From the Dean
As the College of Agriculture and Life Sciences celebrates the 150th anniversary of the Morrill Land-Grant College Act of 1862, we are taking a closer look at what it means to be a land-grant institution: providing a well-rounded, practical education to a diverse student body; conducting world-class research; and making the results of that research available by engaging with the world around us. Because agriculture was one of the pillars on which Texas A&M University was founded, the students we have educated and the scientific advancements we have shared have made life better for millions, in Texas and around the world.

From long-established majors such as horticulture and animal science to newer programs such as forensics and ecosystem sciences, the College is widely recognized as a leader in dozens of academic disciplines. Our award-winning faculty members are discovering the fuels of the future, unlocking genetic mysteries to cure diseases, and working to ensure the safety, nutritional value, and abundance of our food supply.

In the fall of 2012 our enrollment was 7,265, and we still have one of the highest numbers of students at Texas A&M who are the first in their family to attend college. The value we place on tradition means even more now that we have rounded our century mark, celebrating 100 years as a college in 2011. Today, as we remember Senator Justin Smith Morrill and all those who had the vision to make a college education available to all people, we look forward to the future, where our students will carry on the land-grant mission with honor.

— Dr. Mark A. Hussey
Vice Chancellor and Dean for Agriculture and Life Sciences

One College. Five Grand Challenges.

Protecting Our Environment
Agriculture and a healthy environment must go hand in hand. The College is committed to environmental sustainability and restoring the health of our ecosystems. Our students can follow their passion by creating parks and green spaces, protecting wildlife, and guarding the health of our water bodies and fisheries. With Texas A&M AgriLife Research and the Texas A&M AgriLife Extension Service, the College is involved in many projects in these areas, including restoring health to Fort Hood, surveying and protecting endangered wildlife species, revitalizing rangelands, designing parks and trails throughout Texas, studying the effects of climate change, and developing biofuels for a clean and secure energy future.

Improving Our Health
From recreation and weight control to designing fruits and vegetables with more phytonutrients for cancer prevention to using the latest biotechnology advancements to search for new drugs, the College is dedicated to improving health. Our students in the life sciences will be among the research scientists and technicians, physicians, pharmacists, and biotechnology engineers of the future. We recognize the leadership role in health by providing students and researchers with state-of-the-art equipment and facilities to investigate such areas as structure-based drug design using X-ray crystallography combined with computer bioinformatics to find the right drug to target a specific disease. Other research is aimed at finding nontoxic “smart drugs” that can be carried by nanoparticles directly to disease sites in the body.

Enriching Our Youth
We prepare students to be leaders in solving the world’s problems. Whether they choose medicine, engineering, business, environmental conservation, education, journalism, or food production, students can start their career in our College. In addition to a world-class education, our students have a full range of experiences to enrich their classroom learning. Study abroad, field experiences, internships, undergraduate research, and a wide choice of clubs and student organizations all allow students to develop leadership, organizational, and communication skills, to become society-ready graduates. Our faculty and programs specializing in youth development and community development, particularly for at-risk youth in both urban and rural settings, equip our students to address the many complex issues facing today’s young people. Students can also choose from major programs in teacher training as well as communications and journalism.

Feeding Our World
Growing populations, decreasing natural resources, and increasing environmental challenges present us with opportunities to find the most efficient and healthful ways to provide food for all, both domestically and globally. Our faculty and students work at levels ranging from the molecular to the industrial to develop best practices for growing, processing, and distributing food that is safe, high in quality, and abundant. Air quality and the sustainable use of land and water resources — as well as the impact of trade practices and governmental policies — are areas of active research and teaching by our faculty. In addition to improving our own food supply, our faculty and students are helping other nations become more food secure, which in turn can prevent conflict around the globe. The world’s interconnected society and commerce make getting a world leadership role even more critical to today’s graduates. Our students learn how to meet the food needs in other countries by knowing their customs as well as their production constraints. Study abroad offers an important opportunity for our students to gain that understanding.

Growing Our Economy
Producing more, selling more, adding value, and increasing the safety and security of what we trade are all ways the College is growing our economy. Food and natural resources are more expensive today, in part because the population and economies of the world are growing. The United States has greater competition in the global marketplace because more countries are producing goods. As a result, their citizens have more disposable income. This provides us with an opportunity to reach new markets, use technology and innovation to add value to existing products, and create new products to meet previously unseen needs. We must do this in a way that ensures consumer safety and the security of global interests while protecting the environment from increased pressures on land, air, and water needed to produce more food and fiber.

AgLifeSciences.tamu.edu

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One College. Five Grand Challenges.
Here are some ways the College is working to meet our five grand challenges:

**Protecting Our Environment**
- A faculty member is studying barrier islands, beaches, and dunes for clues to the ways natural and man-made changes affect fragile ecosystems.
- Faculty members are using computer modeling and spatial sciences to map watershed contamination.
- Researchers are studying high-cellulose plants as well as microalgae to produce biofuels that could transform the nation’s energy use.

**Enriching Our Youth**
- The Agricultural and Natural Resources Policy Internship Program, now in its 22nd year, prepares 90 students per year to become future policy leaders through experiences in Washington, D.C., and Austin.
- The Youth Development Initiative provides research and evaluation to improve youth programs and train those working with young people.
- Abriendo Puertas (Opening Doors) and Hispanic Leaders in Agriculture and the Environment provide college access and ensure success for Hispanic students across Texas.

**Improving Our Health**
- College faculty members serve on national panels that set federal nutrition guidelines, helping to establish a basis for better health and to combat obesity, cancer, and heart disease.
- Our faculty members are developing rapid-detection methods for cancer as well as anti-aging solutions and cancer-prevention strategies.
- Faculty members are developing new fruit and vegetable varieties with disease-prevention properties and studying the mechanism of those effects.

**Feeding Our World**
- Through partnerships with universities and private organizations in southern Africa, we have a network of programs and facilities where our students receive training while helping to advance African agriculture.
- Faculty are studying high-yield, drought-resistant crops for both the United States and Africa, with the goal of developing improved varieties to supplement marginal diets.
- Over 400 students participated in 24 study abroad courses and 7 reciprocal exchanges in 18 countries in the 2011–2012 academic year.
- Through a Bill and Melinda Gates Foundation grant, the Borlaug International Scholars Program trains graduate students from developing nations.
- Through our advancements in crop systems, animal science, and use of water or other natural resources, we are increasing food production in the United States and global food security.

**Growing Our Economy**
- Students learn and experience entrepreneurship as they develop and “pitch” their own company concepts to national business leaders in Rural Entrepreneurship class.
- Faculty members are revolutionizing the area of biofuels, including their design, chemistry, production, and marketing as well as the business and natural resource policies they impact.
- Faculty researchers are adding value to raw food and fiber materials by making products safer and more efficient, available, and convenient.
- Our College undergraduates completed 2,365 research projects, 136 conference presentations, 52 publications, 892 internships, and 667 service learning projects in 2011–2012.

Morrill Act Sesquicentennial Anniversary
Celebrating 150 Years of Learning, Discovery, Extension, and Service
1862–2012

“...especially to the sons of toil, where all of needful science for the practical avocations of life shall be taught . . .”

—Justin Smith Morrill
U.S. Representative and Senator, author of the Morrill Land-Grant College Act, 1862