# NAI

## National Academy of Inventors

### The University of Texas at Arlington Chapter Launch

October 30, 2014 | College Park Center

UNIVERSITY OF TEXAS ARLINGTON

NAI

NATIONAL ACADEMY OF INVENTORS

On behalf of The University of Texas at Arlington and the Office of Research, I welcome you to the launch of the UT Arlington chapter of the National Academy of Inventors. Thank you for joining us at this exciting and important event. We are delighted to be recognizing so many of our esteemed faculty colleagues for their contribution to UT Arlington's culture of innovation.

The NAI was established in 2010 to recognize and encourage academic innovation. UT Arlington joined as a charter member institution in 2012. Currently, there are over 3,000 individual inventor members and 244 Fellows from more than 200 institutions around the world. More than 140 institutions have established chapters.

UT Arlington currently boasts eight NAI Fellows, more than any other single institution. UT Arlington's NAI Fellows include our President, Dr. Vistasp Karbhari; our Provost, Dr. Ron Elsenbaumer; our Vice President for Research, Dr. Carolyn Cason; the Dean of our College of Engineering, Dr. Khosrow Behbehani; and four of our distinguished faculty members: Drs. Frank Lewis, George Kondraske, Nai Yuen Chen and Robert Magnusson. More than 100 of our faculty members hold one or more patents.

Innovation and entrepreneurship are high on the list of priorities for UT Arlington. One of the guiding aspirations of UT Arlington's strategic plan for the next five years is to lead in innovation, entrepreneurship, and creativity. UT Arlington's strategic objectives include developing a culture and critical infrastructure that embraces and fosters innovation, entrepreneurship, and creativity; supporting and connecting communities of creative scholars; integrating creativity across the curriculum; and establishing structures, campaigns, programs, and initiatives to make this creative culture and its positive impact highly visible. The launch of the UT Arlington chapter of the NAI is part of these initiatives. Our vision for the chapter is to provide opportunity for education, participation, and collaboration.

Thank you again for joining us at the inaugural induction ceremony for UT Arlington's chapter of the National Academy of Inventors.

Carolyn L Cason

Carolyn Cason

Vice President for Research

# The University of Texas at Arlington
# NAI Chapter Launch

Welcome .....Dr. Carolyn Cason

Keynote .....Dr. Vistasp Karbhari, President

Fellow Recognition.....Dr. Vistasp Karbhari, President

Presentation of Inductees ..... Dr. Ronald Elsenbaumer

Reception & Entertainment

## Khosrow Behbehani, PhD
**Dean, College of Engineering**

Dr. Behbehani's research interests include respiratory and anesthesia device design and analysis, microprocessor-based control design for biomedical systems, computer modeling of biomedical systems, modern control theory applications in biomedical engineering and stochastic and deterministic systems.

## Carolyn Cason, PhD
**Vice President for Research, Office of Research**

Dr. Cason is the co-founder of the UT Arlington Smart Hospital, a physical virtual hospital, which serves as a teaching and research and development facility. She created the Genomics Translational Research Laboratory within the College of Nursing and in collaboration with colleagues in the College of Engineering, developed Smart Care (a center dedicated to developing technology to enhance independent living).

## Nai Yuen Chen, PhD
**Distinguished Research Professor, Department of Materials Science and Engineering**

Dr. Chen is a member of the Academy of Medicine, Engineering and Science of Texas. Dr. Chen is an inventor or co-inventor of 126 U.S. patents on novel catalysts, oil refining, and petrochemical and biomass processes.

## Ronald Elsenbaumer, PhD
**Provost and Vice President, Academic Affairs**

Dr. Elsenbaumer's areas of expertise include electrically conductive polymers, environmentally friendly lubricants, materials science of conjugated polymers and mechanistic organic and polymer chemistry.

## Dr. Vistasp Karbhari
**President**

President Karbhari is an expert in the processing and mechanics of composites, durability of materials, infrastructure rehabilitation, and multi-threat mitigation, damage prognosis and structureal health monitoring. He has authored or co-authored more than 460 papers in journals and conference proceedings and edited or co-edited four books.

## George Kondraske, PhD
**Professor, Electrical Engineering**

Dr. Kondraske's research interests include system performance modeling and measurement (particularly applied to the human system and its subsystems), sensor and instrumentation design and measurement system design.

## Frank Lewis, PhD
**Professor, Electrical Engineering**

Dr. Lewis' current research interests include intelligent control, distributed control on graphs, neural and fuzzy systems, wireless sensor networks, nonlinear systems, robotics, condition-based maintenance, micro-electro-mechanical systems (MEMS) control, and manufacturing process control.

## Robert Magnusson, PhD
**Professor, Electrical Engineering**

Dr. Magnusson's expertise encompasses several fields, including periodic nanostructures, nanolithography, nanophotonics, nanoelectronics, nanoplasmonics, optical biosensors and chemical sensors, holography, semiconductor lasers, optical properties of materials, wave propagation in periodic media, and optical signal processing.

## Daniel Armstrong, PhD
**Robert A. Welch Professor, Chemistry & Biochemistry**

Dr. Armstrong is an innovative leader in the fields of separations and mass spectrometry. He is considered the "Father" of micelle and cyclodextrin-based separations and he is one of the world's leading authorities on the theory, mechanism, and use of enantioselective molecular interactions.

## Pranesh Aswath, PhD
**Associate Dean, College of Engineering**

Dr. Aswath is an expert in the areas of deformation, fatigue and fracture of specialty engineering materials, biocompatible materials, and sustainable concrete for structural and transportation applications. His work in the area of synthesis of materials involves the design of new materials using fundamental concepts in chemistry, thermodynamics and materials science.

## Jung-Chih Chiao, PhD
**Professor (Greene and Garrett) , Electrical Engineering**

Dr. Chiao's research interests include MEMS RF and optical devices (RF MEMS and MOEM), medical microdevices sensors, nanofabrication and applications, wavelength-division-multiplexing (WDM) optical components and networking, and microwave and millimeter wave quasi-optical systems and sensors.

## Purnendu Dasgupta, PhD
**Professor (Jenkins Garrett), Chemistry and Biochemistry**

Dr. Dasgupta conducts research in the area of chip-scale instruments; novel detection and data transform schemes in chromatography; green analysis of arsenic in drinking water; rapid analysis of trace heavy metals in atmospheric aerosol to act as conservative tracers; and other topics. The research in Dr. Dasgupta's lab is targeted towards finding the best solution to a problem independent of any specific technique.

## Frank Lu, PhD
**Professor, Mechanical & Aerospace Engineering**

Dr. Lu is an expert in fluid dynamics, aerodynamics, passive and active flow control, shock and viscous phenomena, aerodynamic heating, jets and sprays, supersonic and hypersonic flows, propulsion, energy conversion, power production, detonation, flow visualization, instrumentation and facility development, and data processing.

## Richard Timmons, PhD
**Distinguished Professor, Chemistry & Biochemistry**

Dr. Timmon's major areas of research interest are chemistry of plasma systems, catalysis, coatings technology and surface chemistry.

### Ashfaq Adnan
**Assistant Professor, Mechanical and Aerospace Engineering**
Dr. Adnan's current research and teaching interests encompass solid mechanics, materials science, and nano-bio mechanics. The core focus of his research group is to develop high performance structural materials.

### Dereje Agonafer
**Professor, Mechanical and Aerospace Engineering**
Dr. Agonafer's research expertise focuses on broad areas of electronic packaging, heat transfer, thermal engineering, application of computational techniques to electronic cooling, development of constitutive equations for lead free solders and thermal management of data centers.

### Kambiz Alavi
**Professor and Associate Chair, Electrical Engineering**
Dr. Alavi's areas of expertise include molecular beam epitaxy of compound semiconductors, physics and applications of heterostructures, multiple quantum wells and superlattices for optoelectronic and electronic devices, and magneto-optics and nonlinear optics.

### Erian Armanios
**Professor and Chair, Mechanical and Aerospace Engineering**
Dr. Armanios' research areas include structural analysis, design and damage tolerance of advanced composites; and modeling, stress analysis, testing and failure processes of elastically tailored composites.

### Daniel Armstrong
**Robert A. Welch Professor, Chemistry and Biochemistry**
Dr. Armstrong is an innovative leader in the fields of separations and mass spectrometry. He is considered the "Father" of micelle and cyclodextrin-based separations and he is one of the world's leading authorities on the theory, mechanism, and use of enantioselective molecular interactions.

### Pranesh Aswath
**Associate Dean, College of Engineering**
Dr. Aswath is an expert in the areas of deformation, fatigue and fracture of specialty engineering materials, biocompatible materials, and sustainable concrete for structural and transportation applications. His work in the area of synthesis of materials involves the design of new materials using fundamental concepts in chemistry, thermodynamics and materials science.

### Vassilis Athitsos
**Associate Professor, Computer Science and Engineering**
Dr. Athitsos' major research areas include computer vision, machine learning, and data mining. His recent work focuses on gesture and sign language recognition, detection and tracking of humans using computer vision, shape modeling and detection, and medical image analysis.

### Khosrow Behbehani
**Dean, College of Engineering**
Dr. Behbehani's research interests include respiratory and anesthesia device design and analysis, microprocessor-based control design for biomedical systems, computer modeling of biomedical systems, modern control theory applications in biomedical engineering and stochastic and deterministic systems.

### Richard Bergs
**Research Engineer, TMAC**
Dr. Bergs' work focuses on new product development, using innovation engineering to generate new ideas for products and Technology Driven Market Intelligence. He designs, builds, and tests prototypes using Lean Product Development principles.

### Alan P. Bowling
**Associate Professor, Mechanical and Aerospace Engineering**
Dr. Bowling's areas of expertise include multibody dynamics, control, robotics, and biomechanics.

### Ronald Carter
**Professor Emeritus, Electrical Engineering**
Dr. Carter's research interests include analog integrated circuits, development of device models for use in computer aided design of integrated circuits, simulation and characterization of solid state devices, electronics manufacturing, statistical process control and quality management.

### Carolyn Cason
**Vice President for Research, Office of Research**
Dr. Cason is the co-founder of the UT Arlington Smart Hospital, a physical virtual hospital, which serves as a teaching and research and development facility. She created the Genomics Translational Research Laboratory within the College of Nursing and in collaboration with colleagues in the College of Engineering, developed Smart Care (a center dedicated to developing technology to enhance independent living).

### Kay-Yut Chen
**Professor, Information Systems and Operations Management**
Dr. Chen's research focuses on behavioral operations, experimental economics and consumer behavior. Dr. Chen is author of the book "Secrets of the Moneylab: How Behavioral Economics Can Improve Your Business."

### Wei Chen
**Professor, Department of Physics**
Dr. Chen is an expert in the fields of nanomaterials, radiation diseases and nanomedicine. He is the director of the SAVANT (Security Advances via Applied Nanotechnology) Center at UT Arlington.

### Jung-Chih Chiao
**Professor (Greene and Garrett), Electrical Engineering**
Dr. Chiao's research interests include MEMS RF and optical devices (RF MEMS and MOEM), medical microdevices sensors, nanofabrication and applications, wavelength-division-multiplexing (WDM) optical components and networking, and microwave and millimeter wave quasi-optical systems and sensors.

### Shawn Christensen
**Associate Professor, Department of Biology**
Dr. Christensen's major areas of research include molecular biology, biochemistry and genomics. His lab focuses on transposable elements, the mechanisms by which these elements replicate and the methods by which host cells combat element replication and retransposition.

### Herbert Corley
**Associate Department Chair, Industrial and Manufacturing Systems Engineering**
Dr. Corley's areas of expertise include optimization, decision theory, statistics, network analysis, game theory, fuzzy sets, and stochastic processes, as well as discrete and abstract mathematics. He has studied games with vector payoffs, applied multiple criteria to network analysis, and contributed to the theory of fuzzy logic, including the validity of deduction over time.

### Dragos Stefan Dancila
**Associate Professor, Mechanical and Aerospace Engineering**
Dr. Dancila conducts analytical, computational, and experimental research with a concentration in several areas, such as composite and smart materials and structures; and manned and UAV airship technology. He is the founder and manager of two businesses focused on innovative engineering solutions in the areas of inflatable structures and airship technology.

Tentative list of faculty patent holders as of October 1, 2014

### Gautam Das
**Professor and Head of DBXLAB, Computer Science and Engineering**
Dr. Das has broad research interests in all aspects of Big Data exploration, including databases, data analytics and mining, information retrieval, and algorithms. His current research is focused on data management and algorithmic problems in the deep web, social networks and collaborative media, as well as ranking, search, and analytics problems in databases.

### Digant Dave
**Associate Professor, Bioengineering**
Dr. Dave's current research focuses on creating a multifunctional, image-guided surgical platform that integrates a high-resolution, depth-resolved optical imaging system, a laser scalpel, a motorized positioning system, software, and a control system on a single platform.

### Wendell Davis
**Associate Professor, Electrical Engineering**
Dr. Davis' research interests include magnetostatic surface wave devices, broadband microwave circuits, high frequency time domain measurements and nonlinear parametric effects. His areas of expertise include design of microwave component and microwave semiconductor circuits.

### Ali Davoudi
**Assistant Professor, Electrical Engineering**
Dr. Davoudi's work involves a strong multidisciplinary link between power electronics and energy systems with a particular emphasis on renewable energy systems and transportation electrification, and their interactions with smart grids. His research interests include prototype development, modeling, and control for finite-inertia power electronics systems and microgrids, transportation electrification, and energy source diversification.

### Brian Dennis
**Associate Professor, Mechanical and Aerospace Engineering**
Dr. Dennis' areas of expertise include microfluidics, microreactors, alternative fuel synthesis, computational fluid dynamics, multidisciplinary design optimization, least-square finite element methods, inverse problems, parallel computing, high performance computing software, and unstructured mesh generation and deformation.

### Venkat Devarajan
**Professor, Electrical Engineering**
Dr. Devarajan's research areas of expertise include image processing, virtual reality, computer vision, GIS and digital photogrammetry.

### Rasika Dias
**Professor and Department Chair, Chemistry and Biochemistry**
Dr. Dias' current research activities and interests concern homogeneous catalysis, photo-luminescent materials, coordination chemistry of fluorinated ligands, synthesis of isolable models for reaction intermediates, bio-mimetic and enzymatic oxidation chemistry, development of greener routes to chemicals, novel disinfectants and preservatives, and the study of bonding in metal adducts.

### Robert C. Eberhart
**Professor, Bioengineering**
Dr. Eberhart's areas of research interests include artifical organs, fluid mechanics, biomaterials and biomaterials evaluation.

### Ramez Elmasri
**Professor, Computer Science and Engineering**
Dr. Elmasri's research interests include databases, spatial and spatio-temporal databases (Ontologies, Applications), sensor networks, using RFID for object localization, bioinformatics databases, web search, web services, web ontologies and integration and XML.

### Ronald Elsenbaumer
**Provost and Vice President, Academic Affairs**
Dr. Elsenbaumer's areas of expertise include electrically conductive polymers, environmentally friendly lubricants, materials science of conjugated polymers and mechanistic organic and polymer chemistry.

### Raul Fernandez
**Professor in Practice, Mechanical and Aerospace Engineering**
Dr. Fernandez's expertise is in the fields of automated manufacturing, robotics and surgical device development, high-ordered compressible fluid modeling, dynamic simulation, and helium fluid power systems.

### John Fondon
**Assistant Professor, Biology**
Dr. Fondon's major research work focuses on integrative evolutionary genetics and genomics.

### Jongyun Heo
**Associate Professor, Chemistry and Biochemistry**
Dr. Heo's current research focuses is investigating redox regulation mechanisms of various cellular signaling proteins including proto-oncoprotein p21Ras by applying a combination of spectroscopic (NMR, EPR, and Fluorescence), thermodynamic, kinetic and redox chemistry approaches.

### Haiying Huang
**Professor, Mechanical and Aerospace Engineering**
Dr. Huang's research areas of expertise include structural health monitoring, solid mechanics, experimental mechanics, optical fiber sensors and wireless sensors.

### Junzhou Huang
**Assistant Professor, Computer Science and Engineering**
Dr. Huang's major research interests include machine learning, computer vision and imaging informatics. He conducts both theoretical and applied research in the areas of large scale inverse optimization, compressive sensing, sparse learning, image, video processing, multimedia, computer vision and medical image analysis.

### Manfred Huber
**Associate Professor, Computer Science and Engineering**
Dr. Huber's main research interests include in the fields of autonomous robotic systems, sensor-driven robotics, machine learning, and the development of intelligent behavior.

### David Hullender
**Professor, Mechanical and Aerospace Engineering**
Dr. Hullender's areas of research expertise include machine vibration and stress analysis, hydraulic pneumatic and mechanical systems design and analysis, compressible and incompressible fluid dynamics, modeling and computer simulation, and analysis of random and stochastic processes.

### Julian Hurdle
**Assistant Professor, Biology**
Dr. Hurdle's major areas of research include molecular microbiology and bacterial infectious diseases. Research in his laboratory involves characterizing the molecular action of antimicrobial agents on target bacteria; determining genetic mechanisms by which bacterial pathogens resist antibiotic killing; and evaluating new ways to treat drug-resistant pathogens.

Tentative list of faculty patent holders as of October 1, 2014

### Samir Iqbal
**Associate Professor, Electrical Engineering**
Dr. Iqbal focuses his research on developing devices and systems for the detection of biologically important molecules. Much of his work is directed to enhancing sensitivity and selectivity of solid-state sensors, and understanding nano-bio interface and molecular interactions.

### Farhad Kamangar
**Professor, Computer Science and Engineering**
Dr. Kamangar's areas of research expertise include image processing, computer vision, signal processing, neural networks, artificial intelligence, and computer graphics.

### Vistasp Karbhari
**President**
President Karbhari is an expert in the processing and mechanics of composites, durability of materials, infrastructure rehabilitation, and multi-threat mitigation, damage prognosis and structureal health monitoring. He has authored or co-authored more than 460 papers in journals and conference proceedings and edited or co-edited four books.

### Choong-Un Kim
**Professor, Materials Science and Engineering**
Dr. Kim's major areas of research include thin-film metallurgy, phase transformation and reliability physics of microelectronic devices.

### Daejong Kim
**Associate Professor, Mechanical and Aerospace Engineering**
Dr. Kim's areas of research expertise include turbo machinery aerodynamics, modeling and system dynamics of solid oxide fuel cell and gas turbine hybrid systems, advanced oil-free bearings for turbo machinery and non-linear rotor dynamics.

### Young-Tae Kim
**Assistant Professor, Bioengineering**
Dr. Kim's research interests include neuro-optical engineering, engineering enabled neuro-oncology (brain tumor migration and genetic based therapy), spinal cord injury and regeneration, peripheral nerve-machine interface and gas exchanger for lung applications.

### Wiley Kirk
**Research Professor, Materials Science and Engineering**
Dr. Kirk's research focuses on nanoscale science, engineering, and technology relating to growth and design of heterostructures for multi-junction solar cells, quantum and optoelectronic devices, properties and performance of semiconductor devices and materials using molecular-beam epitaxy, electrical, optical, and materials characterization techniques, processing of semiconductors, metals, and insulators for device fabrication.

### Seong Jin Koh
**Associate Professor, Materials Science and Engineering**
Dr. Koh's areas of research expertise include single electron devices, nanotechnology, biological, chemical sensors and surface science. His current research focus is the fabrication of nanoscale electronic, optical, magnetic devices and sensors on a scale of sub-nanometers to hundreds of nanometers.

### George Kondraske
**Professor, Electrical Engineering**
Dr. Kondraske's research interests include system performance modeling and measurement (particularly applied to the human system and its subsystems), sensor and instrumentation design and measurement system design.

### David Kung
**Professor, Computer Science and Engineering**
Dr. Kung's research focuses on agile method, process, and development, design patterns, UML, automated software engineering, software security, testing for security, and object-oriented software testing and maintenance, from which a CASE tool called OOTWorks has been licensed to industry.

### Wei-Jen Lee
**Professor and Director, Electrical Engineering**
Dr. Lee is keenly involved in research on utility deregulation, renewable energy, load forecasting, power quality, distribution automation and demand side management, power systems analysis, online real time equipment diagnostic and prognostic system, and microcomputer based instrument for power systems monitoring, measurement, control, and protection.

### Woo Ho Lee
**Adjunct Professor, Electrical Engineering**
Dr. Lee, a Senior Research Scientist at UTARI is currently involved in the robotics division focusing, in part, on tactile sensors for surgical robots. His specialties include mobile software development, modular reconfigurable Robots, Microassembly and Microrobotics, MEMS design, analysis, and fabrication, Dynamics system modeling and control.

### David Levine
**Senior Lecturer, Computer Science and Engineering**
Dr. Levine's areas of research include Software Engineering, Systems, Distributed-Networked Objects, Operating Systems.

### Frank Lewis
**Professor, Electrical Engineering**
Dr. Lewis' current research interests include intelligent control, distributed control on graphs, neural and fuzzy systems, wireless sensor networks, nonlinear systems, robotics, condition-based maintenance, MEMS control, and manufacturing process control.

### Qilian Liang
**Professor, Electrical Engineering**
Dr. Liang's research interests include radar sensor networks, wireless sensor networks, wireless communications, compressive sensing, smart grid, signal processing for communications, fuzzy logic systems and applications.

### Fuqiang Liu
**Assistant Professor, Materials Science and Engineering**
Dr. Liu's research focuses on nanomaterial synthesis, polymer electrolyte membrane (PEM) fuel cells, lithium-ion battery materials, material degradation in electrochemical system, transport phenomena in fuel cells and batteries, material and process computational simulation, and energy generation and storage.

### Hanli Liu
**Professor, Bioengineering**
Dr. Liu's research areas of interest include medical instrumentation and imaging, minimally invasive and non-invasive spectroscopy and imaging of tissue, optical diffuse imaging for cancer prognosis and brain activities.

### Ping Liu
**Professor, Physics**
Dr. Liu's areas of research expertise include nanostructured bulk magnetic materials, ultra-thin magnetic films, magnetic nanoparticles, nanorods and nanowires.

Tentative list of faculty patent holders as of October 1, 2014

### Yonghe Liu
**Associate Professor, Computer Science and Engineering**
Dr. Liu's research focuses on wireless networking, systems, and applications, including wireless LANs, cellular networks, wireless sensor networks, and their system prototyping.

### Frank Lu
**Professor, Mechanical and Aerospace Engineering**
Dr. Lu is an expert in fluid dynamics, aerodynamics, passive and active flow control, shock and viscous phenomena, aerodynamic heating, jets and sprays, supersonic and hypersonic flows, propulsion, energy conversion, power production, detonation, flow visualization, instrumentation and facility development, and data processing.

### Liang-Chieh Ma
**Post Doc, Materials Science and Engineering**
Dr. Ma is a post-doc in Dr. Seong Jin Koh's lab. He works on the fabrication of nanoscale electronics; optical, magnetic devices and sensors on a nanometer or sub-nanometer scale.

### Frederick MacDonnell
**Professor and Associate Chair, Chemistry and Biochemistry**
Dr. MacDonnell's research work focuses on developing new molecular catalysts and materials with interesting optical, photochemical, electrochemical, stereochemical and bioactive properties.

### Robert Magnusson
**Professor, Electrical Engineering**
Dr. Magnusson's expertise encompasses several fields, including periodic nanostructures, nanolithography, nanophotonics, nanoelectronics, nanoplasmonics, optical biosensors and chemical sensors, holography, semiconductor lasers, optical properties of materials, wave propagation in periodic media, and optical signal processing.

### Mary Mancini
**Professor and Chair, College of Nursing**
Dr. Mancini's research interests include innovative educational strategies, interprofessional collaborative practice and the development of high performing healthcare teams through the use of simulation.

### Subhrangsu Mandal
**Associate Professor, Chemistry and Biochemistry**
Dr. Mandal's current research is aimed towards understanding the fundamentals of human gene transcription, steroid hormone signaling, endocrine disruption and their implications in cardiovascular diseases and cancer therapeutics.

### Michael Manry
**Professor, Electrical Engineering**
Dr. Manry's research is focused on neural networks, statistical signal processing, image processing, digital signal processing, parameter estimation, pattern recognition, and feature extraction and selection.

### Michael McCabe
**Executive Director, UTARI**
Dr. McCabe joined UT Arlington in October after spending the last several years as the Vice President for Research at the University of Dayton in Ohio and Executive Director of the University of Dayton Research Institute. Dr. McCabe is credited with forging innovative partnerships with business and industry and leveraging state and federal funds to more than double annual sponsored research activity at the University of Dayton.

### Robert McMahon
**Professor Emeritus, Biology**
Dr. McMahon's main research interest focuses on the physiological ecology and population bioenergetics of freshwater and marine invertebrates. His research areas include the biology and control of nonindigenous aquatic invertebrates, and the physiological basis of zonation and development of environmentally sound nonchemical controls for invertebrate macrofouling of raw water systems.

### Efstathios I. Meletis
**Professor and Chair, Materials Science and Engineering**
Dr. Meletis' research areas include surface engineering, multifunctional thin films, nano-scale materials and material-environment interactions. His recent work focuses on vacuum and electrolytic plasma-assisted processing for applications spanning from aerospace to bio, multifunctional nanocomposite thin films, self-assembling in inorganic materials, and nanofabrication and oxidation resistance coatings.

### Maeli Melotto
**Assistant Professor, Biology**
Dr. Melotto's current research work integrates molecular genetics, pathology, genomics, and bioinformatics to gain knowledge in the field of the plant-pathogen interactions.

### Nancy Michael
**Senior Lecturer, Mechanical and Aerospace Engineering**
Dr. Michael performs research in the fields of electronic materials, integrated circuit interconnect technology, and materials characterization.

### Samarendra Mohanty
**Assistant Professor, Physics**
Dr. Mohanty's research interests include biophysics and physiological studies from the molecular and cellular level up to and including the whole organism.

### Seiichi Nomura
**Professor, Mechanical and Aerospace Engineering**
Dr. Nomura's areas of research include micromechanics, analysis of composite materials, applied mathematics, analysis of mechanical and thermal properties of heterogeneous materials including composite materials and functionally graded materials (FGMs).

### David Nygren
**Presidential Distinguished Professor, Physics**
Dr. Nygren is known for inventing the Time Projection Chamber, or TPC, used worldwide for over three decades in a variety of applications in particle detection and discovery, ranging from relativistic heavy ion collisions to the search for dark matter, and extremely rare nuclear decays.

### Mike O'Dell
**Senior Lecturer, Computer Science and Engineering**
Dr. O'Dell is an expert in computer networks, network applications and software engineering.

### Soontorn Oraintara
**Associate Professor, Electrical Engineering**
Dr. Oraintara's specialties include signal, image reconstruction and regularization, complex statistical modeling, and wavelets and multirate systems.

### Martin Pomerantz
**Professor Emeritus, Chemistry and Biochemistry**
Dr. Pomerantz's areas of expertise include monomer and polymer synthesis, physical and synthetic organic chemistry, light emitting and second order nonlinear optical polymers, ionic self assembly and NMR spectroscopy.

Tentative list of faculty patent holders as of October 1, 2014

### Dan Popa
**Associate Professor, Electrical Engineering**
Dr. Popa's research work focuses on robotics, microrobotics and control systems, MEMS, micromanufacturing (microsystems assembly and packaging) and robotic deployment of wireless sensor networks.

### John Priest
**Professor, Industrial and Manufacturing Systems Engineering**
Dr. Priest's research interests include product development, systems analysis, cost analysis, producibility, intelligent systems and process improvement. Currently he's working to create algorithms for General Motors relating to scheduling, for DFW Airport relating to prevention of incursions, and for AA Cargo relating to improvementof tracking methods.

### Jay Rosenberger
**Associate Professor, Industrial and Manufacturing Systems Engineering**
Dr. Rosenberger's research interests include applications of mathematical programming, stochastic optimization, and simulation.

### Howard Russell
**Senior Lecturer, Electrical Engineering**
Dr. Russell's main research interest focuses on high frequency microelectronics devices and circuits , VLSI and semiconductors. He has extensive experience in analog circuit design including active RC filters, AD/DA converters, high-speed CFOA amplifiers, and switch-mode voltage regulators.

### Charles Savage
**Research Engineering Scientist V, Chemistry and Biochemistry**
Mr. Savage performs research in the area of non-fouling, wettable coated devices.

### Suresh Sharma
**Professor, Physics**
Dr. Sharma's areas of expertise include electronic and optical properties of nanostructured materials, deposition and characterization of thin films, superconductivity, behavior of materials under high pressure, surface physics, defects in semiconductors, low-energy positron and positronium physics and phase transitions and critical phenomena.

### Charles Vincent Smith
**Professor Emeritus, Electrical Engineering**
Dr. Smith was granted Professor Emeritus status in 2005 in recognition of his exceptional teaching and research performance. Dr. Smith taught at UT Arlington for more than 30 years.

### Dudley Smith
**Professor in Practice, Mechanical and Aerospace Engineering**
Dr. Smith's primary research focus is on the conceptual and preliminary design of aircraft and vertical lift, and rotorcraft with a secondary research interest in propulsion.

### Norma Tacconi
**Research Associate Professor, Chemistry and Biochemistry**
Dr. Tacconi's research interests include semiconductor nanostructures and nanocomposites for photovoltaic energy conversion, molecular photocatalysts for solar hydrogen generation and $CO_2$ reduction, photocatalytic deposition of noble metal nanoparticles on carbon black for fuel cell applications and dye-sensitized solar cells based on semiconductor nanotubes and nanorods.

### Liping Tang
**Professor, Bioengineering**
Dr. Tang's expertise covers a broad range of topics including stem cells, tissue engineering, nanotechnology, biocompatibility, biomaterials, inflammation, infection and fibrosis.

### Harry Tibbals
**Research Professor, Materials Science and Engineering**
Dr. Tibbals' research areas include application of analytical, physical, and electrochemistry to characterization of materials for applications in biomedicine, energy, and sustainable engineering. His recent interests have focused on medical device and instrumentation development.

### Richard Timmons
**Distinguished Professor, Chemistry and Biochemistry**
Dr. Timmon's major areas of research interest are chemistry of plasma systems, catalysis, coatings technology and surface chemistry.

### Michael Vasilyev
**Professor, Electrical Engineering**
Dr. Vasilyev's research expertise encompasses experimental and theoretical nonlinear, quantum and fiber optics and nanophotonics, with applications to high-capacity optical networking, novel optical amplifiers and photonic devices, all-optical signal processing, quantum information processing, and ultra-sensitive measurements.

### Roger Walker
**Professor, Computer Science and Engineering**
Dr. Walker's areas of specialization include embedded systems, lasers and optic systems, signal processing, road roughness, and use of computer for real-time instrumentation and control.

### Donald Wilson
**Professor, Mechanical and Aerospace Engineering**
Dr. Wilson's areas of research expertise include gas dynamics, aerospace propulsion systems, high-speed aerodynamics, hypersonic flow, and experimental fluid dynamics.

### Baohong Yuan
**Associate Professor, Bioengineering**
Dr. Yuan's expertise is in the fields of physics and biomedical engineering, especially biomedical acoustic and optical imaging. His main interest is in the development of ultrasound-mediated fluorescence optical techniques for tumor structural, functional, molecular and genomic imaging.

### Kyungsuk Yum
**Assistant Professor, Materials Science and Engineering**
Dr. Yum's research interests include biologically-inspired materials and engineering systems, nanobiotechnology, nano-biomanufacturing, and nanomaterials.

### Gergely Zaruba
**Associate Professor, Computer Science and Engineering**
Dr. Zaruba's research interests include mobile and pervasive devices and technologies, embedded systems, health care systems and networking.

### Weidong Zhou
**Professor, Electrical Engineering**
Dr. Zhou's current research focuses on the areas of infrared photonics, silicon photonics, solar cells, photonic crystals, semiconductor nanomembranes, quantum dots, and other nanoscale structures.

Tentative list of faculty patent holders as of October 1, 2014

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