THERESA ANNA MALDONADO, PH.D., P.E.
Dean of the College of Engineering & Professor of Electrical Engineering
The University of Texas at El Paso
El Paso, Texas

BUSINESS

The University of Texas at El Paso
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COUNTRY OF CITIZENSHIP: USA
LICENSED PROFESSIONAL ENGINEER: Texas #74832
SECURITY CLEARANCE: Held TS-SCI clearance at Texas A&M University/Texas Engineering Experiment Station

EDUCATION

- PH.D. (ELECTRICAL ENGINEERING W/ MINOR IN MATHEMATICS), GEORGIA INSTITUTE OF TECHNOLOGY, 1990.

Ph.D. Advisor: Dr. Thomas K. Gaylord, Regents' Professor, Julius Brown Chair Professor
Research Areas: Anisotropic & gyrotropic optical materials and waveguides, nonlinear optics, electro-optics, integrated optics, fiber optics, diffractive optics, thin films, electromagnetics. Support:
Army Research Office Science and Technology Fellowship Grant in Integrated Optics
Kodak Fellowship in Integrated Optics

- M.S.E.E. (ELECTRICAL ENGINEERING), GEORGIA INSTITUTE OF TECHNOLOGY, 1982.
  Support: One Year On Campus (OYOC) Program, AT&T Bell Laboratories.
- B.E.E. WITH HIGHEST HONORS (ELECTRICAL ENGINEERING), GEORGIA INSTITUTE OF TECHNOLOGY, 1981.
- A.S. (MATHEMATICS) MACON JUNIOR COLLEGE (now Middle Georgia State College), Macon, GA, 1979.

EMPLOYMENT

- THE UNIVERSITY OF TEXAS AT EL PASO, JULY 2017 - PRESENT
  College of Engineering
  Dean

- UNIVERSITY OF TEXAS RIO GRANDE VALLEY, JUNE 2015 – JULY 2017
  On sabbatical, Jan. 1 – July 31, 2017
  Founding Senior Vice President for Research, Innovation, and Economic Development, June 2015 – Dec. 2016
  Professor of Electrical Engineering

- TEXAS A&M HEALTH SCIENCE CENTER, OCT. 2014 – MAY 2015
  Special Assistant to the CEO and Executive Vice President
  Professor of Electrical and Computer Engineering (2003 – pres.)

- NATIONAL SCIENCE FOUNDATION, Jan. 2011 – Oct. 2014
  Division Director, Engineering Education and Centers Division, Directorate for Engineering
  Executive Intergovernmental Personnel Act (IPA) from Texas A&M University

- TEXAS A&M UNIVERSITY SYSTEM[1] (Also joint appointments with Texas A&M University), Aug. 2003 – Dec. 2010
  Assoc. Vice Chancellor for Research, Jan 2010-Dec 2010
  Founding Director, Energy Engineering Institute[2], Texas Engineering Experiment Station, Oct. 2009-Dec. 2010
  Deputy Director, Texas Engineering Experiment Station, May 2006 – Oct. 2008
    License holder for the 1MW TRIGA research nuclear reactor and the 5W AGN-201M teaching nuclear reactor
    Chair of the Reactor Safety Board
  Associate Vice Chancellor for Engineering, May 2006 – June 2007 (Title change in June 2007 due to TAMU System reorganization)
  Associate Director, Texas Engineering Experiment Station, Aug. 2003 – May 2006

- TEXAS A&M UNIVERSITY, AUG. 2003 – MAY 2015
  Associate Dean for Strategic Initiatives, Dwight Look College of Engineering, Oct. 2009-Dec 2010
  Interim Vice President for Research, Oct. 2008 – July 2009 (new external VPR hired July 2009)
    Institutional Official for biosafety and for animal care and use
  Executive Associate Vice President for Research, Oct. 2008-Oct. 2009
  Associate Dean for Research, Dwight Look College of Engineering, Aug. 2003 – Oct. 2008
  Professor of Electrical and Computer Engineering, Aug. 2003 – pres.

- THE UNIVERSITY OF TEXAS AT ARLINGTON, AUG. 1990 – AUG. 2003
  Associate Vice President for Research, July 2002 – Aug. 2003
  Founding Director, Institute for Nanoscale Science and Engineering Research and Teaching (INSERT), July 2002 – Aug. 2003
  Associate Dean for Research and Graduate Studies, College of Engineering, June 2001- July 2002
  Professor, Electrical Engineering Dept., Sept. 2001 – Aug. 2003
  Associate Professor, Electrical Engineering Dept., Sept. 1996 – Aug. 2001
  Assistant Professor, Electrical Engineering Dept., Sept. 1990 – Aug. 1996

- NATIONAL SCIENCE FOUNDATION, SEPT. 1999-2001
  Program Director (IPA), Engineering Research Centers Program, Engineering Education and Centers Division, Directorate for Engineering (Other roles listed below)

- A.T.& T. BELL LABORATORIES, ATLANTA, GA., 1980-1986
  Member of Technical Staff, March 1981 – Sept. 1986
  Associate Member of Technical Staff, Jan. – Mar. 1981 and June – Aug. 1980

- SEARS, ROEBUCK, & CO., AUDIT DEPT., WARNER ROBINS, GA, 1977-1979

[1] The Texas A&M University System is comprised of 11 universities, 7 state agencies, and a health science center.
[2] The Energy Engineering Institute, established through the Texas Engineering Experiment Station, has since been renamed the Texas A&M Energy Institute, and it now reports to the Vice President for Research at Texas A&M University, College Station.

HONORS AND AWARDS

- National Science Foundation (NSF) Committee on Equal Opportunities in Science and Engineering (CEOSE), nominated and selected in 2006. Appointed Vice Chair (Feb. 2008-2009) and Chair (2009-2010). CEOSE reports to the U.S. Congress through the NSF Director.
- National Science Foundation Math and Physical Sciences Directorate Advisory Committee, appointed by NSF staff, and CEOSE liaison, Sept. 2006-July 2010.
- Governor's Executive Development Program, State of Texas, nominated and selected participant, 2007.
- Director's Award for Program Management Excellence, awarded by NSF Director Rita Colwell, National Science Foundation, June 2001.
- Director's Award for Collaborative Integration, awarded by NSF Director Rita Colwell, for efforts on the CAREER Coordinating Committee, National Science Foundation, Aug. 2001.
- Certificate of Appreciation for Distinguished Service in the Development of the NSF Program entitled ADVANCE, issued by Deputy Director Joe Bordogna of the National Science Foundation, ADVANCE Coordinating Committee, Feb. 2001.
- Presidential Young Investigator Award, National Science Foundation, 1991-1996. Certificate by Pres. George H.W. Bush.
- 2003 German-American Frontiers of Engineering Session Organizer, Optical Technologies, National Academy of Engineering, May 2003.
- 2002 German-American Frontiers of Engineering Invitee, National Academy of Engineering, April 2002.
- 2001 Frontier of Engineering Invitee, National Academy of Engineering, March 2002.
- Engineer of the Year, IEEE Fort Worth Branch, April 1999.
- Inductee, Inaugural Council of Outstanding Young Engineering Alumni, College of Engineering, Georgia Tech, March 1995.
- The Halliburton Award for Outstanding Young Faculty, College of Engineering, UT Arlington, Feb. 1993.
- The Halliburton Award for Teaching Excellence, College of Engineering, UT Arlington, Feb. 1992.
- Electrical Engineering Outstanding Teaching Award, sponsored by the IEEE and Eta Kappa Nu, Feb. 1991.
- Excellence in Leadership Award, Faculty Advisor UTA Student Branch of the IEEE, Ft. Worth Section of the IEEE, Spring 1991.
- Army Research Office Science and Technology Fellowship Grant in Integrated Optics, Sept. 1986 – Aug. 1989.
- Kodak Fellowship in Integrated Optics, Sept. 1989 – Aug. 1990.
- One Year On Campus (OYOC) Program, AT&T Bell Laboratories, 1981-1982.
- 1981 Electrical Engineering Faculty Award for Most Outstanding Senior Student, Georgia Tech.
- 1978 Most Outstanding Mathematics Student, Macon Jr. College.

ADMINISTRATIVE EXPERIENCE

- **UNIVERSITY OF TEXAS RIO GRANDE VALLEY, (FORMER) FOUNDING SENIOR VICE PRESIDENT FOR RESEARCH, INNOVATION, & ECONOMIC DEVELOPMENT, JUNE 2015 – PRES.**

➢ Transform the academic environment from a primarily teaching culture to an emerging research culture at a new geographically-distributed university of The University of Texas System arising from the blending of two distinct universities (UT Pan American and UT Brownsville) plus a new school of medicine integrated with the main campus and spanning ~100 miles

➢ Put in place, for the first time, a comprehensive research administration office, including sponsored programs, research compliance, technology transfer, laboratory animal program, biosafety program (BSL3), compliance committees (IACUC, IRB, and IBC), export control, shared research infrastructure, etc.

- Established formal extensive training programs for the staff (for the first time)
- Ensured training of the IACUC, IRB, and IBC committees (for the first time)
- Formed the Research Deans Council, comprised of the deans and associate deans for research from seven colleges and the School of Medicine and empowered them to serve as research leaders
- Formed the Council of Principal Investigators, a Texas A&M model, to empower faculty to create their research future at UTRGV
- Engaged economic development officers from across the Rio Grande Valley and launched an initiative to create a regional, bi-national voice for community development
- Nurtured new public-private partnerships with a local hospital and other industries for research and practice
- Partnered with the Federal Research Bank of Dallas on addressing the Digital Divide/broadband access across the low socio-economic communities across the Rio Grande Valley Region
- Co-coordinated the partnership between UTRGV, the Texas Governor's Office, and SpaceX through STARGATE, a radio astronomy technologies research and commercialization program supported by the Texas Emerging Technology Fund (TETF)
- Participated in the development of a new research space plan for a geographically-distributed university that currently has limited research space
- Coordinated with UT System on major initiatives, including STARGATE, marine science, neuroscience, cybersecurity, and advanced manufacturing
- Engaged UTRGV as a member of the National Academies Government-University-Industry Research Roundtable (GUIRR), Washington, DC
- Engaged UTRGV as a founding member of the Education Advisory Board Research Forum, Washington, DC

• TEXAS A&M HEALTH SCIENCE CENTER, Special Assistant to the CEO and Exec. VP, Oct. 2014 – May 2015

Assigned by the CEO to

- Provide leadership across the Health Science Center (HSC) for developing, implementing, and communicating key initiatives – i.e., in research, academics, and operations – on his behalf.
- Assist in transitioning newly appointed members of the senior leadership team and mentoring them, especially for interacting with the main Texas A&M University campus and the System.
- Develop and implement interdisciplinary programs that leverage the emerging partnership with engineering, physical sciences, and the life sciences.
- Lead functional teams or other individuals/groups in developing partnerships with external entities to further strategic initiatives for the HSC.
- Represent the CEO to senior leadership with internal and external audiences.
- Lead the HSC in developing a comprehensive institute-wide policy for space allocation and management, including research (both PI and collaborative shared space), academic, operations, storage, and other.
- Assist the CEO in any other duties as they emerge.

• NATIONAL SCIENCE FOUNDATION

— Division Director (Executive IPA), Engineering Education and Centers Division, Directorate for Engineering, Jan. 2011 – Nov. 2014

Led a division with a ~$130M interdisciplinary research portfolio, which includes Engineering Research Centers (ERC), Nanoscale Science and Engineering Centers (NSEC), the Network for Computational Nanotechnology (NCN), Research in Engineering Education, Broadening Participation in Engineering, and programs in support of developing engineering careers – i.e., Research Experiences for Undergraduates, Research Experiences for Teachers, Research Experiences for Veterans, NSF (Engineering) Graduate Research Fellows in Industry, etc.

Coordinated with other federal agencies; the Executive Branch (OSTP, Cabinet); National Research Council; National Academy of Engineering; National Academies Government-University-Industry Research Roundtable (GUIRR); professional societies; industry; etc. in areas of national importance such as energy; smart health; innovation; advanced manufacturing; K-12 and higher education in STEM; cyberinfrastructure; cyberlearning; nanotechnology; engineering education and careers for Veterans; broadening participation in engineering; and others areas. Managed 25 FTEs directly and several other FTEs indirectly from other divisions for centers oversight.

Research and Innovation. Areas of fundamental (interdisciplinary) research to address national grand challenges continue to be supported through the Engineering Research Centers (ERC) program. Developed strategies to advance the ERC program to impact the innovation space. Embarked on a study to reframe the 30-year old ERC program for the future, including an ERC program leadership reorganization. Partnership with DOE is in place now to co-fund energy-related centers. Partnerships with other agencies (e.g., NIH) and industry (e.g., Semiconductor Research Corp. - SRC) are being considered. Carefully explored the capacity of centers to serve as a 10-year longitudinal platform for implementing potentially impactful engineering education research outcomes and broadening participation strategies of diverse groups and non-traditional students in engineering. Provided oversight of the reconfiguration of the Network for Computational Nanotechnology (NCN) in 2012 for an additional 10 years. Included a partnership with SRC to develop the nanoscale version of the industry standard device simulation tool, Simulation Program with Integrated Circuit Emphasis – i.e, nanoSPICE.

Engineering Education. Worked diligently on new strategic directions for engineering education research and practice with input from academia, industry, professional societies, federal government (agencies and Executive Branch) and NSF staff. Developed and launched the new multi-year Engineering-wide strategy for engineering education: The *Professional Formation of Engineers*, with the FY14/15 pilot program, *Revolutionizing Engineering Departments*. In 2012 served on the inter-agency sub-committee on Undergraduate Education of the Office of Science and Technology Policy (OSTP) Committee on STEM Education (Co-STEM). Served on the NSF working group coordinating with President Obama's Council on Jobs and Competitiveness 10K Engineers (per year) Initiative, with Intel and GE. In 2012 worked with the NSF Education and Human Resources Directorate to establish a Science Across Virtual Institute (SAVI) on STEM education with Finland. Co-authored an invited book chapter on persistence and retention of women and minorities in undergraduate engineering degree programs for the forthcoming Cambridge University Press Handbook of Engineering Education Research (2014).

Engineering Workforce. Reframed the *Broadening Participation in Engineering* program for the Engineering Directorate. Recently appointed by the NSF Acting Director to serve as the NSF point-of-contact for an interagency effort, at the request of the House Committee on Science, to develop/strengthen broadening participation strategies across academia and the federal government. Launched an initiative to define alternative pathways to attract Veterans into engineering and engineering technology degree programs, using the 9/11 GI Bill benefits and leveraging their military training. External (federal, professional societies, and universities) and internal (NSF) partnerships have been established for this effort.

Service. Jan. 2012 – Oct. 2014 served as Chair of the NSF-wide CAREER Coordinating Committee and accompanying activities with the Presidential Early Career Award in Science and Engineering (PECASE) program. Worked as co-chair of the Engineering Directorate (ENG) effort, along with the ENG Deputy Asst. Director, on human resources to evaluate and realign Senior Executive Service (SES) staff, which led to a reorganized management structure. Served on several executive manager search committees in and outside of the Engineering Directorate, including chairing two of them.

Presentations. Presented many talks affiliated with the position, including two Aspen Institute Panels on Advanced Manufacturing workforce (Washington, DC), two World Environment Center panels (Washington, DC), a

panel of national leaders and upper level university administrators on behalf of the National Action Council for Minorities in Engineering (NACME) held at Hewlett-Packard headquarters in Palo Alto, CA, and many others.

• **TEXAS A&M UNIVERSITY AND TEXAS A&M UNIVERSITY SYSTEM**

— **Associate Vice Chancellor for Research (TAMUS), Associate Dean for Strategic Initiatives (TAMU ENG), and Founding Director of the Energy Engineering Institute (TEES), Oct. 2009 – Dec. 2010.**

➢ *Assoc. Vice Chancellor for Research, Texas A&M University System:* provided oversight of research activities of 11 universities, seven state agencies, and one health science center. Three state agencies are in engineering and four are in agriculture. Of the 11 universities one is an Historically Black College and University (HBCU) and four are Hispanic Serving Institutions (HSIs). Activities included coordination of all of the research officers (vice presidents for research at the universities and research officers at the state agencies); research program development; junior faculty development; research experiences for undergraduates to establish a pathway for graduate school at the main TAMU campus; research compliance; export control, etc.

➢ *Assoc. Dean for Strategic Initiatives, Dwight Look College of Engineering, Texas A&M University*: assigned special duties by the Dean of Engineering, particularly establishing the Energy Engineering Institute, working with junior faculty, and working with the PIs of an NSF Engineering Research Center site visit in 2010.

➢ *Founding Director of the Energy Engineering Institute (EEI), Texas Engineering Experiment Station (now, since 2012, the Texas A&M Energy Institute, Texas A&M University):* launched formally in Dec. 2009 by approval of the TAMU System Board of Regents. A major research, development, and commercialization effort in oil & gas, nuclear, electric power and smart grid, energy efficiency, bioenergy/biofuels, wind, solar, process safety, energy policy, economics, and energy education. Ties together 12 academic departments of the Dwight Look College of Engineering plus the Texas Engineering Experiment Station, AgriLife Research, Texas Transportation Institute, Texas Engineering Extension Service, other colleges of Texas A&M University, and other universities in the TAMU System. The Institute also pulls together over 20 existing energy-related centers in the Engineering Program. Early successes include the negotiation and implementation of a major Master Research Agreement and an MOU with Vestas Wind Systems of Denmark ($2.5M); a Master Research Agreement and MOU with Gamesa Wind Corp. of Spain, and a Master Research Agreement with Chevron (bioenergy/biofuel feedstock/conversion processes). Served as the Engineering point-of-contact for the TEES/AgriLife Bioenergy Alliance, established in 2006 to formalize the bioenergy program from feedstock design to bioconversion processes to conventional fuel development (gasoline, biodiesel, and jet fuel). The Bioenergy Alliance continues to operate partially under EEI. A $130M DOE proposal was submitted to the Dept. of Energy Hub Program in 2010 for energy efficient building design (PI: Maldonado) with academic, industry, and community partners from the southern third of the State of Texas. (The proposal was declined in 2011 after joining NSF.) Led a major effort to organize expertise across the TAMU System (all universities, agencies, and health science center) on research, development, deployment, and training to respond to the Deepwater Horizon oil spill in 2010. Expertise ranged from immediate capping of the well to environmental assessment and remediation; health evaluation and treatment; prevention strategies; safety; first responder training; and much more. Established the EEI Energy Club for students, which has grown to a membership of over 100 students. Organized the inaugural (Feb. 2011) EEI Energy Forum (> 200 attendees) with high-level national speakers as well as EEI faculty.

— **Interim Vice President for Research, Oct. 2008 – July 2009, and Executive Associate Vice President for Research, Oct. 2008 – Oct 2009. (TAMU)**

Provided oversight of research and graduate studies programs of 10 colleges at Texas A&M University. Coordinated VPR office roles with the Texas A&M University System and the engineering and agriculture state agencies. Served as Institutional Official for biosafety and for animal care and use programs for TAMU, the

TAMUS Health Science Center, and Texas AgriLife Research (a state agency). Provided oversight of the Institutional Review Board (IRB) and two Institutional Animal Care and Use Committees (IACUC), one small animal and one large animal, for these TAMU System components in Bryan/College Station, Brazos County. Had responsibilities for research centers and institutes, interdisciplinary programs, new construction of research buildings and space assignments, shared equipment infrastructure, research strategies and proposal development, research administration (pre- and post-award), research compliance (grants and contracts, export control, conflicts of interest, time and effort reporting, etc.), intellectual property and commercialization. Brought three new life sciences interdisciplinary buildings to near completion (ILSB, TIGM, and TIPS[3]); provided oversight of proper construction and installation of facilities for animal research and shared infrastructure. Facilitated the accreditation visit for the animal care and use program and launched a national search for a new director of the program. Assessed the current status of and outlined a plan for the future of the TAMU Research Park. Coordinated with some cross-campus focus areas in homeland security (including classified research), life sciences, nanotechnology, and computational science. Oversight of 300 FTEs.

— **Deputy Director of TEES, May 2006 – Oct. 2008, and Associate Dean for Research (TAMU/ENG), Aug. 2003 – Oct. 2008**

➢ *Deputy Director, Texas Engineering Experiment Station (an Agency of the State of Texas with a mission to build research capacity across the State of Texas):* served as the agency chief operating officer and research strategist, participating in the overall management of the agency as well as direction of its research and service missions. Substantial areas of responsibility included oversight of research strategies, development, and administration; the agency's many research divisions, institutes, and centers in College Station and at 16 TEES Regional Divisions at other universities in and outside of the TAMU System; TEES compliance and safety programs; fiscal; and human resources. Research programs span a broad portfolio: materials science and engineering, all areas of energy, nano and nanobiotechnology, computational science, modeling and simulation, process safety, life sciences, water, etc. Emphasis on career development of junior faculty at the 16 TEES regional divisions. (Over 45 CAREER awards were granted to faculty in the TAMU College of Engineering over a five-year period, 4 CAREER awards at other TAMU System universities, and one NSF PECASE award at TAMU-Corpus Christi (an HSI). Four other PECASE awards from other federal agencies were awarded to TAMU Engineering faculty as well as other young faculty awards.) Provided oversight of over 430 FTEs and annual research expenditures of > $100M. Served as license holder of the 1MW TRIGA research nuclear reactor and the 5W AGN-201M teaching reactor as well as intellectual property and technology transfer point-of-contact. Engaged in official discussions and planning during the formation stages of several State of Texas efforts, such as the State Strategies for Advanced Technologies, the Texas Emerging Technology Fund, the Advanced Energy Consortium (headquartered at UT Austin); and the DOE/FutureGen State of Texas proposal.

➢ *Assoc. Dean for Research, Dwight Look College of Engineering, Texas A&M University:* facilitated research activities across the College of Engineering (> 400 faculty in 11 depts. plus one dept co-administered with the College of Agriculture and Life Sciences) emphasizing research for single PIs, small research teams, and large-scale interdisciplinary efforts. Focused particularly on research career development of junior faculty. Coordinated core facilities of shared research equipment primarily with the College of Science and the Vice President for Research. Research portfolio reflected that of TEES. Communicated extensively with industry, federal and state agencies, and the Governor's office.

[3] ILSB: Interdisciplinary Life Sciences Building
TIGM: Texas A&M Institute for Genomic Medicine
TIPS: Texas A&M Institute for Preclinical Studies

— **ASSOCIATE DIRECTOR OF TEES, AUG. 2003 – MAY 2006, AND ASSOC. DEAN FOR RESEARCH, TAMU/ENG**

Held similar roles as the dual roles of Deputy Director and Assoc. Dean for Research, except no direct responsibilities for human resources and for the nuclear reactors.

— **OTHER RELATED TEXAS A&M UNIVERSITY AND TAMU SYSTEM ADMINISTRATIVE ACTIVITIES**

- Research Park Committee, Chair. Documented the past, present, and future opportunities of the Texas A&M University Research Park, Aug. 2008 – Feb. 2009
- Academic Master Plan Research Roadmap Committee, Sept. 2008 – May 2009
- Faculty Advisory Committee, Office of the Vice President for Research, Chair, 2008-2009
- University Research Council, Chair, 2008-2009; Engineering representative, Sept. 2003 – Aug. 2007
- Research Administration Shared Services Committee
- Intellectual Property Constituency Committee
- Chancellor's Diversity Council of The Texas A&M University System
- Council of Principal Investigators
- TAMU Sigma Xi Executive Board, member, through 2009
- TAMU Nanotechnology Safety Committee, Engineering representative
- TAMU Honorary Degree selection committee –2007
- Research Environment Council, Engineering representative, Sept. 2003 – Aug. 2007

• THE UNIVERSITY OF TEXAS AT ARLINGTON: ASSOCIATE VICE PRESIDENT RESEARCH 2002-03, ASSOCIATE DEAN 2001-02

- Facilitate growing research programs in the College of Engineering and then subsequently across the campus.
- Director, Institute for Nanoscale Science and Engineering Research and Teaching (INSERT).
- Active in congressional initiatives (Strategic Partnership for Research in Nanotechnology – SPRING, Nano-at-the-Border, and the Arlington Technology Incubator). Wrote the proposal to accept the first year congressional funding of $2.5M through DARPA for nano equipment (SPRING) housed at UTA. Part of team of four (UT-Austin, UT-Arlington, UT-Dallas, and Rice) who established the Nano-at-the-Border Initiative to engage Texas border universities (all Hispanic-serving) in nano research and education.
- Active with Dallas/Fort Worth community college systems (Tarrant County, Dallas County, and Collin County) on developing articulation agreements for transfer students. Wrote the proposal and awarded a *joint $1.2M NSF Computer Science, Engineering, and Mathematics Scholarships (CSEMS) grant*, with Tarrant County and Dallas County Community College Systems, for scholarships to students studying engineering and mathematics and for strengthening the transfer process to UTA.
- Engaged UTA into a national network of 17 universities, lead by UCLA, to seek a $70M grant to form the NSF National Nanotechnology Infrastructure Network (NNIN). The UCLA team was one of three finalists. Served as one of seven co-PIs on the reverse site visit team at NSF in Aug. 2003. The UCLA team came in 2nd place behind the Cornell team (the incumbent team of the National Nanofabrication Users Network - NNUN), Jan. – Dec. 2003.
- Active with the economic development groups in Arlington, Dallas, and Fort Worth.

• NATIONAL SCIENCE FOUNDATION: PROGRAM DIRECTOR 1999-2001

- Engineering Research Centers – primary responsibility – direct comprehensive oversight of six centers, including ERC competition, extensive site visit reviews, cooperative agreement preparation, post-award management, continuous communication with ERC directors throughout each fiscal year. Led three ERC critical year reviews in one year, requiring subsequent extensive paperwork toward new cooperative agreements. *Received Director's Award for Program Management Excellence, NSF Director Rita Colwell, one of two awarded to Engineering program directors, Aug. 2001*.

- Nanoscale Science and Engineering Centers (NSEC), co-chair FY01 inaugural competition – Engineering Directorate representative in coordination with the co-chair (Ulrich Strom) from the Division for Materials Research of the Math and Physical Sciences (MPS) Directorate. Included extensive internal review of over 90 center proposals, organized external review panels, reverse site visit of finalists, and award paperwork/cooperative agreements
- Nanoscale Science and Engineering Coordinating Committee, Engineering Directorate representative, 1999-2001 Development and oversight of the three nano programs: Nanoscale Exploratory Research (NER), Nanoscale Interdisciplinary Research Teams (NIRT), and Nanoscale Science and Engineering Centers (NSEC). Worked with Dr. Mihail Roco, a Senior Advisor for Nanotechnology at NSF and a leader in the formation of the National Nanotechnology Initiative in 2001.
- CAREER Coordinating Committee, Engineering Directorate representative, 1999-2001. Major revision of the solicitation with in-reach communication to NSF leadership and program directors. *Received Director's Award for Collaborative Integration, NSF Director Rita Colwell, Aug. 2001*
- IGERT (Integrative Graduate Education and Research Traineeships) Coordinating Committee, Engineering Directorate representative, 1999-2001
- ADVANCE*:* Increasing the Advancement of Women in Academic Science and Engineering Careers, Coordinating Committee that developed the new program, Engineering Directorate representative, 1999-2001. *Received Certificate of Appreciation for Distinguished Service in the Development of the NSF Program entitled ADVANCE, NSF Deputy Director Joe Bordogna, Aug. 2001*.
- Research Experiences for Undergraduates, coordinated the program for the Engineering Directorate
- Science of Learning Centers Coordinating Committee that developed new program, Engineering Directorate representative, 2000-2001
- POWRE (Professional Opportunities for Women in Research and Education) Coordinating Committee, Engineering Directorate representative, 1999-2000
- Distinguished Teaching Scholars Coordinating Committee, Engineering Directorate representative, 2000-2001.
- Served on Director's (Colwell) committee to outline future directions for international research.
- Participated in site visits/reviews of Science and Technology Centers (STC); Materials Research Science and Engineering Centers (MRSEC); and Industry/University Cooperative Research Centers (I/UCRC)

PROFESSIONAL ACTIVITIES

• RELATED EXTERNAL ACTIVITIES WHILE AT TEXAS A&M (UNIVERSITY-RELATED AND PERSONAL SERVICE)

- Chair, Task Force to explore the launching of a new journal, *Annals of Engineering*, by the Executive Director of the American Association for Engineering Education (ASEE). The journal is intended to be an outlet for researchers to publish their results at the convergence of multiple disciplines (e.g., Engineering Research Centers).
- Chair, Committee on Equal Opportunities in Science and Engineering (CEOSE), reports to the U.S. Congress through the NSF Director.

  Led the completion and issuance of the biennial report to Congress with wide dissemination across the federal agencies
- NSF Directorate of Math and Physical Sciences Advisory Committee (MPSAC), Fall 2006-pres., CEOSE liaison

  Chair of MPSAC Subcommittee on Energy, Fall 2009-pres. Led to the Sustainable Energy Pathways program

  Member, Working Group, Matter by Design: completed white paper for MPS Asst. Dir.'s consideration

  Chair, Division of Materials Research Breakout Group

  Member, Search Committee, Division Director, Materials Research
- Invited Member, Bioenergy Research Committee, Texas Agriculture Commissioner, prepare a report on the status and future directions of bioenergy in Texas, 2010

- Executive Board Member, Consortium for the Commercialization of Electric Technologies (CCET) – a consortium of industries (utilities, suppliers, end users of electricity), non-profits, government agencies, 2006 – 2010
- Chair, External Advisory Board, NSF Science & Technology Center, "Materials and Devices for Information Technology Research," Director: Dr. Larry Dalton, University of Washington (lead university), 2008 – 2010
- External Advisory Board, NSF Materials Research Science and Engineering Center on Graphene, Georgia Tech, Oct. 2009-Dec. 2010
- External Advisory Board, School of Electrical and Computer Engineering, Georgia Institute of Technology, 2004 – 2010
- Co-Chair, Program Committee, The Academy of Medicine, Engineering, and Science in Texas (TAMEST) meeting, "The Business of Fueling the Future," March 27-28, 2008.
- Coordinate with the State of Texas Governor's office in developing statewide programs, with other universities and industry, in nanotechnology (including the Texas Alliance for Nanotechnology TxAN State Lab), bioenergy, and wind energy research and economic development as well as education. Also, heavily engaged in the State Strategy for Advanced Technologies (SSAT) initiative by the Governor's Office in 2005-2006.
- The Wind Alliance (a multi-state partnership in wind energy), TAMU point-of-contact, with universities; industry; the Governor's office; and several state agencies, 2008 – 2010.
- Indian Institute of Technology – Madras: formalized a MOA for collaborative research in intelligent transportation systems and discuss ideas for collaborative research in other areas (e.g., offshore technologies, optical communication networks, security technologies), in Chennai, India, March 2007.
- External Advisory Board, NSF Nanoscale Science and Engineering Center, "Center for Biological and Environmental Nanotechnology," Rice University, Director: Dr. Vicki Colvin, 2004- 2010
- External Advisory Board, Georgia Tech /NSF ADVANCE Cross Disciplinary Initiative for Minority Women Faculty (CDIMWF), PI: Dr. Gilda Barabino, 2007 – 2010
- Search Committee, Arbutus Chair in Distributed Engineering Education, Georgia Tech School of Electrical and Computer Engineering, June 2006 – July 2007.
- Search Committee, Dean of Engineering, Prairie View A&M University, Jan. – July 2007.
- Research Valley Partnership Business Steering Committee, Bryan – College Station, Oct. 2005 – 2006.
- Greater Houston Partnership Energy Collaborative, a group of industry and universities in the region to develop an energy strategy beyond oil and gas. Works closely with the City of Houston and the Governor's Office.
- Organizer and Host, NanoSummit 2007: *The Rising Stars of Texas*, a statewide meeting featuring keynote speakers, junior faculty presenters (by invitation) from seven Texas universities, and industry, Aug. 2007.
- Administrative sponsor for Nanotechnology and Nanoscience Student Assoc. (NaNSA), 2006-2010
- Advanced Energy Consortium (AEC). As part of the Statewide Strategy for Advanced Technologies, worked with the Bureau of Economic Geology at UT Austin and SEMATECH to explore the formation of the AEC with oil & gas company members, 2005.
- FutureGen, a $1B Dept. of Energy project to build a near-zero-emissions fossil fuel power plant, TAMU engineering coordinator to gather input for the Texas FutureGen proposal to the Dept. of Energy, 2005-2006.

OTHER ACADEMIC, PROFESSIONAL, AND ADMINISTRATIVE ACTIVITIES

- **NATIONAL LEVEL**

- Committee of Visitors, National Science Foundation Engineering Education and Centers Division, Feb. 2010.
- NSF Science and Technology Centers Blue Ribbon Panel, Dec. 2009.
- NSF GK-12 panel, Aug. 2008.

- NSF Science and Technology Center Site Visit, Center for Multi-Scale Modeling of Atmospheric Processes, Colorado State University, May 2008
- NSF Research Infrastructure Improvement (RII) Panel, Feb. 2008.
- NSF Industry/University Cooperative Research Centers review panel, June 2007.
- Committee of Visitors, National Science Foundation Engineering Education and Centers Division, March 2007.
- NSF Industry/University Cooperative Research Centers review panel, June 2006.
- NSF Integrative Graduate Education and Research Traineeships, June 2006.
- Journal of the Optical Society of America A Review Committee, Optical Society of America, Spring 2004 – Oct. 2005.
- Women in Engineering Programs and Advocates Network (WEPAN), invited Board member, May 2004 – May 2005.
- National Academy of Engineering Committee on Diversity of the Engineering Workforce (CDEW), invited, March 2004 – Sept. 2005.
- Optical Society of America/SPIE Hands-On-Optics National Advisory Board, invited, Jan. 2004 – 2007.
- National Academy of Engineering, German-American Frontiers of Engineering (GAFOE) 2003 Session Organizer, Optical Technologies, May 2003.
- NSF Partners for Research and Education in Materials (PREM) Site Visit Team, Functional and Nanostructured Materials, U. Puerto Rico – Mayaguez with U. Wisconsin - Madison, Oct. 2005.
- NSF Science and Technology Center Site Visit Team, Chair of Team, Materials and Devices for Information Technology Research, U. Washington, June 2005.
- NSF Industry/University Cooperative Research Centers (I/UCRC), Nov. 2004.
- NSF Engineering Research Center Site Visit Team, Packaging Research Center, Georgia Tech, Sept. 04.
- NSF GK-12 Fellowships, Aug. 2004.
- NSF Integrative Graduate Education and Research Traineeships, July 2004.
- NSF Engineering Research Center for Extreme Ultraviolet Science and Technology Site Visit Team – U. Colorado, June 2004.
- NSF ADVANCE Site Visit Team – Georgia Tech, June 2004.
- NSF Nanoscale Science and Engineering Centers Reverse Site Panel, May 2004.
- NSF (national) CAREER Workshop, co-organizer, at NSF, Jan. 2004. 100 participants.
- NSF Industry/University Cooperative Research Centers (I/UCRC), Dec. 2003.
- NSF Partnerships for Research and Education in Materials (PREM), Review Panel Chair, Nov. 2003.
- NSF Electrical and Communications Systems Division Panel, Feb. 2003.
- NSF Nanotechnology in Undergraduate Education Panel, Feb. 2003.
- NSF Integrative Graduate Education and Research Traineeships Panel, Dec. 2002.
- NSF Research Infrastructure Improvement (RII) Panel, Aug. 2002.
- NSF Math and Science Partnerships (Comprehensive) Panel, June 2002.
- NSF Centers for Research Excellence in Science and Technology (CREST) Panel, March 2002.
- NSF Combined Research and Curriculum Development (CRCD) Panel, Feb. 2002.
- NSF Integrative Graduate Education and Research Traineeships Site Visit, U. Colorado – Boulder, Dec. 2001.
- NSF Combined Research and Curriculum Development (CRCD) Panel, July 1999.
- NSF Gender Equity Panel, June 1999.
- NSF Centers of Research Excellence in Science and Technology (CREST) Panel , May 1999.
- NSF Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM) Panel, May 1999

- NSF Collaboratives to Integrate Research and Education (CISE) Panel, June 1998.
- NSF Integrative Graduate Education and Research Training (IGERT) Panel, Feb. 1998.
- NSF Instrumentation and Laboratory Improvement (ILI) Panel, Jan. 1998.
- National Visiting Committee member for the NSF–sponsored project, "Establishing New Traditions: Revitalizing the Curriculum," Dept. of Chemistry, The University of Wisconsin–Madison, 1995-2000. Purpose: to evaluate the progress of this 5-year project for the undergraduate chemistry curriculum at UW. Evaluation meeting held each Jan./Feb.
- IEEE Antennas and Propagation Society Conference, refereed papers for the Session on Frequency Selective Surfaces, 1998 IEEE AP-S/URSI Symposium, June 1998.
- NSF Materials Research Science and Engineering Centers (MRSEC) Panel, Nov. 1997.
- Secretary, Dallas/Fort Worth Professional Chapter IEEE Lasers and Electro-optics Society (LEOS), Sept. 1994-Sept. 1996.
- NSF Instrumentation and Laboratory Improvement (ILI) Panel, Jan. 1997.
- Technical Chair, TechCon'98, Summer 1996-Spring 1998, IEEE Region 5 Meeting, Fort Worth, April 1998. Responsible for organizing the entire technical program.
- Session Chair, Digital Delivery Systems, Session S47, IEEE International Conference on Communications, Dallas, June 1996.
- NSF Undergraduate Course and Curriculum Development and Faculty Enhancement Programs, July 1996.
- NSF Instrumentation and Laboratory Improvement (ILI) Panel, Jan. 1996.
- NSF Small Business Innovative Research (SBIR) Review Panel, Sept. 1995.
- NSF Small Business Innovative Research (SBIR) Review Panel, Sept. 1994.
- Panelist, National Academy of Engineering Workshop on "Academic Engineering Research in a Changing World: Issues, Problems, and Solutions," Irvine, CA, Feb. 18-20, 1994.
- NSF Young Investigator Awards (NYI) Panel, March 1993.
- NSF Instrumentation and Laboratory Improvement (ILI) Panel, Feb. 1993.
- Member, American Association of University Women (AAUW) Gender Equity Roundtable, Sept. 1992.
- Testified at the National Women's Business Council Hearing Dec. 6, 1991 held at UTA on the role of education to attracting women into engineering careers. (This national hearing was set up by the U.S. Congress.)

• REGIONAL LEVEL

- Research Valley Partnership Business Steering Committee, Bryan – College Station, Oct. '05 – pres.
- Co-Chair Energy Advanced Technologies Working Group, State Strategy for Advanced Technologies (SSAT), Texas Technology Initiative (TTI), Dec. '04 – June '05.
- Reviewer, Gulf Coast Regional Center for Innovation and Commercialization (RCIC), Houston Technology Center, Texas Emerging Technology Fund (TETF), Sept. '05 – pres.
- Texas Technology Initiative Advanced Energy Consortium, with Sematec and UT Austin Bureau of Economic Geology, March '05 – pres.
- Greater Houston Partnership, Feb. '04 – Pres.
- External Advisory Board, NSF Nanoscale Science and Engineering Center, "Center for Biological and Environmental Nanotechnology," Rice University, June 2004.
- VP, Houston Chapter of the IEEE Lasers and Electro-Optics Society Chapter, 2004 – 2005.
- Coordinator, Strategic Partnership for Research in Nanotechnology (SPRING) – with UT Austin, UT Dallas, and Rice University, 2001 – 2003.
- Coordinator, Nano@Border, SPRING initiative with UT Pan American and UT Brownsville, 2003.

- Judge organizer, Texas State Science and Engineering Fair, Spring 2002.
- Technical Program Chair, TechCon'98, Summer 1996-Spring 1998, IEEE Region 5 Meeting, Fort Worth, April 1998. Responsible for organizing the entire technical program of 5 parallel tracks of over 30 speakers: Telecommunications, Microelectronics, Computers/Software, Power Engineering, and Systems.

• UNIVERSITY LEVEL

- TAMU Research Environment Council (REC), Sept. 2003 – 2010
- TAMU University Research Committee (URC), Sept. 2003 – 2010
- TAMU Life Sciences Building Advisory Committee, April 2004 – Dec. 2005.
- TAMUS Health Science Center College of Medicine, Dean Colenda's Council of Principal Investigators, Dec. '04 – March 2005.
- Director, Institute for Nanoscale Science and Engineering Research and Teaching, University of Texas at Arlington (INSERT), 2002 – 2003.
- Organizing committee for the UTA Symposium for Undergraduate Research and Creative Activity (SURCA), University of Texas at Arlington, 1996-1999.
- Member, Search Committee for Director of the Center for Mexican American Studies, University of Texas at Arlington, 1997.
- Director, development of the Physics/Electrical Engineering course sequence in optics and optical engineering, funded by a NSF ILI grant, University of Texas at Arlington, 1995-pres.
- Member, UTA Convocations Committee (for student award ceremony), University of Texas at Arlington, 1995–1996.
- Panelist, "Women and the University," as part of the UTA Charrette, University of Texas at Arlington, March 1994.
- Member, UTA Self-Study Mission Committee, University of Texas at Arlington, Spring 1994 – Spring 1995.
- Member, Faculty Advisory Committee to interview the final candidates for UT Arlington President, University of Texas at Arlington, 1992.
- Mentor, NSF Alliance for Minority Participation in Research (NSF AMP) Program, 1993–1994.
- Mentor, Ronald E. McNair Research Fellowship Program, Summers 1991 and 1993.
- Invited Lecturer, UTA Physical Science Institute, Dept. of Education, July 1991.

• DEPARTMENT/COLLEGE LEVEL

- Texas Telecommunications Consortium Fellowship and Scholarship Selection Committee, UT Arlington, Sept. 1998-Sept. 1999.
- Chair, EE Dept. Undergraduate Curriculum Committee, Sept. 1998-pres. Also includes preparation for ABET 2000 evaluation.
- Organizer and Moderator of the Forum, "Women in High Tech Careers: Issues and Opportunites," panel of all 7 female faculty in the College of Engineering plus one female faculty from the College of Business, Engineer's Week, Feb. 1999.
- Member, EE Dept. Chair Search Committee, Spring 1998.
- Member, Search Committee for the Dean of Engineering, Jan. – June 1996.
- Workshop Presenter, American Assn. of University Women, Expanding Your Horizons in Science and Mathematics Career Conference, for females in grades 7 and 8, March 7, 1998.
- Developing and implementing distance education program with south Texas, 1998.
- Participant, Gateway Engineering and Preview Engineering, June 1998.
- Member, Search Committee for EE Telecommunications professor, Fall 1996–pres..

- Co-Director, NSF Research Experiences for Undergraduates Program, 1991–99.
- Elected Member, Electrical Engineering Faculty Advisory Committee, 1995.
- Co-coordinator, Junior Engineering Technical Society (JETS) competition at UTA, Feb. 1991.
- Workshop Presenter, American Assn. of University Women, Expanding Your Horizons in Science and Mathematics Career Conference, for females in grades 7 and 8, Feb. 5, 1994.
- Invited interview for an IEEE videotape advertising the organization, Dec. 4, 1995.

U. S. PATENT

R. Magnusson, T. A. Maldonado, et al., "Nonlinear optical guided mode resonance filter," Patent no. US 7,218,817 B2, issued May 15, 2007.

RESEARCH INTERESTS

Areas: Anisotropic optical materials and waveguides, nonlinear optics, electro-optics, integrated optics, fiber optics, diffractive optics, thin films, electromagnetics.

Recent Research Activities: Fabrication and characterization of nonlinear optical waveguides and thin film structures (e.g., filters) of dye-doped polymer systems by ionic self-assembled monolayers (ISAMs) techniques; analysis of optically anisotropic waveguides and devices; complete characterization of hybrid modes (propagation constants and field profiles) in nonlinear biaxial waveguides; rigorous coordinate-free electromagnetic theory of second-harmonic generation in inorganic and organic electro-optic biaxial materials/waveguides; design of counter-propagating quasi-phase match devices for frequency conversion and all-optical switching, guided mode resonant filter design, photonic antennas.

FUNDED GRANTS (ALL AT U. TEXAS – ARLINGTON)

1. **T. A. Maldonado**, Presidential Young Investigator, National Science Foundation, 1991–1996. Award: $25,000/yr for 5 yrs. = $125,000 plus $37,500/yr for 5 yrs. = $187,500. Total Award: $312,500.

2. **T. A. Maldonado**, Advanced Research Program Grant, "Nonlinear Electro-optic Bulk and Waveguide Devices," Texas Higher Education Coordinating Board, Jan. 1994–Dec. 1995. Total Award: $165,834.

3. **T. A. Maldonado**, The Welch Foundation, "A General Theoretical and Numerical Study of Second Harmonic Generation in Nonlinear Biaxial Inorganic/Organic Materials," June 1993–May 1996. Total Award: $96,500.

4. **T. A. Maldonado**, Chancellor's Council Grant, Office of the Chancellor, UT System, "Characterization of Semiconductor Waveguide Modulators." 1991–92, Total Award: $7000.

5. **T. A. Maldonado**, R. Magnusson, T. Black, and P. Draper, National Science Foundation Instrumentation and Laboratory Improvement (ILI), "Undergraduate Laboratory: Fundamentals and Design of Optical Systems." Sept. 1, 1995–Aug. 31, 1997. Total Award: $200,000.

6. **T. A. Maldonado** and R. Magnusson, "Acquisition of Instrumentation for Characterization of Optical Materials and Devices," National Science Foundation Academic Research Infrastructure (ARI), Sept. 1995–Aug. 1998. Total Award: $254,400.

7. R. Magnusson and **T. A. Maldonado**, "Development of Dielectric Microwave-Antenna Aperture Filters," Technology Development & Transfer Program, Texas Higher Education Coordinating Board (50% match from E-Systems/Greenville), Jan. 1996-Dec. 1997. Total Award: $100,000.

8. R. Magnusson and **T. A. Maldonado**, Research Experiences for Undergraduates, National Science Foundation, June 1996–May 1999. Total Award: $227,105.

9. R. Magnusson and **T. A. Maldonado**, Research Experiences for Undergraduates, National Science Foundation, June 1993–May 1996. Total Award: $159,774.

10. R. Magnusson and **T. A. Maldonado**, Research Experiences for Undergraduates, National Science Foundation, June 1991–Nov. 1992. Total Award: $58,000.

11. **T. A. Maldonado** and T. D. Black, "Nonlinear Optical Processes Using Organic Poled-Polymer Waveguides," Texas Higher Education Coordinating Board, Jan. 1998-Dec. 1999. Total Award: $164,430.

12. R. Magnusson and **T. A. Maldonado**, "Optical Waveguide-Grating Fabrication Technology Development," Texas Higher Education Coordinating Board, Jan. 1998-Dec. 1999. Total Award: $197,900.

13. R. Magnusson and **T. A. Maldonado**, "Research Scholars in Electrical Engineering," National Science Foundation, June 1, 1999–May 31, 2004. Total Award: $478,855.

14. T. A. Maldonado, "Nonlinear Optical Fibers Fabricated by Ionic Self-Assembly," National Science Foundation Professional Opportunities for Women in Research and Education (POWRE). Total Award: $75,000, Jan. '02 – Jan. '04.

15. S. Ardekani, **T. A. Maldonado**, E. Kolesar, and C. Lewis, "Sensors for Remote Detection of Alcohol Vapors," Advanced Technology Program Consortium, Texas Higher Education Coordinating Board, Jan. 2000-Dec. 2001. Total Award: $179,500.

16. R. Magnusson and **T. A. Maldonado**, "Development of Photonic Antenna Technology," Technology Development & Transfer Program, Texas Higher Education Coordinating Board (50% match from Raytheon), Jan. 2000-Dec. 2001. Total Award: $100,000.

17. T. A. Maldonado and R. Magnusson, "Development of Nanostructured Photonic Devices with Nonlinear Organic Materials," Texas Higher Education Coordinating Board Advanced Research Program, Jan. 2002 – Dec. 2003. Total Award: $196,000.

18. M. Pomerantz and **T. A. Maldonado**, "Nonlinear Optical Devices Fabricated by Ionic Self-Assembled Monolayer Techniques," Texas Higher Education Coordinating Board Advanced Technology Program, Jan. 2002 – Dec. 2003, Total Award: $250,000.

19. T. A. Maldonado, C. Ward, S. Harris, and V. Hawkins, "Collaborative Research: Pathways to Closing the Gap in North Texas," National Science Foundation Computer Science, Engineering, and Mathematics Scholarships (CSEMS), Sept. 15, 2002 – Sept. 14, 2006, Total Award: $1,196,250 ($398,750 for UTA; $398,750 for Tarrant County College; and $398,750 for Mountain View College).

20. T. A. Maldonado, "Nanostructured Magnetics, Electronic, and Optical Materials and Devices," DARPA BAA03-02, May 1, 2003 – April 30, 2008, Total Award: $2,350,000.

TOTAL AWARDED: $6,769,048
(Total w/out community colleges: $5,971,548)

CASH GIFTS RECEIVED (MATCHING FUNDS FOR NSF PRESIDENTIAL YOUNG INVESTIGATOR)

1. Dr. Alan Saxe, Assoc. Professor of Political Science, UTA. Matching funds for the NSF Presidential Young Investigator Award, 1991. Total: $10,000.

2. Anonymous donor. Matching funds for the NSF Presidential Young Investigator Award, 1991. Total: $16,000.

3. Ms. Anne Ponder Dickson, President of Pressworks Publishing Co., Dallas, TX. Matching funds for the NSF Presidential Young Investigator Award. 1992, Total: $1000.

TOTAL CASH GIFTS: $27,000

TOTAL FUNDS AWARDED: $6,796,048
(Total w/out community colleges: $5,944,548)

CONSULTING CONTRACT

T. A. Maldonado, AT&T Bell Laboratories and Wright-Patterson AFB, "Analysis of a birefringent lens system for a single mode fiber coupler," 1995.

PROFESSIONAL SOCIETY MEMBERSHIPS

Institute of Electrical and Electronics Engineers (IEEE), Senior Member
IEEE Lasers and Electro-optics Society (LEOS), Senior Member: Secretary of the Dallas/Fort Worth Chapter (1994-96) and Vice President of the Houston Chapter (2004 – pres.)
Optical Society of America (OSA)
Association for the Advancement of Science (AAAS)
Society of Photo-Optical Instrumentation Engineers (SPIE)
American Society for Engineering Education (ASEE)
Eta Kappa Nu
Tau Beta Pi
Sigma Xi
Phi Beta Delta International Scholars
Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
Registered Professional Engineer in Texas #74832, March 1993.

REVIEWER EXPERIENCE

National Science Foundation: numerous panels, individual proposals, and center site visit teams (see below)
National Institutes of Health
American Chemical Society
U.S. Civilian Research and Development Foundation
Nanoletters (ACS)
IEEE J. Lightwave Technology (IEEE)
Applied Optics (OSA)
Optics Letters (OSA)
Optical Engineering (SPIE)
Optics Express
J. Optics A
J. Optical Society of America A (OSA)
J. Optical Society of America B (OSA)
IEEE Transactions on Antennas and Propagation
IEEE Transactions on Education
Langmuir
Thin Solid Films

JOURNAL PUBLICATIONS

- G. D. Landry and T. A. Maldonado, "A generalized analysis of counterpropagating quasi-phase-matching," JOSA B, vol. 21, no. 8, pp. 1509 – 1521, Aug. 2004.

- G. Purvinis, P. S. Priambodo, M. Pomerantz, M. Zhou, T. A. Maldonado, R. Magnusson, “Second-harmonic generation in resonant waveguide gratings incorporating ionic self-assembled monolayer polymer films,” Opt. Lett., vol. 29, no. 10, pp. 1108-1110, May 2004 .
- P. S. Priambodo, T. A. Maldonado, and R. Magnusson, “Fabrication and characterization of high-quality waveguide-mode resonant optical filters,” Appl. Phys. Lett., vol. 83, no. 16, pp. 3248 – 3250, Oct. 20, 2003.
- Pomerantz, M.; Maldonado, T. A.; Magnusson, R.; Purvinis, G.; Dallas, N.; Zhou, Z.; Punyapu, A.; Le, K.; Priambodo, P. S. "Ionically Self-Assembled Polymeric Thin Films for Second Order NLO Applications," *Polym. Mater.: Sci. Eng.* 2004, *90*, 189-190.
- S. Tibuleac, R. Magnusson, T. A. Maldonado, P. P. Young, and T. R. Holzheimer, “Dielectric frequency-selective structures incorporating waveguide gratings,” IEEE Trans. Microwave Theory and Techniques, vol. 48, no. 4, pp. 553-561, April 2000.
- G. D. Landry and T. A. Maldonado, “Pulse simulations of a mirrored counterpropagating QPM device,” Optics Express, vol. 5, no. 8, pp. 157 – 187, Oct. 11, 1999.
http://www.opticsexpress.org/oearchive/source/12096.htm
- G. D. Landry and T. A. Maldonado, “Switching and second harmonic generation using counterpropagating quasi-phase-matching in a mirrorless configuration,” IEEE J. Lightwave Techn., vol. 17, no. 2, pp. 316-327, Feb. 1999.
- G. D. Landry and T. A. Maldonado, “Second harmonic generation and cascaded second order processes in a counterpropagating quasi-phase-matched device,” Appl. Opt., vol. 37, no. 33, Nov. 1998.
- D. Shin, S. Tibuleac, T. A. Maldonado, R. Magnusson, “Thin-film optical filters with diffractive elements and waveguides,” Optical Engineering, vol.37, no.9, pp.2634-46, Sept. 1998.
- G. D. Landry and T. A. Maldonado, “Efficient nonlinear phase shifts due to cascaded second-order processes in a counterpropagating quasi-phase-matched configuration,” Optics Letters, vol.22, no.18, pp.1400-2, 15 Sept. 1997.
- T. A. Maldonado and M. Ciumac, “Hybrid mode phase matching and effective nonlinear coefficient for second harmonic generation in biaxial waveguides,” J. Lightwave Technology, vol.15, no.9, pp.1747-55, Sept. 1997.
- G. D. Landry and T. A. Maldonado, "Gaussian beam transmission and reflection from a general anisotropic multilayer structure," Appl. Opt., vol. 35, no. 30, 20 Oct. 1996.
- G. D. Landry and T. A. Maldonado, "Zigzag analysis of interference effects in an arbitrarily oriented biaxial single layer," J. Opt. Soc. Am., vol. 13, no. 8, pp. 1737-1748, Aug. 1996.
- T. A. Maldonado and T. K. Gaylord, "Hybrid guided modes in biaxial slab waveguides," IEEE J. Lightwave Technol., vol. 14, no. 3, pp. 486-499, March 1996.
- G. D. Landry and T. A. Maldonado, "Ray tracing through a two ball uniaxial sapphire lens system," IEEE J. Lightwave Techn., vol. 14, no. 3, pp. 509-512, March 1996.
- G. D. Landry and T. A. Maldonado, "Complete method to determine transmission and reflection characteristics at a planar interface between arbitrarily oriented biaxial media," J. Optical Society of America A, vol. 12, no. 9, pp. 2048-2063, Sept. 1995.
- T. A. Maldonado and T. K. Gaylord, “Light propagation characteristics for arbitrary wavevector directions in biaxial crystals by a simple coordinate-free approach,” Appl. Opt., vol. 30, pp. 2465-2480, 20 June 1991.
- T. A. Maldonado and T. K. Gaylord, “Accurate method to determine the eigenstates of polarization in gyrotropic media,” Appl Opt., vol. 28, pp. 2075-2086, 1 June 1989.
- T. A. Maldonado and T. K. Gaylord, “Electro-optic effect calculations: simplified procedure for arbitrary cases,” Appl. Opt., vol. 27, pp. 5051-5066, 15 Dec. 1988.

INVITED BOOK CHAPTERS

- G. Lichtenstein, H. L. Chen, K. A. Smith, and T. A. Maldonado, "Retention and Persistence of Women and Minorities Along the Engineering Pathway in the U.S.," Handbook of Engineering Education Research, Chapter 14 (A. Johri and B. Olds, eds.), New York: Cambridge University Press, 2013.
- G. Purvinis and T. A. Maldonado, "Electro-Optic Modulators" in Handbook of Optics, 3rd Ed., invited, 2010.
- T. A. Maldonado, "Electro-Optic Modulators" in The Optics Encyclopedia, Vol. 1. (Th. G. Brown, K. Creath, H. Kogelnik, M.A. Kriss, J. Schmit, J. J. Weber, eds.). Weinheim, Germany: WILEY-VCH Verlag GmbH & Co. KGaA, 2004.
- T. A. Maldonado, "Electro-optic modulators" in Handbook of Optics, 2nd Ed. (M. Bass, E. W. Van Stryland, D. R. Williams, and W. L. Wolfe, eds.). New York: McGraw-Hill, 1994.

OTHER PUBLICATION

- L. S. Goldberg, T. A. Maldonado, and J. C. Rutledge, "NSF Grant Opportunities for Prospective Graduate Students and New Faculty," (Invited) Professional Develop/Education Issues section, Optics and Photonics News, Aug. 2000.

CONFERENCE PAPERS/PRESENTATIONS

- M. Pomerantz, M. Zhou, T. A. Maldonado, G. Purvinis, N. Dallas, K. Le, A. Punyapu, P. S. Priambodo, R. Magnusson, "Second order NLO applications using ionically self-assembled polymer thin films," 228th National Meeting & Exposition of the American Chemical Society, Philadelphia, PA, paper PMSE 530, Aug. 22 – 26, 2004.
- R. Magnusson, Y. Ding, P. S. Priambodo, and T. A Maldonado, "Waveguide-mode resonance effects in periodic lattices and their applications: Overview and assessment of the state of the art," 2004 ICO International Conference on Optics & Photonics in Technology Frontier, Makuhari Messe, Chiba, Japan, 12-15 July 2004 (invited).
- Pomerantz, M.; Maldonado, T. A.; Magnusson, R.; Purvinis, G.; Dallas, N.; Zhou, Z.; Punyapu, A.; Le, K.; Priambodo, P. S. "Ionically Self-Assembled Polymeric Thin Films for Second Order NLO Applications," 227th National Meeting of the American Chemical Society, Anaheim, CA, paper PMSE 144, March 28-April 1, 2004.
- R. Magnusson, Y. Ding, K. J. Lee, D. Shin, P. S. Priambodo, P. P. Young, and T. A. Maldonado, "Photonic devices enabled by waveguide-mode resonance effects in periodically modulated films," Proc. SPIE, Vol. 5225 Nano- and Micro-Optics for Information Systems, edited by Louay A. Eldada, (SPIE, Bellingham, WA, 2003) pp. 20-34 (invited).
- M. Pomerantz, T. A. Maldonado, R. Magnusson, T. Black, "Self-assembled polymeric thin films for second order nonlinear optical applications," 59th American Chemical Society Southwest Regional Meeting, Oklahoma City, OK, Oct. 25 – 28, 2003 (invited).
- N. Dallas, G. Purvinis, A. Punyapu, K. Le, M. Sudduth, T. A. Maldonado, M. Pomerantz, and M. Zhou, "Electro-static self-assembly of nonlinear optical waveguides with minimal surface roughness," Proc. Organic Thin Films for Photonics Applications, Optical Society of America Annual Meeting, Tuscan, AZ, paper WH3, October 5 – 9, 2003.
- K. Le, A. Punyapu, G. Purvinis, N. Dallas, M. Pomerantz, M. Zhou, T. A. Maldonado, "ISAM films on fiber core for photonic applications," Optical Society of America Annual Meeting, Tucson, Arizona, paper WX2, October 5-9, 2003.
- P. P. Young, P. S. Priambodo, T. A. Maldonado, and R. Magnusson, "Simple interferometric fringe stabilization by CCD-based feedback control," Optical Society of America Annual Meeting, Tucson, AZ, paper WJ6, October 5-9, 2003.
- M. Pomerantz, T. A. Maldonado, T. D. Black, D. Johnson, L. K. Waller, G. M. Purvinis, and M. R. Sudduth, "Ionic self-assembled monolayer thin films for nonlinear optical applications," Proc. American Chemical Society, August 2002.

- M. Sudduth, D. Johnson, S. Pelton, S. Fore, T. A. Maldonado, T. D. Black, and M. Pomerantz, “Maker fringe measurements for nonpoled ionic self-assembled thin films,” Proc. Organic Thin Films for Photonics Applications, vol. 64, 2002.

- M. Sudduth, S. Fore, D. Johnson, T. A. Maldonado, T. D. Black, and M. Pomerantz, “Maker fringe measurements of pyrylium salt chromophore-doped polymer for nonlinear optical waveguides,” CLEO Technical Digest, pp. 58-9, May 2001.

- M. Sudduth, S. Fore, D. Johnson, T. A. Maldonado, T. D. Black, and M. Pomerantz,” Second order nonlinear coefficient measurements of ionic pyrylium salt doped PAA,” Abstract. Annual Meeting of the Optical Society of American Technical Digest Series, TuJ1, pg. 72, Oct. 2000.

- S. Fore, M. Sudduth, T. A. Maldonado, and T. D. Black, “New nonlinear chromophore/polymer materials for second-order processes and their characterization and fabrication by ionic self-assembly,” (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper WLL91, 9/99.

- R. Magnusson, T. A. Maldonado, and T. D. Black, "A joint Electrical Engineering/Physics course sequence for optics fundamentals and design," International Conference on Education and Training in Optics and Photonics, Cancun, Mexico, July 28-30, 1999 (invited).

- G. Radloff, and T. A. Maldonado, “Guided modes in lossy anisotropic planar polymer waveguides,” (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper ThAA1, Oct. 1998.

- D. Wawro, T. A. Maldonado, and S. Fore, “Growth of multilayered organic thin films by ionic self-assembly for frequency conversion,” (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper ThPP30, Oct. 1998.

- G. D. Landry and T. A. Maldonado, “Nonlinear phase shifts in a counter-propagating quasi-phase-matched configuration,” (poster) NATO Advanced Study Institute: Advanced Photonics with Second–Order Optically Nonlinear Processes, Sozopol, Bulgaria, Sept. 24–Oct. 4, 1997.

- Gary D. Landry and Theresa A. Maldonado, "Production of nonlinear phase shifts via cascaded second order processes using counter-propagating waves in a unique quasi-phase-matched design", Optical Society of America Annual Meeting, Long Beach, California, October 12-17, 1997.

- Shin D., Tibuleac S., Maldonado T. A., Magnusson R., “Thin-film multilayer optical filters containing diffractive elements and waveguides,” Optical Thin Films V: New Developments. San Diego, CA, USA. SPIE., vol. 3133, pp. 273-86, 30 July-1 Aug. 1997.

- Tibuleac, S., Magnusson, R., Maldonado, T. A., “Microwave waveguide-grating dielectric filters,” IEEE Antennas and Propagation Society International Symposium. 1996 Digest. Held in conjunction with: USNC/URSI National Radio Science Meeting, vol.2, pp. 1240-3, Baltimore, MD, pp. 21-26, July 1996.

- S. Tibuleac, R. Magnusson, T. A. Maldonado, and C. Zuffada, “Direct and inverse techniques of guided-mode resonance filters," IEEE Antennas and Propagation Society International Symposium, Montreal, Canada, July 13-18, 1997.

- T. A. Maldonado and M. Ciumac, "Second harmonic generation in biaxial slab waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper MD6, Oct. 1996.

- M. Ciumac and T. A. Maldonado, "Hybrid modes in nonlinear biaxial slab waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper MD7, Oct. 1996.

- M.-C. Nguyen and T. A. Maldonado, "Electro-optic $KNbO_3$ waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper WGG29, Oct. 1996.

- S. Tibuleac, T. A. Maldonado, and R. Magnusson, "Narrow-linewidth waveguide-grating transmission filters," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper MJJ3, Oct. 1996.

- M. Ciumac and T. A. Maldonado, "Hybrid mode phase–matching and effective nonlinear coefficient for second harmonic generation in biaxial waveguides," APS Texas Section Meeting, UT Arlington, Oct. 1996.

- R. Magnusson, Z. Liu, D. Shin, and T. A. Maldonado, "Optical resonance phenomena in dielectric diffractive layers," APS Texas Section Meeting, UT Arlington, Oct. 1996.

- S. Tibuleac, R. Magnusson, and T. A. Maldonado, "Microwave Waveguide-Grating Dielectric Filters," IEEE AP–S International Symposium and URSI Radio Science Meeting, paper #29-23, Baltimore, MD, July 1996.

- G. D. Landry and T. A. Maldonado, "Ray tracing through a two ball uniaxial lens system in a single mode fiber-to-fiber coupler," (Paper) in Proc. IEEE Lasers and Electro-Optics Society Annual Meeting, paper OFPW5.2, Nov. 1995.

- G. D. Landry and T. A. Maldonado, "Gaussian beam transmission and reflection from biaxial multilayer structures," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper ThU4, Sept. 1995.

- S. Tibuleac, R. Magnusson, S. S. Wang, T. A. Maldonado, and A. E. Oberhofer, "Linewidth broadening mechanisms of guided-mode resonance filters," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper ThHH6, Sept. 1995.

- T. A. Maldonado, "Hybrid guided mode characterization in nonlinear biaxial waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper TuC3, October 1994.

- L. Wu and T. A. Maldonado, "Walk-off of extraordinary waves in nonlinear biaxial media for second harmonic generation," Optical Society of America Annual Meeting Technical Digest Series, paper FA4, October 1994.

- L. Wu and T. A. Maldonado, "Coordinate-free calculational procedure for second harmonic generation in nonlinear biaxial media," Optical Society of America Annual Meeting Technical Digest Series, poster TuEE53, October 1994.

- R. McCright, A. Timberlake, G. Landry, and T. A. Maldonado, "Light propagation in lossy nonlinear biaxial media by a coordinate-free approach," Optical Society of America Annual Meeting Technical Digest Series, poster TuEE54, October 1994.

- L. Wu and T. A. Maldonado, "General type I conversion efficiency for second harmonic generation in biaxial media," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper TuD1, October 1993.

- G. Landry and T. A. Maldonado, "Transmission and reflection characteristics of arbitrarily oriented biaxial layers," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper TuZ4, October 1993.

- T. A. Maldonado and T. K. Gaylord, "Cutoff conditions for hybrid modes in integrated optical anisotropic (biaxial) waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper TuII5, November 1991.

- T. A. Maldonado and T. K. Gaylord, "Characteristics of hybrid modes in biaxial planar waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, paper TuZ6, November 1990.

- T. A. Maldonado and T. K. Gaylord, "Light propagation characteristics in biaxial crystals by a simple coordinate-free approach," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, vol. 18, paper ThG7, October 1989.

- T. A. Maldonado and T. K. Gaylord, "Hybrid guided modes in biaxial dielectric planar waveguides," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, vol. 18, paper WK1, October 1989.

- T. A. Maldonado and T. K. Gaylord, "Electro-optic effect calculations for arbitrary crystal classes, field directions, and wavevector directions," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, vol. 11, paper WG2, October 1988.

- T. A. Maldonado and T. K. Gaylord, "Analytic expressions to determine the eigenstates of polarization in gyrotropic media," (Abstract) Optical Society of America Annual Meeting Technical Digest Series, vol. 11, paper WK1, October 1988.

INVITED PRESENTATIONS/LECTURES

TECHNICAL

- T. A. Maldonado, "Overview: Functionalized Polymers for Nonlinear Optical Waveguides," University of North Texas, Feb. 19, 2003.
- T. A. Maldonado, "ISAM Technology: From Material Functionality to Devices," Nanotechnology at the Border Technical Symposium, The University of Texas at Brownsville, May 3, 2002.
- T. A. Maldonado, "Microphotonics to Nanotechnology," (Invited) IEEE MetroCon 2001, Arlington, TX, Sept. 2001.
- T. A. Maldonado, "Research and Education in Nonlinear Optical Waveguide Technology," National Science Foundation, May 17, 1999.
- R. Magnusson, D. Shin, Z. S. Liu, S. Tibuleac, P. P. Young, S. J. Kim, D. Wawro, T. A. Maldonado, and K. Alavi, "Semiconductor lasers and modulators incorporating diffractive optical elements," MetroCon 1999, Fort Worth, TX, April 22, 1999. (Invited)
- T. A. Maldonado, "Telecommunications Curriculum at UTA," Monterry, Mexico, Dec. 1, 1998.
- T. A. Maldonado, "Advances in Electro-optics Research," International Symposium of Electronic and Telecommunications Engineering, Universidad Iberoamericana, Torreon, Coah., Mexico, Oct. 31, 1997.
- T. A. Maldonado, "Nonlinear optical processes in waveguides and quasi-phase match structures," IEEE TechCon'98, Fort Worth, TX, April 1998. (Invited)
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), Oct. 2000. Session Chair for Junior Faculty Issues and for Opportunities for Graduate Student Support.
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), Oct. 1998. Invited session chair for Graduate Student Paper Design Contest.
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), Oct. 1997. Invited panelist for Junior Faculty Issues.
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), Oct. 1996. Spoke on my research program in nonlinear electro-optic materials and waveguides, on developing an interdisciplinary optical systems design laboratory funded by NSF, and on the NSF REU program in EE.
- U. Missouri–Rolla, Dept. of Electrical Engineering Technical Seminar, April 1996. Spoke on my research program in nonlinear electro-optic materials and waveguides.
- Wright–Patterson AFB, OH, Oct. 1995. Final presentation for the consulting contract on analyzing birefringent spherical lenses for single mode optical fiber couplers.
- Dept. of Electrical and Computer Engineering, U. Texas at Austin, May 1994. Spoke on my research program in nonlinear electro-optic materials and waveguides.
- Dept. of Electrical and Computer Engineering, U. Alabama, Jan. 1994. Spoke on my research program in nonlinear electro-optic materials and waveguides.
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), Jan. '93. Spoke on my research program in electro-optic materials and waveguides.
- Dallas/Fort Worth IEEE Antennas and Propagation Society, Oct. 1992. Spoke on my research program in anisotropic and gyrotropic materials and waveguides.
- Fort Worth Chapter of the Association of Old Crows, Electronic Warfare Technical Symposium, General Dynamics, Invited Speaker, Feb. 1993. Spoke on my research program in anisotropic and gyrotropic materials and waveguides.
- Dept. of Electrical and Computer Engineering, U. Texas at Austin, April 1991. Spoke on my research program in anisotropic and gyrotropic materials and waveguides.

NONTECHNICAL

- NSF ADVANCE Career Success Workshop, Rice University, April 2007.
- May's Executive Women's Summit, May's Business School, TAMU, April 2007.
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) – invited keynote presentation to audience of over 2500 attendees, Tampa, FL, Oct. 2006.
- NSF LSAMP Mini-Symposium, Prairie View A&M University, Nov. 2006.

(Too many to list between 2002 and 2006.)

- "Societal Implications of Nanoscience and Nanotechnology," (invited) Arlington Chamber of Commerce Workforce Development Committee, Feb. 2002.
- Invited presentations at the annual Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) conferences, including Sept. 2002.
- Invited keynote presentation at the 9th Annual Compact for Faculty Diversity Institute on Teaching and Mentoring Conference, sponsored by the Southern Regional Education Board, Arlington, VA, Oct. 2002.
- Invited panelist at the U. Maryland – Baltimore County Graduate Horizons meeting, Ph.D. Career Paths Panel, Nov. 2002.
- Invited speaker, 2003 Women in Science and Engineering (WISE) conference, Texas A&M, Feb. 2003.

POSTDOCTORAL FELLOW SUPPORTED

Dr. Mariana Ciumac, Ph.D. Theoretical Physics, Institute of Atomic Physics, Bucharest, Romania, Jan. 1996–Aug. 1998. Theoretical analysis of nonlinear biaxial waveguides and of nonlinear guided mode resonance filters.

DISSERTATIONS/THESES SUPERVISED AND SUPPORTED (GRADUATE)

Ph.D.

- L. Wu, "Rigorous Analysis of Second Harmonic Generation in Organic Media with Large Optical Birefringence and Dispersion, Ph.D. Dissertation, March 1996.
- G. Landry, "Analysis and Characterization of Hybrid Modes and Phase-Matching Conditions in Nonlinear Biaxial Optical Waveguides" Ph.D. Dissertation, August 1998. Now at Finisar, Advanced Optical Components Division, Dallas, TX.
- Georgeanne Purvinis, Ph.D., "Theory and experiment of linear and nonlinear optical media and waveguides with anisotropy and dichroism," The University of Texas at Arlington, March 2004. Now at Battelle Memorial Laboratories, Columbus, OH.

M.S.

- Natalya Dallas, M.S. Thesis, "Fabrication and characterization of planar waveguide structures for second harmonic generation using ionically self-assembled nonlinear organic materials," The University of Texas at Arlington, April 2004. Now a Ph.D. student at Stanford University as a NSF Graduate Research Fellow.
- Ajay Punyapu, M.S. Thesis, "Organic ionic self-assembled monolayer cylindrical waveguides and gratings for photonic applications," December 2003.
- M. Rege, "Ionic Self-Assembly: Processing, Fabrication, and Characterization," Dec. 2002. (She completed her Ph.D. under another advisor. She is now at the Air Force Research Labs.)
- G. Landry, "Transmission and Reflection Characteristics of Biaxial Interfaces in Single and Multilayer Structures," MSEE thesis, Nov. 1993.

- G. Talagery, "Simulation of Wave Propagation in Anisotropic Slab Waveguides Using the Beam Propagation Method," MSEE thesis, May 1994. (In the Dallas area)
- C. Mazur, "Modeling Light Propagation Through Liquid Crystal Cells Using a 4 x 4 Matrix Technique," MSEE thesis, July 1994. (In the DC area)
- C-Y. Cheng, "Second Harmonic Generation by Reflection from AlGaAs/GaAs Structures," MSEE thesis, Aug. 1994. (In the San Jose, CA area)

OTHER GRADUATE STUDENTS ADVISED AND SUPPORTED

- D. Wawro, research on poled-polymer nonlinear optical waveguides and ISAM technology development, 1997-99, graduated with MSEE degree, Dec. 1999.
- S. Csutak, research on electro-optic modulators in $KNbO_3$ and on nonlinear guided mode resonance filters, 1997-98, transferred to UT Austin.
- S. Tibuleac, assisted in developing the nonlinear optics laboratory, graduated with the Ph.D. under dissertation advisor, Robert Magnusson, Aug. 1999.
- R. McCright, developing theory to model mode propagation in lossy, biaxial planar waveguides, graduated with MSEE degree (non-thesis) and went to industry, 1996.
- A. Timberlake, research on $KNbO_3$ electro-optic modulator design, graduated with MSEE degree (non-thesis) and went to industry, 1996.
- S. Chandramohan, assisted in preparing the book chapter for the Handbook of Optics and configuring and maintaining the computer network for the EO Research Group, graduated with a MSEE degree (non-thesis), 1994.
- S. Nadimi, “Configured and maintained the computer peripherals and network for the EO Group, graduated with MSEE degree in 1996 and Ph.D. degree in 1999 under Prof. John Bredow.

UNDERGRADUATE STUDENTS (SENIOR PROJECTS)

- N. Vega, "Analysis of Anisotropic Waveguides by the Beam Propagation Method," 5/92, EE 4391. GEM (Graduate Education for Minorities) recipient to attend CalTech, 1992.
- L. Vega, "Hybrid Guided Modes in a Biaxial KTP Waveguide," 4/94, EE 4391.
- M. Farhoud, "An Investigation of Index Profile Characterization, Modal Propagation, and Frequency Doubling in He^+ Implanted $KNbO_3$ Waveguides," 12/94, EE 4391. Recipient of the UTA College of Engineering Award for her presentation "Modal Propagation in He^+ Ion Implanted $KNbO_3$ Waveguides," April 1995. Awarded a GTA at MIT beginning Fall 1995.
- M.C. Nguyen, "$KNbO_3$ Electro-optic Modulators" 12/96, EE 4391.
- S. Fore, “Nonlinear Optical Fiber with Ionic Self-Assembled Cladding” 12/98, EE 4344.
- Ann Ni, optical fingerprint detection system using holographic crystals, BSEE, 1999. Won first place in Fort Worth area of IEEE Region 5 paper design contest.
- Karletta Parsons, optical fingerprint detection system using holographic crystals, BSEE, 1999. Won 2nd place (nationally) in the poster competition of the National Society of Black Engineers, 1999.

OTHER UNDERGRADUATE STUDENTS SUPPORTED BY RESEARCH GRANTS

- D. Johnson, synthesizing chromophores for integrating into host polymers for nonlinear optical waveguides fabricated by ionic self-assembly, Dec. 1999 – May 2002. BSEE and BS Chem (double major), May 2002. REU and other support.

- T. Boone, designed experiment for 3-D characterization of nonlinear crystal phase-match orientations for frequency conversion, BSEE, 1995. REU and other support.
- D. Wawro, experiments in fabricating nonlinear optical waveguides in polymer-based materials, BSEE 1997. REU and other support.
- P. Young, assisted in setting up laboratory experiments to characterize nonlinear optical waveguides, BSEE 1997. REU and other support.
- H. Souissi, organized databases for the research projects, summer 1998. REU support.
- J. Yarbrough, assisting in assembling an electric field poling apparatus for experiments in dye-doped polymer nonlinear waveguides, Jan. 1998 – pres. REU and other support.
- J. Venturi, designed and assembled an electric field poling apparatus for experiments in dye-doped polymer waveguides, Jan. – Aug. 1998. REU support.
- S. Fore, set up an m-line experiment for characterizing nonlinear optical waveguides; also built an automated dipper to fabricate waveguides by ionic self-assembly, 1998. REU and other support.
- Rachel Daniels, assisted in building an automated dipper to fabricated waveguides by ionic self-assembly, Feb. – Aug. 2000. REU support.

NON-UTA UNDERGRADUATE STUDENTS ADVISED THROUGH THE NSF REU PROGRAM

- Phillip Steinmetz, University of Missouri at Rolla, NSF Research Experiences for Undergraduates, frequency doubling of high power laser diodes, Summer Scholar, Summer 1996.
- Phillipia Simmons, Alabama A&M, NSF Research Experiences for Undergraduates, optical neural networks, Summer Scholar, Summer 1994.
- Stacey Henderson, Texas Woman's University, NSF Research Experiences for Undergraduates, investigated the change in effective thickness with frequency doubling on mode properties in nonlinear biaxial waveguides, Summer Scholar, Summer 1993.
- Alex Contreras, U. Texas at El Paso, NSF Research Experiences for Undergraduates Summer Scholar, investigated the change in effective thickness with frequency doubling on mode properties in nonlinear biaxial waveguides, Summer 1993.
- Carlos Gameros, U. Texas at El Paso, NSF Research Experiences for Undergraduates Summer Scholar, investigated the change in effective thickness with frequency doubling on mode properties in nonlinear biaxial waveguides, Summer 1993.

STUDENT COMPETITIONS/ACTIVITIES

- Natalya Dallas, NSF Graduate Research Fellowship for Ph.D. studies. Now at Stanford University.
- Georgeanne Purvinis, 1st place, oral presentation, Graduate Symposium, UT Arlington, Spring 2002.
- Derek Johnson, 1st place, oral presentation, Symposium for Undergraduate Research and Creative Activity, UT Arlington, Spring 2001.
- Karletta Parson, "Optical Recognition System for Fingerprints," 2nd place National Society of Black Engineers, March 1999.
- Ann Ni, "Use of Wavelets in Optical Recognition System for Fingerprint Detection," 1st in IEEE Region 5 Area Student Paper Design Contest, will compete in final IEEE Region 5 competition, April 1999.
- Judge, Graduate Student Paper Contest, IEEE MetroCon '96, Feb. 1996.
- Lizette Vega**,** SHPE National Career Conference Design Contest, Chicago, IL, Feb. 1993. (SHPE Faculty Advisor)

- (As SHPE Faculty Advisor) Attended the SHPE National Career Conference with 4 student participants of the Design Contest (including Norma Vega), which placed 3rd nationally ($3000 award), Phoenix, AZ, Feb. 1992. Assisted the team in writing the report and in preparing and rehearsing for the presentation.
- (As IEEE Faculty Advisor) Prepared Margaret Hoffman for the IEEE Fort Worth Section Student Paper Contest, which she won. Attended IEEE Region 5 Meeting with her, where she placed 4th in the region, April, 1992. Encouraged her to compete in the National IEEE Industrial Applications Society Student Paper Contest, 1992. She won second place nationally.
- (As IEEE Faculty Advisor) Nominated John DuBay for the 1991 IEEE Region 5 Larry K. Wilson Student Activities Award, which he won, March 1991.
- (As SHPE Faculty Advisor) Attended the SHPE National Career Conference with 9 UTA students, Houston, TX, Fall 1990.

STUDENT ORGANIZATIONS/PROGRAMS ADVISED

- Faculty Advisor, Society of Hispanic Professional Engineers (SHPE), Sept. 1996-1998.
- Faculty Advisor, Institute of Electrical and Electronics Engineers (IEEE), Sept. 1990-Jan. 1993.
- Faculty Advisor, Society of Hispanic Professional Engineers (SHPE), Sept. 1990-March 1993.
- Co-Director, National Science Foundation Research Experiences for Undergraduates, 1991-99.

PH.D. DISSERTATION COMMITTEES SERVED

(not updated)

Cesar Heyaime, Fall 2002
Jose Mireles, Summer 2002
Alina Ponce, (Social Work), Summer 2003
Napadon Kaewkamnerd, Fall 2000
Orachat Sukmarg, Fall 2000
Dongho Shin, Spring 2000
Scott Ikenaga, Spring 2000
Rasko Selmic, Spring 2000
Zhongshan Liu, Dec. 1999
Sorin Tibuleac, July 1999
Sayyid Nadimi, Nov. 1998
Gary Landry, July 1998
Christopher Betty, Nov. 1996
Rosemary Edwards, July 1996
Chin-Yuan Hsieh, May 1996
Lin Wu, March 1996
Charles L. Goldsmith, April 1995
Ron Porco, Summer 1994
Brian Jersak, Fall 1993
Young-Gi Kim, Fall 1993
Ali Hafiz, Summer 1993
Rajiv Pathak, Spring 1993
Daniel Gibbs, Fall 1992

M.S.E.E. THESIS COMMITTEES SERVED

(not updated)

Corey Clark, Fall 2002
Sun Kim, Dec. Dec. 1999
Debra Wawro, July 1999
Sorin Tibuleac, July 1996
Oscar A. Valencia Monterrosa, July 1996
Benjamin Boon Tan, Fall 1995
Qing Jiang, Spring 1995
Andrew Logue, Fall 1994
Robert Day, Spring 1994
Mohammed Zamshed Ali, Summer 1994
Li-Tung Wang, Fall 1992
Sayyid Nadimi, Summer 1992
Susan Wang, Fall 1990

COURSES DEVELOPED

EE 5335 Crystal Optics

EE 5301 Advanced Engineering Analysis (restructured course)

EE 4444 Optical Systems Design Capstone (funded by NSF), overseeing the development of this course and Physics 3445 Fundamentals of Optics, to create an interdisciplinary program in optics at UTA

EE 5191 Graduate Seminar

Electrical Engineering Short Course: Optical Engineering. Continuing Education, UTA, with R. Magnusson, May 1992, 1993.

COURSES TAUGHT

EE 5335 Crystal Optics

EE 5336 Integrated Optics

EE 5337 Fourier Optics

EE 5301 Advanced Engineering Analysis

EE 5191 Graduate Seminar

EE 4444 Optical Systems Design Capstone

EE 3319 Electromagnetics II

EE 3317 Linear Systems