ARRI Distinguished Lecture Series

This series was initiated and is run by the Moncrief-O'Donnell endowed Chair. Top Scientists from around the world visit ARRI, significantly expanding the reputation of UTA. This year’s visitors include:

- V. Kucera, President, International Federation of Automatic Control; Dean of Engineering, Czech Technical Institute.
- P. Fleming, Vice President, Int. Federation of Automatic Control; Editor-in-Chief, Int. Journal of Systems Science; Pro-Vice-Chancellor for External Affairs, University of Sheffield, UK.
- O. Kaynak, UNESCO Chair of Mechatronics, Bogaziki Univ., Istanbul; Past President IEEE Industrial Electronics Society; Vice President, IEEE Neural Networks Society.
**Nonlinear Control Algorithms.** Neural Networks significantly improve the response time and accuracy of systems including vehicle autopilots, aircraft control systems, industrial positioning systems, robots, and DoD military platforms. This year two Ph.D. students and 2 Masters students were graduated. Two books are nearing completion.

**SIGNIFICANT EVENTS THIS YEAR**
- $600,000 in new funding was received.
- Two top Ph.D. students and 2 masters students were graduated.
- Three International Visiting Scientist were hosted from China, Italy, and USA.
- Four journal papers, 3 book chapters, and 18 conference papers were published.
- Lewis was invited to deliver keynote at 4 international events.
- Organized the ARRI Distinguished Lecture Series to invite international scientists to UTA to increase its visibility.
- Received $100K from NSF and a company for the Wireless Sensor Networks Lab at ARRI.
- Three new textbooks in progress.
- Established international relations with Singapore to set up joint educational/training programs in Hard Disk Drive Control and Factory Automation.
- Lewis was appointed to three international editorship positions.

**Keynote Speech Invitations**
Lewis was invited to deliver keynote plenary talks at three international conferences:
- International Symposium on Neural Networks, Dalian, China.
- Int. Symposium on System Structure and Control, Oaxaca, Mexico.
- Int. Conf. Control & Automation, Budapest.
- Int. Joint Conf. Neural Networks, Montreal, Canada.

**DFW LOCAL IMPACT - PATENTS AND TECHNOLOGY TRANSFER TO U.S. SMALL BUSINESSES**
ACS has contributed to the reputation within the scientific community of both UTA and Dallas/Ft. Worth. Lewis is listed in the Ft. Worth Business Press top 200 Leaders. He served as Founding Chairman of the DFW IEEE Control Systems Chapter, which won the national best chapter award in 1994. He was selected as Fort Worth Engineer of the Year by the IEEE Section in 1995. We have received four U.S. patents and filed one more. We have received significant funding from NSF, ARO, Texas State, and the DoD SBIR program to work with local and national industry. This has enhanced the competitiveness of DFW and U.S. companies in the area of feedback control systems, automation, MEMS, and Wireless Sensor Networks.

**AWARDS**
Lewis is listed in:
- Who's Who in the World
- Who's Who in America
- Emerging Leaders in America
- Who's Who in Science and Engineering
- Who’s Who Among America’s Teachers

**INTERNATIONAL ACTIVITIES**
This year we received $17K in off-site supplementary funding for R&D with National University of Singapore for research in Hard Disk Drive Control and Helicopter Control.

The objective is to train students for research in important industry-relevant areas, and to enhance the reputation of UTA internationally. Most hard disk drive companies today operate out of Singapore.

Our patented supervisory controller was used in a warehouse automation project at Singapore's Changi International Airport.

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**EDITORSHIPS**
Dr. Lewis was selected as:
- Editor, Marcel-Dekker book series on Control Engineering.
- Editor, Transactions of the Royal Institute of Measurement and Control.
- Editor, Optimal Control Applications and Methods, John Wiley Journal.

**Mexico/USA Activities in MEMS Microsystems**
Micro-electro-mechanical Systems (MEMS) are the next step in the Silicon Revolution that began with the transistor in 1957. These are devices the size of a human hair that open new doors for in vivo biological health monitoring, sensors for toxic gases and agents, machinery health monitoring, and elsewhere.

Dr. Jose Mireles, former student of Dr. Lewis and currently a Professor at Univ. Autonoma de Ciudad Juarez, and a Research Professor at UTA, has organized significant activities in MEMS:
- Received extra funding from NSF.
- Mexico/Texas joint MEMS Conference, Veracruz, Mexico.
- Texas Systems Day organized at UT El Paso.