

A Vision and Strategic Plan for the Ellison Chair in International Floriculture

March 2006

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Executive Summary

In this document, floriculture is defined as the science and art of cultivating and managing flowers, flowering plants, and ornamental plants. The primary focus of this Chair is on floriculture. However, results of Chair activities will be shared with all sectors of the ‘green’ industry, as these are interrelated.

The ‘green’ industry is the fastest growing segment of Texas agriculture and is now among its top three segments in the area of economic impact. Texas is among the top three states in the US in the area of nursery/floral crop production.

The *Mission* of this Chair is to advance the health and vitality of the floriculture industry, on a national and international scope, through exemplary academic leadership, cutting edge applied research, innovative extension outreach programs, and by mentoring well-educated, impassioned leaders to support the future of floriculture. Our *Vision* is to be, in five years, the premier floriculture program (Horticultural Sciences – TAMUS), as recognized by our peers and those we serve. The initial International Floriculture Chairholder was charged to serve as an ‘architect’ and champion, developing a well-conceived plan and focused, workable process to achieve preeminence for International Floriculture at Texas A&M.

A ‘*Strengths, Weaknesses, Opportunities, and Threats*’ (SWOT) Analysis was conducted as a guide to achieving this overall goal. Based on this SWOT analysis, it was determined that there is a strong, outstanding faculty in place in the floriculture area, at TAMU in College Station and at Research and Extension Centers statewide. Also, facilities both at College Station and statewide are excellent, particularly in the TAMU Department of Horticultural Sciences and at our Dallas Research and Extension Center (an urban center focused on the ‘green’ industry). Additionally, the Chair has an excellent, strongly committed external Advisory Committee dedicated to the success of the Chair in elevating TAMU and the floriculture industry (in Texas first, but also nationally and worldwide) to premier status.

While we have strong individual programs in floriculture, there is a need for greater collaborative, partnering efforts to capture the synergy that is possible and thus elevate the overall program. Also, there is a lack of needed sustainable fiscal resources, both internally and through external grants and contracts, to adequately support the program and best serve the industry. Additionally there is a need for increased recognition of the TAMU floriculture program, through better marketing of the program and through increased publication of research results in peer-reviewed publications and through more presentations at industry-led meetings and more high-impact stories and articles in industry publications.

Given this, the *Role of the Chair* should encompass the following and the Chairholder should:

1. Be an individual who has sufficient breadth and expertise in bringing faculty together working toward common goals, capturing synergy for the enhancement of the total program.
2. Be an individual who can facilitate strong, unified team efforts to obtain significantly increased sustainable program funding from all appropriate sources, including internal (state and federal) and external (grants and contracts from industry, state and federal agencies, and private endowments).
3. Be an individual who can work effectively with university leaders, industry leaders, fellow faculty members on a multidisciplinary basis, as well as state and national governmental leaders, determining priorities and acquiring funds necessary to address issues critical to the “green” industry.
4. Be an individual of sufficient national and international stature to bring high recognition to the TAMU floriculture program.
5. Be an individual who enjoys working with undergraduate and graduate students and is an effective teacher and mentor.
6. Be an effective communicator with all groups.
7. Have the ability to facilitate strong programs in the currently identified programmatic areas of emphasis including: first, (1) people development and (2) environmental sustainability with focus on water; and also (3) marketing and (4) efficient production systems.

Based on the SWOT analysis, five *Strategic Objectives* have been identified for a five-year planning period. These are:

1. **Increase funding** for our research and extension program in floriculture and related areas.
2. **Increase partnerships** in this area among TAMU faculty on a disciplinary and multidisciplinary basis, with faculty at other universities nationally and internationally, and with the floriculture industry.
3. **Increase numbers of top-quality undergraduate and graduate students** in floriculture to meet growing needs.
4. **Increase program recognition** for the TAMU floriculture program.
5. **Increase vitality and productivity** of programs in the identified areas of emphasis.

An *Implementation Plan* is given with Goals for each of the Strategic Objectives along with target timelines for accomplishment of the Goals.

Areas of Emphasis represent top-priority areas of need for the floriculture industry and are areas where the Chair will **facilitate and support strong, enhanced programs** to elevate the TAMU floriculture program and the floriculture industry. Primary emphasis will be placed initially on **People Development** and **Environmental Sustainability with focus on Water**, with secondary emphasis on **Marketing** and **Efficient Production Systems**. These areas are recommended by the Chair based on listening sessions with industry leaders and university faculty and were endorsed by the external Chair Advisory Committee. Further elaboration of programs in each of these areas of emphasis is provided in the body of the Plan.

Foreword

The purpose of this document is to articulate a direction and sense of purpose for the Ellison Chair in International Floriculture. This document will serve as a roadmap to assist in guiding the Chair, Faculty, and Advisory Committee to collectively make the greatest positive impact for the floriculture industry and the Texas A&M University floriculture/greenhouse crops program.

This document and the planning process should be viewed as dynamic and evolving. Change is occurring at such a rapid pace that it is extremely difficult to forecast emerging issues, problems and trends more than 2 - 3 years in advance. Therefore, it is important to remain flexible and adapt as quickly as possible to change. The plan and planning process should be revisited regularly to ensure relevance.

This process will also ensure that the form and function of the Chair blend well with the: Strategic Plan for the TAMU Department of Horticultural Sciences, Strategic Plan for Texas Cooperative Extension – Horticulture and the TAMU-Horticulture/Texas Nursery and Landscape Association Strategic Partnership Plan. The Executive Summary of the Departmental Strategic Plan is attached as Appendix A. The other two Strategic Plans are appendices in the Departmental Strategic Plan. This process will also assist in determining adequate and appropriate internal and external evaluation and accountability measures.

Prior to initiating the planning process it is important to have a thorough understanding of current nursery/floral assets within The Texas A&M University System, as well as the opportunities and challenges that lie ahead.

Background and Context

A Brief History of the Department of Horticultural Sciences.

The Department of Horticulture and Botany was established as the Agricultural and Mechanical College of Texas in 1887. The first degree in Horticulture and Botany was awarded in 1898. The Departments of Horticulture and Botany were separated in 1906 and E.J. Kyle was appointed the first Head of the Department of Horticulture (Dr. Kyle later became Dean of Agriculture and our current football stadium, Kyle Field, was named after him.)

In 1963, the Department of Horticulture was merged into the Department of Soil and Crop Sciences. In 1976, the Department of Horticultural Sciences was re-formed. Eight years later the Department was moved into the current building (Horticulture/Forest Science Building) it now occupies on the West Campus at Texas A&M University. The Department is currently one of fourteen Departments in the College of Agriculture and Life Sciences (COALS).

A Brief History of the Ellison Chair in International Floriculture.

The Department of Horticultural Sciences is endeavoring to meet the research and educational needs of the state's floriculture and ornamental horticulture producers and consumers. A significant grower-led effort to strengthen the research and educational programs addressing the needs of the Texas floriculture and ornamental horticulture industries resulted in necessary funding to establish an Endowed Chair in International Floriculture in the Department of Horticultural Sciences. The Chair was fully endowed in mid-2004 with strong industry leadership. In fall 2004, Ed Hiler was chosen as the first Chairholder following his retirement as Vice Chancellor and Dean of Agriculture and Life Sciences and Director of the Texas Agricultural Experiment Station. The Endowed Chair is intended to bring national and international recognition to the floriculture/greenhouse crops program at Texas A&M. The charge to the Chairholder was to serve as an "architect" and champion, developing a well-conceived plan and focused, workable process to achieve the stated goal of preeminence. Principal efforts to date have focused on the Chairholder gaining an increased knowledge of the "green" industry in Texas, the nation, and the world and developing proposals for increased funding of Horticulture programs. A fully engaged Advisory Committee significantly enhances the overall effort.

TAMU Nursery/Floral Inventory Analysis.

Human. There are a total of 30 TAMU teaching, research and extension faculty positions currently working in areas related to Floriculture (see Appendix B for a complete listing). Nineteen of these positions are located on campus in College Station and 11 are located

off-campus. In addition to those in Horticultural Sciences, faculty in College Station are located in the Departments of Entomology, Plant Pathology and Microbiology, Biological and Agricultural Engineering, and Agricultural Economics (position vacant at present). Off-campus locations which house faculty involved in the area of floriculture include Dallas, Overton, San Antonio, Weslaco, and El Paso.

Although they do not have formal faculty appointments, there are 22 County Extension Agents for Horticulture throughout the state. These positions are primarily located in urban areas and play an important role in overall Extension horticulture programming.

Fiscal. Fiscal resources available to the Department of Horticultural Sciences come from four primary sources: 1) COALS (total annual budget is \$1.2 million for FY 06); 2) Texas Agricultural Experiment Station (total annual budget is \$1.1 million for FY 06); 3) Texas Cooperative Extension (total annual budget is \$1.1 million for FY 06); 4) grants and contracts (typically totaling around \$2 million per year). A very high proportion of state-appropriated funds is allocated to faculty/staff salaries and little discretionary funding is available. These resources support the entire Horticultural Sciences Department, with about 30% of them dedicated to ornamental horticulture/floriculture. Additional fiscal resources support the floriculture area in other departments and centers where faculty working in floriculture are located (see Appendix B).

Physical. The Department is located in the Horticulture/Forest Science Building (HFSB), one of the most attractive buildings on campus. The building boasts modern office, classroom, and laboratory facilities, and a beautiful atrium. Approximately 38,000 square feet of greenhouse space is conveniently located behind the building. Other departmental assets in the area of floriculture/ornamental horticulture include: the Holistic Garden, the TAMU Horticultural Gardens, Lamar Street greenhouses (central campus), and a 160-acre horticulture farm. Departmental scientists also occupy laboratory and greenhouse space in the Institute for Plant Genomics and Biotechnology, located next to the HFSB.

As indicated in Appendix B, faculty are located in several other departments at TAMU and at Research and Extension Centers around the State. Each of these units has significant physical assets including land, buildings and scientific equipment. The Dallas Research and Extension Center program is focused almost totally on the “green industry” and is a major asset located in the urban metroplex environment.

Departmental Programs.

Degrees. The Department offers undergraduate Bachelor of Science degrees in both Floriculture and Horticulture with three study emphases: Production and Management, Science and Biotechnology, and Environmental Horticulture and Urban Horticulture. A new Bachelor of Arts degree in Horticulture has recently been approved for 2006. This will be the first of its kind in COALS. Undergraduate enrollment in the Department has averaged about 150 majors in recent years. About two-thirds of the undergraduate majors are female. The Department also provides a significant number of course offerings for non-majors and ranks high within COALS in terms of the percentage of total student credit hours taught for non-majors.

At the graduate level, the Department offers a non-thesis Masters of Agriculture degree, a thesis-required Master of Science degree, and a PhD. We also offer a cooperative PhD degree with Texas A&M University-Kingsville. We have several graduate students advised by graduate faculty in the Department who pursue M.S. and PhD degrees in Molecular and Environmental Plant Sciences, Biotechnology, Food Science and Technology, and Plant Breeding and Genetics. Graduate enrollment in the Department has averaged around 50 in recent years, with a significant number of students of international origin. Funding for graduate students in the Department is derived from 9.5 graduate assistantships–non-teaching (GANT’s) and 9.5 graduate assistantships-teaching (GAT’s). Graduate research assistantships (GAR’s) are funded by individual grants with limited cost-shared GAR’s during summers from graduate enhancement funds.

The Department offers a total of 56 individual courses, 38 undergraduate courses and 18 graduate-level. A majority of these courses are related to the ornamental horticulture/floriculture area.

Research. Departmental faculty are engaged in a variety of research programs related to horticultural sciences. Research topics related to international floriculture include biotechnology, molecular biology, postharvest physiology/processing, plant stress physiology, plant nutrition, water conservation/management, plant breeding and genetics, greenhouse/nursery production, landscape plant establishment and propagation, landscape ecology, phytochemicals, and plant/people interactions.

Extension. Extension programs address both commercial and home horticulture. Programs in commercial horticulture focus on production methods, pest management, cultivar evaluation, water management/conservation, sustainable systems, and alternate crops. Home horticulture programs target landscape management, pest management, water conservation and use of new cultivars. Major programs addressing these needs are: 1) Aggie Horticulture web site; 2) Coordinated Educational and Marketing Assistance Programs (CEMAP); 3) EarthKind gardening; 4) Master Gardener and Junior Master Gardener programs; 5) Texas Nursery and Landscape Association training; and 6) County Extension Agent professional improvement.

Student Activities. Students in the Department are very active in university, professional, and service activities and programs. Active clubs and organizations include: Texas A&M Horticulture Club, Student Chapter of the Institute of Floral Designers, Pi Alpha Xi Floriculture Honor Society, Horticulture Graduate Council, and Horticulture Aggie Reps. Both graduate and undergraduate students have been very active in the American Society for Horticultural Sciences (ASHS) and the Southern Region of ASHS. The Floriculture/Horticulture Society from Texas A&M has received numerous awards and honors at ASHS meetings. They have frequently been named the Outstanding Club in the nation. Students regularly attend the annual meetings of commodity and producer organizations such as the Texas Nursery and Landscape Association and the Texas State Florists Association. Students in the Department are typically awarded 40-50 scholarships with a total value of around \$30,000 per year. Our recently launched “Aggies for Hire” web site has proven useful for linking students with prospective employers.

Externalities Relevant to the Chair

There are a host of trends which are relevant to planning for the future of the Chair. These include:

- Growing urban population
- Expanding green industry
- Increased consumer demand for sound, science-based horticultural information – gardening is the most popular leisure time activity in the U.S.
- Increased diverse population
- Immigration reform or lack thereof
- Need for improved cultivars to ensure competitiveness of the Texas floriculture industry
- Aging population
- More women in leadership roles
- Agriculture moving from “producer-driven” to “consumer-driven”
- Agriculture not perceived as a high priority for our society by many people
- Vertical integration of agriculture increasing
- Increased environmental sensitivity and increased demand for “sustainable” management practices
- Increasing demand and competition for water resources
- Soaring energy costs
- Technology increasing at a rapid rate
- Increasing risk being placed with the producer – ‘Pay by Scan’ being adopted by ‘big-box’ retailers
- Globalization
- Increased threat of bioterrorism
- Increased desire of industry-university partnerships
- Increased accountability of state agencies – more emphasis on quantitative measures
- State lines becoming blurred – more emphasis on regional programs
- Less state funding available for higher education – more leveraging of state funding required
- Increased competitiveness for admission to flagship institutions
- Increased need for access to majors
- Increased need for diversity in student body and faculty
- Interest in increasing faculty numbers but reducing support staff
- Increased interest in “specialty crops”
- Increased emphasis on excellence (i.e. “good” is not enough)

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

A SWOT analysis can be a very useful exercise in determining how best to use available resources in addressing specific issue areas. The SWOT analysis also helps identify areas that may be limiting in terms of addressing those same issues.

Strengths

Strategic. At present, the Department of Horticultural Sciences is generally viewed by Agriculture Program administration as having good potential and being strategically important to the future of the Agriculture Program. This is primarily because Horticulture is viewed as relevant to a large segment of our population (both urban and rural) and because the green industry is now recognized as the second leading sector in Texas agriculture.

Programmatic.

- Strong, multidisciplinary faculty committed to excellence in working with industry
- Excellent facilities located in College Station and statewide
- TAMU Horticulture has University-wide recognition for teaching and student advising program
- National/international leadership in the area of information technology (Aggie Horticulture)
- Texas Plant Disease Diagnostic Laboratory
- New Bachelor of Arts degree program
- Ellison Chair in International Floriculture, Benz Chair in Floral Design, and Basye Professorship in Rose Genetics
- Network of County Extension Horticulturists (20 across State of Texas)
- High visibility extension educational programs (e.g. EarthKind and TX Superstar)
- Excellent leader as department head, whose technical expertise is in floriculture
- Bilingual capability of several Extension Horticulturists
- Strong, positive partnerships with TNLA, TSFA, and other industry organizations/leaders
- GREEN industry now among the top three segments of Texas Agriculture in the area of economic impact
- GREEN industry is the fastest growing segment of Texas Agriculture in the area of economic impact
- Texas is among the top three states in the US in the area of nursery/floral crop production

- Cherokee County represents the largest and most concentrated county of nursery/floral crop production in the US

Weaknesses

- Need for a long-range plan to address specific challenges and industry issues and trends in floriculture
- Lack of faculty expertise/focus in the floriculture marketing area, which has been identified by the industry as a top priority
- Only one TCE Specialist in the area of commercial nursery/floral crop production
- Significant reductions of state-appropriated operating and travel resources
- Grants and external resources, NOT industry need, sometimes drive programs
- Lack of adequate fiscal resources in general, both internally and through external grants and contracts
- Lack of a well-focused effort in the area of nursery/floral crop production and marketing
- Limited partnering among departmental faculty, across departments, and with other universities nationally and internationally
- Low doctoral student numbers
- Complex and diverse industry that is difficult to describe both internally and externally
- Industry does not provide significant fiscal support for teaching, research and/or extension educational programs; there is no “checkoff” program or other means to provide continuing support, as with other agricultural commodities
- Industry does not adequately assist in communicating (both internally and externally) needs of teaching, research and extension educational programs
- Graduates not as “job-ready” as desired by industry
- Industry salaries are below average for comparable positions in other areas of agriculture

Opportunities

- Development of a long-range strategic plan that would provide direction for multidisciplinary teaching, research and extension educational programs in the area of nursery/floral crop production

- Increased collaboration among and between industry and multidisciplinary faculty/programs in the area of nursery/floral crop production
- Increased visibility for multidisciplinary teaching, research and extension educational programs in the nursery/floral production area
- Increased grants and contracts through enhanced synergy and partnerships both within and between multidisciplinary teaching, research and extension educational programs
- Development of new fiscal resources to support multidisciplinary teaching, research and extension educational programs
- Increased collaborations with international faculty/students and industry
- Increased numbers of graduate and undergraduate students in the area of nursery/floral crop production through successful student recruiting and retention programs
- Increased number of career opportunities for graduate and undergraduate students in the area of nursery/floral crop production and marketing
- Broad-based, well-organized graduate and undergraduate internship program in the area of nursery/floral crops to increase value of degrees
- Reallocation of resources from traditional areas of agriculture to emerging GREEN industry
- Opportunity/Need for development of a Center of Excellence (state, regional, national, international) in the area of nursery/floral crop production and marketing
- Opportunity/Need for development of a Distinguished Lecture Series in International Floriculture bringing leaders in floriculture to TAMU, enhancing our reputation as a top-level player in this field
- Opportunity/Need for development of training tools for entry-level workers in the greenhouse/nursery crops industry that are bilingual and easy to use
- Opportunity/Need for supporting development of a document addressing Best Practices by Zip Code for Texas

Threats

- Continued cuts (at the state and federal level) of the resources that support teaching, research and extension educational programs in the area of nursery/floral crop production
- Lack of funding for graduate students and the increased costs of supporting graduate students

- Increasing costs of production
- Market/price for nursery/floral products largely controlled by a small group of “mega” retailers (adoption of ‘Pay-by-Scan’, increasing risk to the producer)
- Increased concern regarding long-term availability of high-quality irrigation water at a reasonable cost
- Instability in the energy market and associated high energy costs that are escalating rapidly
- Increasing environmental regulations and policies
- Labor availability and immigration policies related to employment

Mission Statement

The mission of this Chair is to advance the health and vitality of the floriculture industry, on a national and international scope, through exemplary academic leadership, cutting edge applied research, innovative extension outreach programs, and by mentoring well-educated, impassioned leaders to support the future of floriculture.

Vision Statement

Our vision is to be, in five years, the premier floriculture program (Horticultural Sciences – TAMUS), as recognized by our peers and those we serve.

Role of the Chair

As indicated in the SWOT analysis, there is a strong, outstanding faculty in place in the floriculture area, at TAMU in College Station and at Research and Extension Centers statewide. Also, facilities both at College Station and statewide are excellent, particularly in the TAMU Department of Horticultural Sciences and at our Dallas Research and Extension Center (an urban center focused on the ‘green’ industry). Additionally, the Chair has an excellent, strongly committed external Advisory Committee dedicated to the success of the Chair in elevating TAMU and the floriculture industry (in Texas first, but also nationally and worldwide) to premier status.

While we have strong individual programs in floriculture, there is a need for greater collaborative, partnering efforts to capture the synergy that is possible and thus elevate the overall program. Also, there is a lack of needed sustainable fiscal resources, both internally and through external grants and contracts, to adequately support the program and best serve the industry. Additionally there is a need for increased recognition of the TAMU floriculture program, through better marketing of the program and through increased publication of research results in peer-reviewed publications and through more presentations at industry-led meetings and more articles in industry publications.

Given this, the role of the Chair should encompass the following and the Chairholder should:

1. Be an individual who has sufficient breadth and expertise in bringing faculty together working toward common goals, capturing synergy for the enhancement of the total program.
2. Be an individual who can facilitate strong, unified team efforts to obtain significantly increased sustainable program funding from all appropriate sources, including internal (state and federal) and external (grants and contracts from industry, state and federal agencies, and private endowments).
3. Be an individual who can work effectively with university leaders, industry leaders, fellow faculty members on a multidisciplinary basis, as well as state and national governmental leaders, determining priorities and acquiring funds necessary to address issues critical to the “green” industry.
4. Be an individual of sufficient national and international stature to bring high recognition to the TAMU floriculture program.
5. Be an individual who enjoys working with undergraduate and graduate students and is an effective teacher and mentor.
6. Be an effective communicator with all groups.
7. Have the ability to facilitate strong programs in the currently identified programmatic areas of emphasis including: first, (1) people development and (2) environmental sustainability with focus on water; and also (3) marketing and (4) efficient production systems.

Strategic Objectives

Based on the SWOT analysis presented earlier in this document, five strategic objectives have been identified for a five-year planning period. These are:

1. **Increase funding** for our research and extension program in floriculture and related areas. Given our strong faculty and excellent facilities, efforts must be made to increase our sustainable funding and to increase our grants and contracts from state and federal sources, industry, and private foundations.
2. **Increase partnerships** in this area among TAMU faculty on a disciplinary and multidisciplinary basis, with faculty at other universities nationally and internationally, and with the floriculture industry. Successful partnerships are needed for increased program funding, increased program recognition, and increased value to the industry we serve.
3. **Increase numbers of top-quality undergraduate and graduate students** in floriculture to meet growing needs. High quality, motivated graduates committed to ‘making a difference’ are the principal products and lifeblood of a university

and the lifeblood for the future of the industry. We have the capacity for increased numbers of majors in horticulture and floriculture at both the undergraduate and graduate levels. A very important target is doctoral-level students.

4. **Increase program recognition** for the TAMU floriculture program. Several efforts to achieve this objective are enumerated in the upcoming section entitled Implementation Plan.
5. **Increase vitality and productivity** of programs **in the areas of emphasis** enumerated in the next section. These areas of emphasis were determined through in-depth discussions with faculty, industry leaders (growers and retailers), and our external Advisory Committee.

Areas of Emphasis

These areas of emphasis represent top-priority areas of need for the floriculture industry and are areas where the Chair will facilitate and support strong, enhanced programs to elevate the TAMU floriculture program and the floriculture industry. Primary emphasis will be placed initially on People Development and Environmental Sustainability with focus on Water, with secondary emphasis on Marketing and Efficient Production Systems. These areas were recommended by the Chair based on listening sessions with industry leaders and university faculty and were endorsed by the external Chair Advisory Committee.

People Development

Universities, and particularly land-grant universities such as Texas A&M, are in the people-development business with their teaching, research, and extension programs. Our mission is to “develop leaders for tomorrow”. Strong emphasis will be placed on enhancing our student/employer internship program and on development of bilingual easy-to-use training tools for entry-level workers. These have been expressed as strong needs by the industry. Another area of significant need is increased formal education in leadership development at the graduate and advanced undergraduate levels. Other programs currently in place for which the Chair will support and emphasize include the Junior Master Gardener Program (TAMU Horticulture is national leader), the Master Gardener Program, student recruiting for careers in floriculture and student placement. Additionally there are several other existing Continuing Education programs the Department offers in support of the floriculture industry.

Environmental Sustainability, with Focus on Water

This is an area of significant strength at TAMU and an area of great need for the future of the Texas industry. Areas identified for increased support include zero-runoff systems, impaired water usage (grey water), impaired water treatment, best practices by zip code, environmental regulations based on good science, availability of adequate water of high quality, reduced pesticide usage through integrated pest management, and efficient energy systems.

Marketing

Marketing is a universal need in the floriculture industry. Identifying consumer wants and needs and then developing innovative products and programs to meet them is important and necessary for a strong, sustainable industry.

Efficient Production Systems

Producing more high-quality plants that are desired by consumers at lower cost is key to a strong, sustainable industry as well. A myriad of factors affect this area. Approaches to reduce escalating energy costs are an immediate and crucial need. New products, the development and wise use of new automated greenhouse growing systems and new production approaches are important also.

Implementation Plan

Objective 1 **Increase funding** for our research and extension programs in floriculture and related areas. The overall sustainable funding goal is \$1 million per year, to be achieved by 2007.

Goals:

- Increase earmarked federal funding going to National Floriculture and Nursery Crop Initiative of USDA-Agricultural Research Service and obtain an additional \$300,000/yr of the increase for TAMU Floriculture. Current TAMU participation is in the Floriculture Pest Management area at a level of \$100,000/yr. New funding would go primarily to Environmental Sustainability – Water with some increase in the current Pest Management effort. We are working closely with our TAMU System Washington representative to achieve this goal and have had favorable response from key Texas legislators. Achieve this goal in 2006.
- Increase grant and contract funding from state and federal water and environmental agencies by 50%. This will be done by identifying fiscal resources and linking faculty teams with the resources to obtain necessary funding. Targeted agencies include, but are not limited to, the Texas Water Development Board, Texas Commission on Environmental Quality, Texas Water Resources Institute, U.S. Environmental Protection Agency. Achieve in 2006 with 20% increases for the next three years.
- Work with industry and industry associations to explore approaches to broad industry participation in funding key research and extension efforts that directly serve the industry. Increase funding by 25%. Achieve in 2006 and 2007.
- Work with industry and faculty to develop an organizational plan for a funded Center of Excellence at TAMU and a Southwest Center of Excellence. It is envisioned that these Centers will be broader than the scope of the Chair, encompassing the entire “green industry”. Achieve in late 2006 or 2007.

- Explore other endowment targets. 2007 and beyond.

Objective 2 Increase partnerships (a) among TAMU faculty on a disciplinary and multidisciplinary basis, (b) with faculty at other universities nationally and internationally, (c) with the floriculture industry and (d) with state and federal associations and agencies, and (e) with industry publication editors.

Goal:

- Partnerships are most easily established where there is mutual benefit and where fiscal support is increased as a result of the partnership. Opportunities will be pursued where these criteria are met. Our target is three new or enhanced partnerships in 2006 and two additional ones per year for the next three years.

Objective 3 Increase numbers of top-quality undergraduate and graduate students in floriculture.

Goal:

- The target is a 50% increase over the next four years. This will be done through enhanced student recruitment efforts working with floriculture faculty, and by strengthening the current student/employer internship program.

Objective 4 Increase program recognition for the TAMU floriculture program.

Goals:

- Establish a Distinguished Lecture Series in the International Floriculture area. This has been done; our first Distinguished Lecture will be held in April, 2006. We intend to have two lectures per year, one in the Spring and one in the Fall.
- Increase news releases and high-impact stories concerning significant events and advances by 50% in 2006 and 25% per year for the next three years.
- Encourage an increase in peer-reviewed faculty publications in refereed journals by 25% by 2007.
- Encourage an increase in articles in industry publications by 25% by 2007.
- Continue to enhance the Chair Newsletter, published on a bimonthly basis and distributed nationally and internationally. Ongoing.
- Encourage increased participation and leadership in national and international professional societies and meetings and in key industry association events, providing resources as appropriate. The target is 20% increase per year. Ongoing.

- Centers of Excellence. Achieve in late 2006 or 2007.

Objective 5 Increase vitality and productivity of programs in the priority areas of emphasis by securing resources and building teams of key individuals to address the priorities and obtain results that “make a difference” for the industry and the consumer.

Goals:

- **People Development**
 - (a) Conduct a student/employer internship workshop to focus on increased student and employer participation in successful internship program. This will be held in Spring, 2006. Increase the number of students participating in formal internship programs by 25% per year until 90% of all students have an internship experience while at TAMU.
 - (b) Develop bilingual, easy-to-use training tools for entry-level workers in the greenhouse/nursery industry. This will be a team effort involving faculty and industry. Target for completion is 2006, with continuing enhancements on an ongoing basis.
 - (c) Develop and teach an advanced undergraduate/graduate course in leadership development.
 - (d) Support other enumerated programs in Areas of Emphasis related to People Development.
- **Environmental Sustainability with focus on Water.** Funding will be sought for research and extension efforts in the areas indicated under this heading in the preceding Areas of Emphasis section. This will entail a strong partnering effort with faculty in Biological and Agricultural Engineering and the Texas Water Resources Institute and support increased focus toward “green industry” needs. The target is two new grants per year for the next four years.
- **Marketing and Efficient Production Systems.** Opportunities for funding and contributions in these areas will be identified and pursued on an ongoing basis. The focus will be on enhanced economic competitiveness and profitability for the industry by better meeting consumer desires.

SOWING THE SEEDS FOR EXCELLENCE
A Vision and Accompanying Strategic Plan for the
Department of Horticultural Sciences
January, 2005

Executive Summary

The Department of Horticultural Sciences has a long history of success in research, teaching, and extension and has been viewed as one of the strongest horticulture departments in the nation. For this to continue, we need a vision and strategic plan with a clear set of actions to achieve the plan. Recent budget reductions aside, the Department enjoys an impressive array of human (44 faculty across the state) and physical (a beautiful building, gardens, greenhouses, and a new farm) resources. The Department offers a total of 56 individual courses, 38 of which are at the undergraduate level. The number of undergraduate majors has been fairly stable at around 150, with about 2/3 being female. The Department ranks quite high within COALS in terms of the percentage of total student credit hours taught for non-majors. Students in the Department are active in university, professional, and service activities and programs. Student scholarships typically number 40 to 50 per year with a total value of around \$30,000. Graduate student enrollment in the Department has averaged around 50 in recent years and is relatively stable, despite the limited number of available hard dollar assistantships. Faculty research topics range from biotechnology, molecular biology, postharvest physiology/processing, plant stress physiology, plant nutrition, water conservation/management, plant breeding and genetic improvement, greenhouse/floriculture production, plant establishment and propagation, pecan production, landscape ecology, phytochemicals, and plant/people interactions. Extension programs are strong and address both commercial (e.g. employee training programs, efficient crop production methods, pest management, cultivar evaluation, alternate crops, food safety and value-added processing) and home horticulture (e.g. recommended new landscape plants, gardening, EarthKind management practices, pest control, home food production).

The Department is well-positioned to meet many of the goals of the University's Vision 20:20. We have a strong group of faculty and staff who effectively interact with faculty from other disciplines and departments, as well as with faculty from other institutions around the world. Several faculty members serve on important university committees and/or as leaders in national professional societies. Because of its nature, horticulture is well-positioned to foster cooperation between the arts and sciences (indeed, horticulture is defined as the science and art of cultivating garden plants and crops). We have gardens that are an important resource for the university and community, and thereby improve quality of life in the Brazos Valley. Departmental programs are geared to gaining new fundamental knowledge and then converting it into practical uses for industry and homeowners. Other relevant external issues that impact Departmental planning include: the green industry is the second leading sector in Texas agriculture; our urban population is growing and horticulture can help address several urban needs; gardening is the most popular leisure time activity in the U.S.; increased environmental sensitivity demands

more judicious use of water, fertilizer, and pesticides; increased demand for healthy and safe food and increased recognition of the importance of fruit and vegetables in diets; increasing demand for water resources mandates water conservation and water use efficiency; need for improved cultivars to ensure competitiveness of the Texas horticulture industry.

We have conducted a thorough analysis of our Departmental strengths, weaknesses, opportunities, and threats (i.e. a “SWOT” analysis) and have accordingly developed four strategic overarching objectives for the Department:

- 1.) Increase the number of undergraduate majors.
- 2.) Increase external funding for research and extension programs.
- 3.) Increase documentation of research and extension through increased publication of technical and popular articles.
- 4.) Create a culture of creativity, appreciation, and openness which in turn fosters unity and harmony.

We have also agreed upon four signature or flagship programs towards which we will focus our efforts:

- 1.) Physiology, Genetics, and Biotechnology of Horticultural Plants
- 2.) Foods for Health and Nutrition/Value-Added
- 3.) Efficient and Responsible Environmental Systems (with particular emphasis on water)
- 4.) People/Plant Interactions/Urban & Consumer Horticultural Systems

Based upon the above, we have developed an implementation plan with five major objectives:

- 1.) Increased the number of undergraduate majors in the Department by 100 by 2006
- 2.) Increase external funding for research and extension programs by 50% by 2006
- 3.) Improve documentation of research and extension efforts and their impacts
- 4.) Create a departmental culture of creativity, appreciation and openness and thereby foster unity and harmony – increase faculty involvement, engagement, and team work.
- 5.) Improve marketing and impact evaluation efforts related to Departmental programs.

Specific goals for achieving these objectives are enumerated in the Implementation section of this document.

Appendix B – List of Current Faculty

Faculty at TAMU in College Station

Tim Davis, Professor and Department Head (administration)
Mike Arnold, Associate Professor, Associate Department Head/Graduate Programs (landscape)
Larry Barnes, Professor and Extension Specialist (Plant Pathology)
Carlos Bogran, Assistant Professor and Extension Specialist (Entomology & Plant Pathology)
Dave Byrne, Professor (plant breeding and genetics)
Sam Cotner, Professor (0.5 time) (Extension leadership and methods)
Fred Davies, Professor (plant physiology and propagation)
Bart Drees, Professor (Entomology)
Kevin Heinz, Professor and head, Department of Entomology (Entomology – IPM)
Ed Hiler, Professor and Ellison Endowed Chair in International Floriculture (Horticulture, and Biological and Agricultural Engineering)
Jim Johnson, Distinguished Lecturer and Benz Chair in Floral Design (floral design)
Bruce Lesikar, Professor (Biological and Agricultural Engineering – water)
Dan Lineberger, Professor (information technology)
Dave Reed, Professor (ornamentals, plant physiology)
Terri Starman, Associate Professor (greenhouse and floriculture)
Bill Welch, Professor and Extension Specialist (landscape horticulture)
Doug Welsh, Professor and Extension Specialist (landscape horticulture)
Don Wilkerson, Professor and Extension Specialist (landscape horticulture and public gardens)
Jayne Zajicek, Professor, Associate Department Head/Undergraduate Programs (urban horticulture)

Faculty at Research and Extension Centers

Dallas:

Raul Cabrera, Associate Professor (woody ornamentals)
Steve George, Professor and Extension Specialist (landscape horticulture)
Wayne Mackay, Professor, Associate Resident Director (environmental horticulture)
Cynthia McKenney, Associate Professor (urban horticulture)
James Reinert, Professor (Entomology)

El Paso:

Genhua Niu, Assistant Professor (landscape horticulture, water)

Overton:

Brent Pemberton, Professor (ornamentals)
Scott Ludwig, Assistant Professor (entomology, pathology)
Karl Steddom, Assistant Professor (plant pathology and microbiology)

San Antonio:

Jerry Parsons, Professor and Extension Specialist (vegetables, gardening)

Weslaco:

Yin Tung Wang, Professor (ornamentals, orchid)