Chair Website – http://EllisonChair.tamu.edu

Introductory Comments

I trust that everyone had a wonderful holiday season and that 2006 is off to a great start. We have had much activity and made good progress since our last newsletter in 2005.

Major emphasis is being placed on development of an appropriate Strategic Plan for the Chair. Elements of the plan include a SWOT Analysis, Mission and Vision Statements, a section defining the Role of the Chair, Strategic Objectives, Areas of Emphasis, and an Implementation Plan. A draft has been developed and I am in the process of getting input on this draft from faculty in the ornamental horticulture/floriculture area. Review of this draft and finalization of the plan will be the major agenda item at our upcoming Advisory Committee meeting on **March 9**.

In this newsletter, we provide highlights on two additional floriculture faculty, **Fred Davies** and **Mike Arnold**.

Chair Activities and Progress

Following is a brief summary of Chair activities important to the goals of the Chair.

Internship Workshop - The workshop will be held on **March 8** (10 am to 3 pm) prior to the Advisory Committee Meeting. The purpose is to discuss elements of a successful internship program. Panels will include employers with successful programs, students who have had positive internship experiences, and students and employers who desire successful programs. The product will be brief internship plans, individualized to each employer's needs. This effort is part of our People Development area of emphasis.

Distinguished Lecture Series - Our inaugural Distinguished Lecture will be held **April 11** on the Texas A&M campus. Our Inaugural Lecturer will be Dr. **Charlie Hall** of the University of Tennessee. We hope to make this a major event. Please put the April 11 date on your calendars. More details will be provided as we get closer to the event.

Federal Congressional Initiative - We have developed a proposal to increase funding for the National Floriculture and Nursery Crop Research Initiative. I met with ANLA, SAF, and USDA-ARS leaders in Washington, D.C. in November. I also met with key federal legislators to gain their support. Our goal is to increase the funding for this national initiative and, while doing this, to significantly increase the funding coming to our program at Texas A&M. A follow-up trip is planned in mid-March.

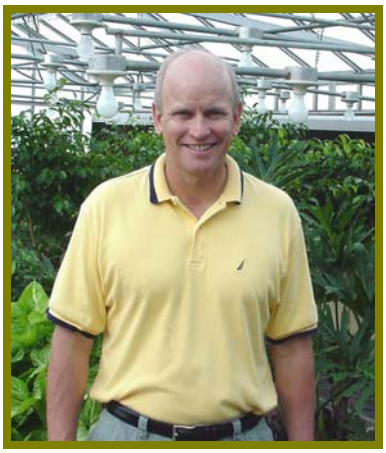
Entry-Level Worker Training - A team of key faculty members is being put together to develop appropriate training tools for entry-level greenhouse workers. We will have involvement from industry to ensure that we are on target with the final product/s.

Environmental Sustainability with focus on Water - There is much activity in this area currently at Texas A&M. We are in the process of cataloging current projects and determining important areas not being addressed. We are also identifying sources of funding for these areas. As you know, **people development** and **environmental sustainability** were identified at our last meeting as the top two areas of emphasis.

I was honored to be recognized as an Honorary Life Member of the Texas Nursery and Landscape Association (TNLA) at their Awards Dinner on January 20 in Westlake. At this event, Dr. **Sam Cotner**, former Head of Horticultural Sciences at TAMU, received the ARP Award, TNLA highest honor. At our Texas A&M Agriculture Conference in January, **Tim Davis**, Department Head, was recognized with the Vice Chancellor's Award for Administration, a fitting recognition of his excellent leadership.

I plan to participate in the Floriculture Forum in Grand Rapids, Michigan on **Feb. 23-26**, continuing to develop our national linkages with faculty and industry leaders.

Floriculture Faculty Highlights



Fred Davies

Fred Davies is a Professor in teaching and research in Horticulture at College Station. His research program has focused on three areas: 1) utilization of beneficial mycorrhizal fungi as biofertilzers, and for enhancing drought and nutrient stress resistance of ornamental plants, 2) assessing the influence of fertilization on insect herbivore population dynamics and crop quality using chrysanthemum and gerbera as model crops, and 3) NASA-funded low atmospheric pressure, controlled environment crop systems.

Davies, Dr. Lucila Carpio and Andy Cartmill recently reported that mycorrhizal fungi increase the efficiency of inorganic, controlled release fertilizers in ornamental container production systems in Texas, and increase rose plant tolerance to bicarbonates in irrigation water. This means lower fertilizer usage and reduced fertilizer run-off, plus the ability of mycorrhizal, ornamental plants to tolerate poorer quality irrigation water.

His research group (Dr. Chuanjiu He, Jay Spiers) in collaboration with Drs. Kevin Heinz, Amanda Chau, Carlos Bogran and Scott Ludwig in Entomology have been funded for the past five years on a USDA-Floriculture and Nursery Research Initiative on "Floriculture and Nursery Crop Production with Reduced Cultural and Pest Management Inputs." To date they have reported that aphids exposed to high fertility regimes depress plant vegetative and reproductive growth, decrease plant photosynthesis and increase ethylene production in reproductive buds and young leaves, thus influencing plant quality and salability. Their results also show that commercially used fertility levels will increase western flower thrips population sizes, which decrease photosynthesis and stomatal conductance and reduces plant quality. A long-term goal of this research is to fine-tune and reduce fertility and pesticide usage in controlling insect pest population levels and enhancing plant quality. A graduate student, Jay Spiers, is studying the effects of nitrogen fertility on the host plant resistance of gerbera to western flower thrips. He is looking at systemic acquired resistance responses of how gerberas respond to thrips and the natural chemicals gerberas produce in the resistance process — such as jasmonic, salicylic acid and phenolics.

There will not be a human presence in Lunar or Martian habitation without Horticulture. Davies, Dr. Chuanjiu He and Dr. Ron Lacey (Biological and Agricultural Engineering) have been collaborating on NASA-funded research ($808,102) since 2001. There are engineering, safety, and cost advantages in growing plants under low pressure conditions. In addition they report that plants do better under low pressure (25 kPa) than earth ambient pressure (101 kPa), in part because low pressure depresses the phytohormone ethylene (which can cause senescence and irregular plant growth), plus dark respiration (at night) slows down, which leads to greater biomass production. This research also has application to controlled crop production systems, sustainable, reduced input production systems and controlled atmospheric (CA) storage systems of horticultural crops.

Further information and pdf files of publications from Davies' research group can be found at http://aggie-horticulture.tamu.edu/faculty/davies/index.html

Dr. & Mrs. Arnold tour the Horticulture building recruiting two future Aggies, sons Saunders and Zane

The goals of Dr. **Mike Arnold's** program are to communicate relevant, current, and dynamic information to our students, investigate problems of relevance to the Texas landscape and nursery industry, and to provide support to our extension colleagues in their outreach programs to the residents of Texas. One of the most cherished traditions of a land grant university is a strong three-way commitment to teaching, service, and research. Dr. Arnold's lab group is active in all three of these endeavors. He teaches three plant materials courses which in which plant usage and ecological aspects are key components. This is particularly important for educating the non-horticulture students, such as Landscape Architecture and Urban Planning, Urban Forestry, and Turfgrass majors who may otherwise have only limited exposure to formal training in our industry.

Dr. Arnold's research group focuses on utilizing sound scientific methodology via application of theories on whole plant physiology to solving problems associated with nursery production that inhibit subsequent establishment of plants in the landscape. In ornamental horticulture, researchers have spent a large proportion of their time and resources focusing on the production process with the endpoint of a saleable product. Alternatively, in other crops much of the emphasis has become focused on the ultimate appeal and performance of products for the end consumer, with the production process being of secondary concern. For instance, most research with effects of growth regulators, fertilizers, container substrates, pruning, etc. have ended with the achievement of a marketable size landscape plant in the greenhouse or nursery, ignoring the impact of these production practices on the plant's post-transplant landscape establishment. This has led Dr. Arnold to concentrate his research program around evaluation and manipulation of components and practices of the production process to improve the landscape establishment (postharvest quality) of landscape plant materials. Some of these studies have addressed the quantification of the effects of current nursery production practices on landscape responses, such as his work with plant growth regulator residual effects (two research papers of the year awards from the *Plant Growth Regulation Society of America Quarterly* resulted from this work).

An obvious next step from quantification of the effects of current practices is to test the effects of potential alterations in the production practices to improve post-transplant performance in the landscape. Examples of this research include

investigations into seed source/provenance selection, avoidance of circling root development with alternative containers or growth regulator applications, micronutrient priming, and various modifications to planting practices. One of the most effective ways to improve landscape plant performance is to develop genotypes that are better adapted to regional conditions. Dr. Arnold's participation in the joint efforts of the Coordinated Marketing and Assistance Program (CEMAP) with colleagues in TAES and TCE, as well as industry partners, have resulted in studies associated with the development of landscape plants with superior performance capabilities for regional landscapes.

The second overall field of investigation of Dr. Arnold's lab group was born out of necessity for treating the runoff from our research nursery. Finding little information on available options for reducing their nitrate discharge, they teamed up with colleagues in agricultural engineering and plant pathology to investigate the use of constructed wetlands for treating captured nursery runoff for eventual discharge or reuse. This work is continuing with investigations of ozonation technology as a way to sanitize nursery runoff for reuse or discharge. These interdisciplinary teams will be needed to solve complex problems faced by today's nursery and landscape industries and to successfully compete for external and internal funds in the future. Undergraduate and graduate student participation are vital components of their working groups and the interdisciplinary approaches help the students to learn to attach problems from varied perspectives. Dr. Arnold also serves in an administrative role as Associate Head for Research and Graduate Studies with the TAMU Department of Horticultural Sciences.

Concluding Comments

Our students continue to excel and make us proud. Our TAMU Horticulture Club team won the overall competition at the recent Southern Region ASHS meeting in Orlando, Florida. Divisions in the competition included greenhouse, floral and foliage; woody ornamentals; fruit and nut crops; and vegetable crops. Our annual Career Fair will be held on **March 1**. This event provides companies the venue to visit with students about internships and full-time employment following graduation.

Upcoming Events

Floriculture Forum, Grand Rapids, Michigan	February 23-26
Internship Workshop, Texas A&M University, College Station	March 8
Chair Advisory Committee Meeting, TAMU, College Station	March 8-9
SAF Congressional Days, Washington, D.C.	March 20-21
California Pack Trails	April 1-12
Distinguished Lecture in International Floriculture TAMU, College Station	April 11
Seeley Conference, Cornell University, Ithaca, NY	June 24-27

Mission of the Ellison Chair

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.

Tammy Landry, Editor/Program Coordinator
Ed Hiler, Ellison Chairholder
204C Horticulture/Forest Science Building
College Station, Texas 77843-2133
979-458-3277

t-landry1@tamu.edu *e-hiler@tamu.edu*