now*** aspires to attract top scientists that share our vision of leading the basic science world with Texas A&M scholarship and discovery. Our strategic plans aim create premier biological and chemical research entities and grant young Aggies the opportunity to share in the experiences of scholarship and discovery that will transform the world with science- now.

## Science *NOW* Development Campaign

### Eminent Faculty Scholars:

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| Endowed Chairs in Biology | $125,000*25/.04 = $78.1M |
| Recruitment, Start-up, and Relocation Costs | $2M*25 = $50M |
| Endowed Chairs in Chemistry | $125,000*15/.04 = $46.9M |
| Recruitment, Start-up, and Relocation Costs | $2M*15 = $30M |
| Endowed Chairs in Mathematics and Statistics | $125,000*10/.04 = $31.3M |
| Recruitment, Start-up, and Relocation Costs | $0.2M*10 = $2M |
| **Total** | **$238.3M** |

### Basic Sciences Research Complex:

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| Basic Science Research Building | $180M |
| Core Technology Facility Costs | $20M |
| **Total** | **$200M** |

### Endowed Scientist Training Fellowships:

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| Graduate Research Fellows | $35,000*50/.04 = $43.8M |
| Postdoctoral Research Fellows | $55,000*50/.04 = $68.8M |
| **Total** | **$112.6M** |

### Endowed Young Investigator Scholarships:

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| Undergraduate Research Scholarships | $4,000*400/.04 = $40M |
| Travel Award Costs | $1,000*400/.04 = $10M |
| **Total** | **$50M** |

## Total Science *NOW* Campaign Cost: $600.9M