

THE BLUEPRINT



TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College of Engineering™

Department of Mechanical Engineering



Message from the Chair

Dear friends, colleagues and alumni:



We are pleased to share some of the exciting news in the department of Mechanical Engineering at Texas Tech University over the past year. Our faculty, students and staff numbers are

growing. Currently, we have over 900 undergraduates, 50 MS and 60 Ph. D. students. The department has welcomed new faculty member Dr. Chang-Dong Yeo and two new staff members Mrs. Linda Whitebread and Ms. Tayler Claudio. Both our undergraduate and graduate students are receiving numerous awards and recognition. Members of the ME Academy are growing and the department has a strong connection with the Academy and Industry Advisory Committee members. We are able to provide a number of scholarships to our undergraduate students through donations from industry, ME Academy and IAC, and other alumni and friends. Whatever we accomplish in our education and research programs is possible because of our excellent and dedicated staff members. If you are in the Lubbock area, please stop by to learn about the exciting things happening in the department. I like to thank Ms. Tayler Claudio, Senior Business Assistant, and Mr. Colin Lauer, Senior, Mechanical Engineering, for producing such a wonderful newsletter.

Jharna Chaudhuri
Professor and Chair

Department of Mechanical Engineering

2009-2010

Tech Allies With CIT



MOU – The Department of Mechanical Engineering at Texas Tech University and Coimbatore Institute of Technology, Coimbatore, India have recently signed a Memorandum Of Understanding. This MOU is intended to help facilitate an international exchange of faculty and students, research data, and educational and development programs.

ASME Design Competition

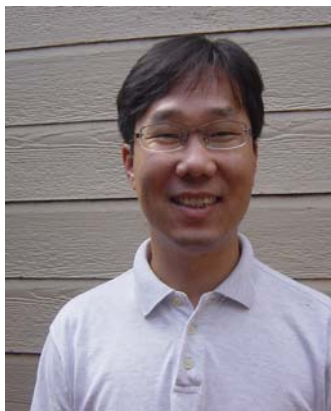


Texas Tech University participated in a design competition sponsored by the American Society of Me-

chanical Engineers. Corbett Schoenfelt, Eric Greenberg, Christie Farmer, Mike Farris, and Evan Shimek built a Human Powered Vehicle for judging. It was judged and graded on analysis, research conducted, a 60 kilometer endurance and sprint event, originality, aesthetics, and design practicality.

NEW STAFF

DR. CHANG-DONG YEO, Assistant Professor



Dr. Chang-Dong Yeo joined the Mechanical Engineering Department in September 2009. He was a Staff Development Engineer at Seagate Technology LLC, MN. He received his B.S. and M.S. degrees in Mechanical Engineering from Yonsei University in South Korea, and earned his Ph.D degree in Mechanical Engineering from the University of Illinois at Urbana-Champaign in 2008. He has worked at Samsung Electronics in South Korea as a senior research engineer from 1998 to 2004 and received an award of “Best Engineer of the Year 2001”. He has published 9 journal papers in *Journal of Materials Research*, *Journal of Applied Physics*, *IEEE-Transaction of Magnetics*, and *Tribology Letters*. He is serving as a reviewer for *Journal of Tribology-Transaction of the ASME*. His main research interests are in Computational and Analytical Analysis of Material Contact Behavior, Nano-mechanical Property and Wear of Thin Films, and Intermolecular Interactions of Engineering Surfaces.

LINDA WHITEBREAD, Business Manager/Supervisor



Mrs. Linda Whitebread joined the department in April, 2009 as Business Supervisor. Linda comes to Texas Tech from The Louise Hopkins Underwood Center for the Arts in Lubbock where she worked as Assistant Director. She helped that organization grow from a small start-up art center to a beautiful facility that is now a landmark presence for the arts in the South Plains. She was responsible for the day to day operation of the center and generating operating income. Duties included donor recruitment and relations, rental bookings and planning, event management, accounting, and Board of Directors relations.

TAYLER CLAUDIO, Senior Business Assistant



Ms. Tayler Claudio joined the department in June of 2009 as Senior Business Assistant. Tayler comes to Texas Tech from Panhandle Plains Student Loan Center where she worked as a Student Loan Account Specialist. She assisted students and borrowers in obtaining financial aid as well as taking care of all of their account needs. This provided her with 5+ years of financial and accounting background while working in Customer Correspondence, Skip Tracing, and Default Prevention. Tayler received her undergraduate degree from WTAMU in 2008 and hopes to obtain her graduate degree in International Business while at Texas Tech.

SABBATICAL LEAVE



Dr. Idesman is on a sabbatical leave and works with scientists from the Air Force Research Laboratory (AFRL) at Eglin AFB, Florida. His research is related to the development of a new numerical technique for the modeling of wave propagation in solids and its application to the study of high-frequency pulse propagation in the Split Hopkinson Pressure Bar. Dr. Idesman suggested a new numerical approach that for the first time allows accurate non-oscillatory solutions of wave propagation problems and is very important for civil and military applications. This will include the use of high performance computer resources at DOD sponsored high performance computer centers.

Dr. Anderson is on a leave of absence. He received a grant from the United States Air Force to teach in the Air Force Academy for one year.



ME Workshop In Coimbatore India

The departments of Mechanical Engineering at the Coimbatore Institute of Technology (CIT), India and the Texas Tech University (TTU), Lubbock, USA conducted a joint International Workshop titled "Future Trends in Sustainable Surface Transportation (TrendsSST-2009)". The workshop dealt with issues related to Fluid Mechanics, Aerodynamic Drag of Passenger Cars, Hybrid Drive Trains, Alternative Fuels and Fuel Cells for Ground Transportation. The three-day workshop was conducted in the A.C. Conference Hall, CIT during March 17 to 19th 2009.

Dr. Siva Parameswaran, Professor and Director of Computational Fluid Dynamics Laboratory, TTU, and **Dr. Timothy Maxwell**, Professor and Director of the Advanced Vehicle Engineering Laboratory, and **Dr. Javad Hashemi**, Associate Dean of Research, College of Engineering, TTU, was the Honorary Chairpersons for the workshop.

The Proposed lectures were intended to benefit R&D engineers from India's automotive design industry, specialists from public-sector transportation organizations, senior faculty, and masters or doctoral-level students from engineering colleges involved in the research pertaining to vehicle aerodynamics, engine cooling, and fuel cells.



PROPOSALS AWARDED



Dr. Edward Anderson was awarded \$192,431 by the U. S. Air Force Academy for an IPA Agreement

Dr. Sukalyan Bhattacharya was awarded \$100,000 by the American Chemical Society-Petroleum Research Fund for a proposal entitled “Fast Simulation of Suspension Dynamics in Presence of Particle-Clusters inside Partially Blocked Channels”.



Dr. Jordan M. Berg was awarded \$4,511.65 by the National Science Foundation for a proposal entitled “REU Site: Micro and Nano Device Engineering”

Dr. Jordan M. Berg, Ayrton Bernussi, Zhaoyang Fan, Luis Grave de Peralta, Mark W. Holtz, Hongxing Jiang, Jingyu Lin, and Sergey A. Nishin were awarded \$1,358,460 by the U.S. Army. The title of the proposal was "Nanophotonics Devices Research .



Dr. Jharna Chaudhuri was awarded \$533,500 from NSF. For a proposal titled ‘Acquisition of a Transmission Electron Microscope for materials Research and Education’.

Dr. Alan F. Jankowski from the Mechanical Engineering Department, Dr. Jiangyu Lin from the Electrical and Computer Engineering Department, Dr. Dominick Casadonte from the Department of Chemistry and Biochemistry, and Dr. Moira Ridley from the Geosciences Department, are Co-PIs for this proposal.



Dr. Ming-Chien Chyu was awarded \$11,377.80 from the USDA and Texas Tech University Health and Sciences Center for the proposal entitled “Community-Based Approaches to Overweight and Obesity Among Young Children in West Texas.





Dr. Darryl James was awarded \$58,843 from Sandia National Laboratories for a proposal entitled “Computational Modeling of a Molten Salt Stream Generator”.

Dr. James was also awarded \$62,196 by Sandia National Laboratories for his proposal entitled “Sunshine to Petrol”.

Dr. Yangzhang Ma was awarded \$109,568 by the Department of the Army and Iowa State University for a proposal entitled “Phase Transformations of Ceramics under Shear Stress”.

Dr. Ma was also awarded \$75,000 by DOD, DTRA, and Iowa State University for a proposal entitled “Search for New Highly Energetic Phases under High Pressure and Shear”



Dr Michelle L. Pantoya was awarded \$148,189 by the U. S. Army Research Office for a proposal entitled “Diagnostics for Analyses of Gas Phase Chemistry from Novel Propellant Super Igniters”. She was also awarded \$45,539 from the TX Emerging Technology Fund and Ironbridge Technology for research proposal entitled “Energy Transfer Studies of Pyrophoric Iron for Heating Applications”.

Dr. Pantoya was awarded \$60,000 from the Office of Naval Research for a proposal entitled “Fundamental Understanding and Improvements of Energetic Reactions of Aluminum Particles with Oxidizers

and Metals

Dr. Pantoya was awarded \$92,340 by DOD, DTRA, and The University of Texas for “Impact Driven Reactions in Select Thermites and Reactive Materials”.

She was also awarded \$140,110 by the National Science Foundation for “Melt-Dispersion Mechanism for Energetic Reactions of Aluminum Nanoparticles”.



Dr. Jingzhou (James) Yang was awarded \$25,085 by Caterpillar, Inc. for a proposal entitled “Hand Simulation Model”. He was also awarded \$99,999 by National Institute for Occupational Safety and Health (NIOSH) for a proposal entitled “Computer-Aided Predictive Models for Respirator Fit and Comfort”. Dr. Yang was awarded \$174,867 by National Science Foundation (NSF) for a proposal entitled “BRIGE: Optimization-Based Prediction of Seated Posture in Pregnant Women”. Dr.

Yang was also awarded \$1,175 by Texas Space Grant Consortium for a proposal entitled “Design of Dust-Proof Hand Tools”.



Dr Ekwaro-Osire received the George T. and Gladys Abell Faculty Award

Dr. Rasty was promoted to full professor



Dr. Chyu is invited to speak at the MedTech Dynamics eHealth Conference at Tokyo, Japan in November 2009. The conference theme is “Solutions, Options and Opportunities to Implement and Extend eHealth.”

Dr. James was promoted to full professor



Dr. Yang serves as Technical Program Member for the 3rd Applied Human Factors and Ergonomics (AHFE) International Conference 2010. He also serves as session chair for 2010 SAE World Congress. Dr. Yang was invited to be a Guest Editor for the special issue (Dynamics in Digital Human Modeling and Simulation) of the *International Journal of Human Factors Modeling and Simulation*.

Dr. Yang was invited to give a seminar at NASA John Space Center this March and the presentation title was “Human Modeling and Simulation”. Dr. Yang was invited to give a seminar at National Institute for Occupational Safety and Health (NIOSH) this June and the presentation title was “Simulating the Intersection between a Respirator and a Headform”. Dr. Yang was also invited to give a talk at National Institute of Standards and Technology (NIST) this October and the presentation title was “Analysis of Human Protective Equipment and Human Modeling”.

Dr. Chyu started a new Graduate Healthcare Engineering option in the Master of Engineering Degree program, College of Engineering, and the first group of 7 master’s students enrolled in the program this fall. The curriculum is designed to meet the growing demand for engineers trained to apply the principles of engineering, health sciences, and business administration to effectively manage the physical, technological, and support services of healthcare facilities in order to optimize the safety, quality, efficiency, accessibility, and cost effectiveness of healthcare delivery processes and healthcare systems. The students include 4 Texas residents and 3 international students. These students have baccalaureate background from various engineering disciplines (Chemical, Computer, Electrical, Industrial, Mechanical, etc.). They are

taking graduate-level engineering courses related to healthcare across disciplines, in the areas of biomedical engineering, healthcare information technology, distance healthcare, healthcare facilities and infrastructure, healthcare environment management, and improvement of healthcare quality. In addition, they will take courses in healthcare management, safety, public health and epidemiology, healthcare policy and social issues at TTU Health Sciences Center. Three of the students are career engineers, including one licensed Professional Engineer, taking distance courses in this curriculum while working full time. More information about TTU Healthcare Engineering can be found at http://www.depts.ttu.edu/coe/academics/healthcare_engineering/index.php

OTHER NEWS

The **Mechanical Engineering Department** recently worked with the South Plains Regional Chapter of The American Red Cross, to help sponsor the Champion's Breakfast, held every year to honor life savers across the south plains. The donations made will help assist families after house fire and prepare volunteers for future emergencies.

The second annual **Engineering Kick Off Event** was held Friday, September 11, 2009 on the Engineering Key. This event showcased the exciting world of engineering and



brought students, faculty, staff and industry partners together for fun. Events included free food, rock-climbing, and volleyball among other things.



The **Combustion Lab** has been working on a variety of projects. Shawn Stacy worked on the Compressing Thermites project as part of his dissertation study. This project developed a high bulk density reactive material (RM). The RM

was able to be molded into any shape, or applied as paint. A technique was also developed to form a thin, flexible sheet. A New Strategy for Tissue Engineering: Combustion Synthesis is another project. Previous research from the lab hinted towards the ability to engineer an alloy with a density gradient throughout its volume. This past year, they have successfully synthesized an Al-Ti alloy with a graded porosity structure. These results will impact orthopedic work in which titanium alloys are commonly used as implants for joint replacement. A highly porous surface will enable bone in-growth while a dense core will maintain strength properties and reduce stress shielding.



GRADUATE STUDENT NEWS

Luke J. Mayer is currently pursuing a PhD under the advisory of Dr. Darryl James. His research is focused on the design and experimental validation of a solar thermochemical reactor in conjunction with Sandia National Laboratories and the Sunshine to Petrol initiative. The central aim of this initiative is to use concentrated solar energy to produce hydrogen from water and then combine with a carbon source to produce a hydrocarbon fuel. Luke is currently being supported by the TTU-President's Fellowship, the AT&T Chancellor's Fellowship, and the Dean's Fellowship Award.



GRADUATE STUDENT NEWS



Birce Dikici received the following awards this year; The Golden Key Engineering & Technology Achievement Award (Spring 2009), a Boeing Engineering Scholarship (Summer 2009), and the Summer Dissertation/Thesis Research Award (Summer 2009). She was a speaker with Dr. Pantoya on "The Effect of Pre-heating on Flame Propagation in Nanocomposite Thermites", at the 47th AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition January 5-8 2009 in Orlando, Florida and "The Influence of Aluminum Passivation on the Reaction Mechanism", at the 45th AIAA Aerospace Sciences Meeting and the New Horizons Forum and Aerospace Exposition August 2-5 2009 in Denver, Colorado.

Ryan Breighner presented his research at the 2nd World Congress on Sports Injury Prevention in Tromso, Norway (2008), the 55th annual meeting of the Orthopaedic Research Society, and last year's annual meeting of the Gait and Clinical Motion Analysis Society. His primary area of research is human injury biomechanics, particularly knee and anterior cruciate ligament (ACL) injury. Additionally, he is currently the longest actively participating member of the Texas Tech chapter of Pi Tau Sigma, the Mechanical Engineering Honor Society, and an alum of the TTU Honors College.



Neutralizing a biological threat with a thermite reaction is the objective of the Thermites That Kill Bacteria project. Different thermite compounds were examined for their ability to destroy a spore forming Anthrax substitute (*Bacillus Atrophaeus*). Two thermites with known biocides (Al- I_2O_5 and Al-AgO) were compared to one without biocides (Al- Fe_2O_3). Reactions occurred within a confined chamber. Initial kill/ no kill tests show that Al- I_2O_5 is extremely effective at killing bacteria. The Al-AgO and Al- Fe_2O_3 reactions showed no signs of bacteria neutralization after an hour of exposure time, in fact the bacteria exposed to these thermites actually grew better than the controls that were not exposed. **Billy**

Clark and **Cory Farley** are working on this project jointly for their PhD dissertations.

Burak Ozsoy, Luke Mayer, Li Shi, Senay Imam, Zhenyi Liu, and Jianzhe Wu, received the Harrington Graduate Scholarship from the College of Engineering.

Jichang Dai Dr. Yang's MS student, received the James Douglas and Mary Hazlewood Memorial Fellowship for the academic year 2009-2010. Mr. Dai also received the travel award from the Graduate School at TTU to attend HCI09 conference at San Diego. He also presented his paper entitled "Human Head Protective Equipment: Past, Current, and Future" at Digital Human Modeling Conference of HCI 2009, San Diego, California.



Billy Clark, Adam Stroud, Ryan Breighner, Eric Collins, and Luke Mayer received the Presidential Doctoral Fellowship.

Modeling of High Powered Diode Lasers, Weston Hobby

Diode lasers have widespread applications in fiber optic communication, the medical industry, and in the home. Common devices such as laser pointers, bar-code scanners, and DVD players make use of diode lasers. Optical and electrical self-heating degrades the performance and lifetime of diode lasers. Therefore, accurate simulation of the intimate interaction between the temperature, optics, and electronics is key in improving the performance of these devices. Ongoing research at TTU Mechanical Engineering under a DARPA research grant models the nanoscale electrical transport, thermal distribution, and optics, and their cumulative effects on the optical output of the laser.



Mr. Ilker Durukan presented a research paper entitled “*An Inverse Problem Technique for Spur Gears with Asymmetric Teeth*” at the SEM 2009 Annual Conference & Exposition on Experimental and Applied Mechanics, held on June 1-4, 2009 in Albuquerque, New Mexico USA. This research was conducted in the Product Design and Development Lab. Mr. Durukan is pursuing his Ph.D. under the supervision of Dr. S. Ekwaro Osire.

On this paper, spur gears with asymmetric teeth, which are believed to have better performance than those with the symmetric teeth, were investigated using an inverse problem technique.

In addition, Mr. Durukan participated in the TTU Eighth Annual Graduate Student Research Poster Competition held on April 10, 2009. He won the 3rd place.

He will also present a conference paper for the 2009 ASME International Mechanical Engineering Congress & Exposition to be held on November 13-19, in Lake Buena Vista, Florida, USA.



Mr. Fisseha Alemayehu presented a research paper entitled “*Dynamics of a Bi-Unit Impact Vibration Absorber with Staggered Clearances*” during the SEM 2009 Annual Conference & Exposition on Experimental and Applied Mechanics, held on June 1-4, 2009 in Albuquerque, New Mexico USA. The research was conducted in the Vibrations Lab. Mr. Alemayehu is pursuing his Ph.D. under the supervision of Dr. S. Ekwaro Osire.

In this research, the issue of vibration absorption using Bi-Unit, Staggered Clearance Impact Vibration Absorber (IVA) has been investigated and the dynamics of impact balls have been studied.

In addition, Mr. Alemayehu participated in the TTU Eighth Annual Graduate Student Research Poster Competition.

He will also present a conference paper for the 2009 ASME International Mechanical Engineering Congress & Exposition to be held on November 13-19, in Lake Buena Vista, Florida, USA.



STUDENT ORGANIZATIONS

ASME

This year ASME and El Paso Corporation hosted a Cook-Out for the Whitacre College of Engineering's Kick-Off Event September 11, from 10am-2pm. The event was a huge success. The Society of Professional Engineers helped ASME grill for all 2000-3000 of the students that were fed. Besides providing an inflatable bungee run for the students' entertainment, El Paso Energy also donated money for a drawing. The grand prize was a new netbook, while the other prizes consisted of iTunes gift cards and restaurant gift certificates.

For the 2009 Engineers Week the Whitacre College of Engineering hosted a trebuchet competition between engineering societies. ASME's Design Committee quickly rose to the occasion and built a unique trebuchet called a "Floating Arm Trebuchet" in less than two weeks. ASME's entry focused on converting the maximum amount of potential energy from the counterweights into kinetic energy, used to project a roll of toilet paper 70 feet down the engineering key. After winning \$250.00 for the best precision the ASME team took their machine to a local park and maxed out the trebuchet using 230 pounds of counterweight to launch gallons of water in excess of 100 yards. The team, led by Dain Johnson, documented the launches of the FAT and posted the video on YouTube as "Texas Tech Floating Arm Trebuchet". Special thanks to the College of Engineering and Eric Nixon for putting on the event, and to all the ASME members who helped on this project: Andrew Schmalzer, Nick Brown, Kirk Williams, Andrew Blunt, Jacob Roberts, Robert Stevens, and Charlie. Also, thanks to the encouragement of Dr. Rasty and Mr. Mosedale.



Engineers Without Borders Panama Water Project Solong, Panama

Background: Solong is a rural community located on the Teribe River in Panama and it is home to the Naso people. Most families in the Solong community are small scale subsistence farmers that rely on a small export revenue from pineapples and cacao sold in the nearby city of Changuinola.

EWB-Texas Tech took the first assessment trip for the Panama project in July 2009. Our members attained water samples and surveyed the community's current water system during the trip. The community's water distribution system is outdated and does not properly filter debris from source water. The mission of our program is to provide clean, sanitary drinkable water to Solong, Panama. This will include filtering and distributing the water they currently drink and creating a sanitation system for their waste to prevent cross contamination between the waste and their water source. The second assessment trip is planned for December 2009. They hope to send 7 or 8 people, student members and advisors, on this assessment trip. During this trip they will survey the geographic layout of the area, take health assessments of the population and research various solutions to the community's infrastructure problems.



Pi Tau Sigma

The Sigma Epsilon Chapter received the top performance Award which goes to the best chapter in the nation at last year's National Convention in Ann Arbor, Michigan. Officers Aaron Clements, Brice Patterson Mollie McKnight, Kyle Beck, and Landon Fischer attended the event to accept this award. The Chapter have worked with the community through various service projects over the last year. Including: Lubbock Changers which helps repair houses in need, grounds work and maintenance for the Lubbock Arboretum, and Meet an ME which brings local grade school students to the department to show them what it is like to be an engineering student. The Sigma Epsilon was chosen to host the 2010 National Convention here at Texas Tech University with the theme of "green engineering."



Chapters from all over the nation will come to the University to partake in the events and discussions. Events include sponsored dinners and social events, guest speakers, a panel discussion among experts and various business meetings.

ALUMNI NEWS



Brad Parsons graduated from Texas Tech University in December 2001. He lives in Arlington, TX with his wife Lisa (TTU '01) and daughter Claire. They are expecting their second child in February 2010. In June '09 Brad accepted a position as Building System Integration (BSI) Service Manager with TDIndustries. The BSI group designs, installs, and services turnkey building integration technology to control comfort and energy.

Robert Wiseman Graduated from Texas Tech University in May 2009. Robert is currently a field engineer working for FM Global Dallas Operations. He passed The National Board of Boiler and Pressure Vessels Inspector Commission Exam He is responsible for boiler inspections in the El Paso region and parts of Ft. Worth for 2010.

Andrew Robichaud Graduated from Texas Tech University in May 2009. He is currently involved in the research and design center at FMC Technologies in Houston, TX.

ME ACADEMY INDUCTEES



Sharon G. Brady graduated in 1983 with a BSME degree from Texas Tech University. She currently resides in Hayden, Colorado with her husband Joe. Sharon and Joe have one daughter, Ashley, who is currently a Junior in pre-med at TTU.

Sharon is currently the Director of Xcel's Hayden Station in Hayden Colorado. As Director, she is accountable for the operation of 2 coal-fired power plants totaling 446 megawatts. Her position also requires time working with officials from many County, State, and Government Agencies.

James H. Gerhardt graduated in 1973 with a BSME degree from Texas Tech University. He and his wife, Olena, currently reside in Bastrop, Texas. James and Olena have three children – Amber, Justin, and Renessa. In 2008, James joined the Lower Colorado River Authority as Chief Project Manager.



Steven E. Ross graduated in 1984 with a BSME degree from Texas Tech University. He then received an MSME degree from the University of Texas at Arlington in 1986, followed by a JD degree from Southern Methodist University Dedman School of Law in 1991. He and his wife, Katherine, reside in Dallas and have two daughters, Kaitlin and Emma. Kaitlin is a Freshman at TTU. Steve joined Gardere Wynne Sewell LLP in Dallas, where he is currently a partner and the Chair of Gardere's Intellectual Property Practice group. Steve specializes in intellectual property litigation, patents, copyrights, and trademarks.

FACULTY



Dr. Edward Anderson
Professor



Dr. Alan Barhorst
Professor



Dr. Jordan Berg
Professor



Dr. S Bhattacharya
Assistant Professor



Dr. Jharna Chaudhuri
Chair and Professor



Dr. Ming Chyu
Professor



Dr. Raymond Desrosiers
Associate Professor



Dr. Steven Ekwaro-Osire
Associate Professor



Dr. Atila Ertas
Professor



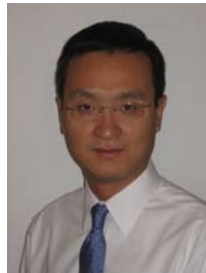
Dr. Seon Han
Assistant Professor



Dr. Javad Hashemi
Professor



Dr. Zhaoming He
Assistant Professor



Dr. Qing Hui
Assistant Professor



Dr. Alex Idesman
Associate Professor



Dr. Alan Jankowski
Professor



Dr. Darryl James
Professor



Dr. Yanzhang Ma
Associate Professor



Dr. Tim Maxwell
Professor



Dr. Walt Oler
Associate Professor



Dr. Michelle Pantoya
Associate Professor



Dr. S. Parameswaran
Professor



Dr. Jahan Rasty
Professor



Dr. Sergey Smirnov
Assistant Professor



Dr. Derrick Tate
Assistant Professor



Dr. Jingzhou Yang
Assistant Professor



Dr. Chang-Dong Yeo
Assistant Professor

INSTRUCTORS



Mrs. Colleen Berg



Mr. David Branson



Dr. Jeff Hanson



Mr. Andrew Mosdale



Mr. Scott Fanning

STAFF



Ms. Tayler Claudio



Mr. Leslie Dmello



Mr. Isaac Mora



Mrs. Tonette Rittenberry



Mrs. Linda Whitebread



Mr. Mike Kent



Mr. Will Geiger

IAC MEMBERS

The Department of Mechanical Engineering would like to express our gratitude and appreciation to the members of the Industrial Advisory Committee.

Mr. Carl V. Alexander
President
Vanguard Metal Technologies

Dr. Jharna Chaudhuri
Chair of Mechanical Engineering Dept.
Texas Tech University

Mr. Alan J. Davidson
Director
Capital Projects
Energy Supply Business Unit

Dr. Louis A. Gritzo,
Vice President and Manager of Research
FM Global

Mr. Daniel E. Henke,
Senior Vice President
Fossil Sector
Zachry Engineering Corporation

Mr. Tim Hunter
Technical Excellence Manager
Mechanical Service Equipment
Duncan Technology Center

Mr. Dwight Jackson
Senior Advisor Recruiting & Staffing
ConocoPhillips

Mr. Mark T. Laney
Principal Engineer
Bell Helicopter Textron, Inc.

Mr. Bruce McCain
Rotating Equipment Specialist
Occidental Oil and Gas Corporation
Worldwide Engineering and Technical Service

Mr. Aaron Ramos
Manufacturing Eng Sr Staff
F-35 Production
Lockheed Martin Aeronautics

Mr. Mark S. Ramsey
President
Texas Drilling Associates

Mr. Scott Reed
Vice President of Operations
Process Engineering & Quality Services

Mr. James B. Stinnett, PE, PMP
Senior Project Manager
Zachry Engineering Corporation

Ms. Lisa Tuerff
Electronic Commerce Manager
Electrical Products Division
3M Austin Center

Mr. David A. Ufford, P.E.
Manager
Product Development Engineering
Raytheon Missile Systems

Scholarship Recipients: Mechanical Engineering Departmental Scholarships

GORDON BARRET MEMORIAL ENDOWMENT SCHOLARSHIP

| | |
|-----------------------|--------|
| Andrew Adams | Senior |
| Mathew Goode | Senior |
| Jonathan Sullivan | Senior |
| Kaili Eldridge-Looker | Senior |

JACK ROBERTS SCHOLARSHIP ENDOWMENT OF THE WES

T TEXAS AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

| | |
|---------------|--------|
| Tyler Fanning | Senior |
|---------------|--------|

KOH-POTTER SCHOLARSHIP ENDOWMENT IN MECHANICAL ENGINEERING

JAMES H. LAWRENCE SCHOLARSHIP ENDOWMENT

| | |
|------------------|--------|
| Matthew Hershey | Senior |
| Herbert Odhiambo | Senior |
| Colin Lauer | Senior |

MECHANICAL ENGINEERING GRAUDATE SCHOLARSHIP

| | | | |
|--------------------|----------|----------------|----------|
| Ammar Hazrat | Master's | Rachit Mathur | Master's |
| Prashanth Krishna | Master's | Nishikant Raje | Master's |
| Fnu Krishnamoorthy | Master's | Shahrukh Niazi | Master's |
| Hanyan Wu | Master's | Avik Basu | Master's |
| Nikhil Kondabala | Master's | Dogan Onay | Master's |
| Tengxiao Liu | Master's | Clayton Young | Master's |
| David Upshaw | Master's | Amit Kumar | Master's |
| Martin Azese | Doctoral | | |

MECHANICAL ENGINEERING SCHOLARSHIP FUND

| | |
|---------------------|-----------|
| Arica McGovern | Senior |
| Alexander Kneer | Senior |
| Ross Plaxco | Sophomore |
| Victoria Wooldridge | Senior |
| Matthew Good | Senior |
| Francisco Alvarez | Sophomore |
| David Laughlin | Sophomore |
| Christopher Bryson | Senior |
| Alexander Webber | Sophomore |

MARSHAL B. MCDONALD SCHOLARSHIP IN MECHANICAL ENGINEERING ENDOWMENT

| | |
|-------------------|--------|
| Alexander Matthey | Junior |
|-------------------|--------|

MICHAEL MCMAHAN MEMORIAL ENDOWMENT FUND

| | |
|---------------|--------|
| Aaron Sanchez | Junior |
|---------------|--------|

PAUL V. POST JR. MEMORIAL ENDOWED SCHOLARSHIP

| | |
|-------------------|--------|
| Dain Johnson | Senior |
| Ashley Thomas | Senior |
| Ty Parker | Senior |
| Nathan Williams | Senior |
| Robert Patterson | Senior |
| Joshua Andrews | Senior |
| Eric Hood | Senior |
| Joshua Jurries | Senior |
| Thomas Eitzen | Senior |
| Chase Lucero | Junior |
| Howard Dennis | Junior |
| Jeremy Bair | Senior |
| Lorraine Hudgeons | Senior |
| Aaron Hobratschk | Senior |

L.J. POWERS AWARD ENDOWMENT

| | |
|-----------------|-----------|
| Amber Lubbers | Senior |
| Trevor Hannon | Senior |
| Michael Gilbert | Senior |
| Lee Tatum | Junior |
| Isaac Grothe | Sophomore |
| Katherine Burns | Sophomore |
| Kelsey Meeks | Junior |
| Spencer Gill | Junior |

RICK D. HUSBAND SCHOLARSHIP ENDOWMENT IN MECHANICAL ENGINEERING

| | |
|---------------|--------|
| Amanda Gordon | Senior |
| Sean Hannon | Senior |

CLIFF WILSON SCHOLARSHIP ENDOWMENT FOR MECHANICAL ENGINEERING

| | |
|------------------|--------|
| Andrew Schmalzer | Senior |
|------------------|--------|

**Whitacre College of Engineering
Dean's Office Scholarships**

AMOCO ALUMNI ENDOWED SCHOLARSHIP

| | |
|-----------------|--------|
| Jeanette Knight | Senior |
| Casey Lujan | Senior |
| Matthew Goode | Senior |

BLACK FAMILY DEAN'S CHAIR IN ENGINEERING ENDOWMENT

| | |
|----------------------|--------|
| Christopher Vilhauer | |
| Amanda Gordon | Senior |
| Brittany Brandt | Junior |
| Kelsey Meeks | Junior |
| Andrew Christesson | Senior |

BOB L. HERD SCHOLARSHIP ENDOWMENT IN ENGINEERING

| | |
|---------------|--------|
| Matthew Goode | Senior |
|---------------|--------|

BUDDY SIPES ENGINEERING SCHOLARSHIP ENDOWMENT

| | |
|---------------|--------|
| Ashley Thomas | Senior |
|---------------|--------|

CHARLES AND RUTH HOUSTON SCHOLARSHIP ENDOWMENT

| | |
|-----------------|--------|
| Alexander Kneer | Senior |
|-----------------|--------|

CHARLES W. GLEESON, CHARLYN G. PLUNK AND JAKE PLUNK ENDOWMENT IN PETROLEUM ENGINEERING

| | |
|---------------|--------|
| Ashley Thomas | Senior |
|---------------|--------|

COLLEGE OF ENGINEERING SCHOLARSHIP

| | |
|----------------|-----------|
| Jacob Williams | Junior |
| Mary Yanez | Senior |
| Li Shi | Doctoral |
| Jay Whitaker | Sophomore |

DALLAS TEAM ENDOWED SCHOLARSHIP

| | |
|------------------|--------|
| Michael Klausung | Senior |
|------------------|--------|

DON AND KAY CASH DEAN'S SCHOLARSHIP ENDOWMENT

| | |
|--------------|--------|
| Brett Fisher | Senior |
|--------------|--------|

EISENBECK-HENSON SCHOLARSHIP ENDOWMENT FOR THE COLLEGE OF ENGINEERING

| | |
|---------------|--------|
| Jacob Roberts | Junior |
|---------------|--------|

H EARLY & COUNTESS FORE ARCHER SCHOLARSHIP ENDOWMENT

| | |
|-------------------|-----------|
| Leo Cruz | Senior |
| Mark Abdouch | Junior |
| Chase Lucero | Junior |
| Jonathan Sullivan | Senior |
| Kevin Riech | Sophomore |

HORN PROFESSOR ENDOWED SCHOLARSHIP IN ENGINEERING

| | |
|--------------|--------|
| Neal Flusche | Junior |
|--------------|--------|

JAMES E. "JUM" LOWDER SCHOLARSHIP ENDOWMENT

| | |
|---------------|--------|
| Ty Parker | Senior |
| Philip Oliver | Junior |

MOSE NEWMAN SCHOLARSHIP ENDOWMENT

| | |
|--------------|--------|
| Neal Flusche | Junior |
|--------------|--------|

PHILIP L. AND JAYNE M. FREDERICKSON SCHOLARSHIP ENDOWMENT

| | |
|--------------|--------|
| Dain Johnson | Senior |
|--------------|--------|

PHILIP S. STERRETT SCHOLARSHIP ENDOWMENT

| | |
|--------------|--------|
| Spencer Gill | Junior |
|--------------|--------|

RAY BUTLER ENDOWMENT

| | |
|----------------|-----------|
| Kerry Anderson | Junior |
| Jacob Kern | Sophomore |
| Jacob Weaver | Senior |
| Kyle Brown | Sophomore |

RAYMOND AND LOYCE INCE SCHOLARSHIP ENDOWMENT

| | |
|----------------|----------|
| Eric Katz | Freshman |
| Landon Fischer | Senior |
| Amanda Gordon | Senior |
| Bryan Judd | Senior |
| Ashley Thomas | Senior |
| Casey Lujan | Senior |
| Nicholas Brown | Senior |

ROBERT GEORGE SCHLINKMAN SCHOLARSHIP ENDOWMENT

| | |
|---------------|--------|
| Amber Lubbers | Senior |
|---------------|--------|

ROY AND RAY BUTLER SCHOLARSHIP ENDOWMENT

| |
|---------------|
| Clint Frazier |
|---------------|

SOUTH PLAINS CHAPTER OF API SCHOLARSHIP IN ENGINEERING ENDOWMENT

| | |
|-------------|----------|
| Adam Stroud | Doctoral |
|-------------|----------|

THE EDWARD E. WHITACRE, JR. SCHOLARSHIP ENDOWMENT

| | |
|--------------|--------|
| Dain Johnson | Senior |
| Andrew Adams | Senior |
| Ryan Herrick | Senior |

WILLIAM AND KAREN HAGOOD SCHOLARSHIP ENDOWMENT

| | |
|------------------------|--------|
| Davis Chanjaplammoitol | Senior |
| Casey Lujan | Senior |

Congratulations Mechanical Engineering Graduates!

BS Recipients

FALL 2008

| | | | | | |
|-----------------------|-----------------|-----------------------|-----------------|-------------------------|-----------------|
| Alfonso Abad | | Dillon J. Ford | | Meredith A. Macha | Cum Laude |
| Raeid N. Alkhateeb | | Shea M. Gentry | Magna Cum Laude | Aaron P. Marshall | |
| Jeff Aycock | Cum Laude | Jonathan C. Gower | | Christopher V. Mathew | |
| Wesley A. Bacarisse | | Joshua A. Greenhill | | Adam M. McGuire | |
| Christopher C. Barnes | | Jonathan K. Grice | | Stephen A. McDonald | |
| Kevin D. Bass | | Michael C. Grimm | Cum Laude | Christopher L. McDowell | |
| Thomas H. Bellion | | Kreg D. Hadley | | Brett A. Metcalf | |
| Billy D. Bitney | | Jonathan P. Harper | Summa Cum Laude | Brandon K. Moon | |
| David T. Blahnik | | Benjamin T. Hayes | Magna Cum Laude | Adam G. Myers | |
| Zachary A. Boyea | | Samson B. Hidad | | Feyisayo O. Ogundiya | |
| Jarod S. Brown | | Valentine E. Hogan | | Benjamin R. Orr | |
| Walter L. Brown | | Jason R. Holcomb | | Ankit H. Patel | |
| Cody M. Browning | | Larry D. Holloway Jr. | | Timothy A. Pierce | |
| Dusty A. Burger | Summa Cum Laude | Lyndle D. Jackson | | Jeffrey R. Plaisted | |
| Heath Q. Burnett | | Jacob A. Johnson | Summa Cum Laude | Conway R. Reimer | |
| Brian Callahan | | Joshua L. Johnson | | Paul J. Rogers | |
| Andrew J. Carlson | Cum Laude | Joshua R. Johnson | Cum Laude | Patrick A. Salvo | |
| Matt G. Case | Cum Laude | Saurabh Kalra | | Darren R. Santeler | |
| Michael W. Cast | Cum Laude | Kunwook Kang | | Katrina M. Schenk | Magna Cum Laude |
| Thomas M. Coates | | Kushal J. Kapse | | Jobe L. Seeberger | |
| Eric J. Croissant | | John M. Kendall | Cum Laude | Aubrey A. Spear IV | Summa Cum Laude |
| Curtis R. Culver | | Bryan J. Kern | | Gregory Spicer | |
| Sanjana Datta | Cum Laude | Ryan A. Kimberling | Cum Laude | Matthew Star | |
| Jeffrey M. David | Magna Cum Laude | Daniel S. Kopan | | Caleb D. Stevenson | Cum Laude |
| Michael R. Dechant | | Seth D. Kraal | Cum Laude | Jeremiah R. Sturgeon | |
| Jason W. DeWitt | | Scott I. Lackey | | Tyler T. Thompson | Magna Cum Laude |
| Jeffrey P. Diehl | Magna Cum Laude | Kyle Lamotta | | Ezra M. Tiprigan | |
| Jonathan T. Dover | Summa Cum Laude | Jace T. Lindsey | | Kris J. Walker | |
| Noah R. Ellis | | Robert B. Lyon | | Jeremy T. White | |

SPRING 2009

| | | | | | |
|-----------------------|-----------------|-----------------------|-----------------|-------------------------|-----------------|
| Shane E. Albers | | Jesse L. Jones | | Robert E. Stephens | Cum Laude |
| Kahlid M. Al-Sulaiti | | George A. Keller | | Daniel N. Steves | Magna Cum Laude |
| Ivan Alvarez | | Justin T. Kibbe | | Adam W. Stroud | Summa Cum Laude |
| Robert B. Anderson | Cum Laude | Robert K. LaSalle | | Henry V. Stumpf | |
| Bill E. Barker | | Kurt Laughren | | Dustin A. Tindall | |
| John R. Barnett | | Todd M. Lindeley | | Christopher R. Towery | Magna Cum Laude |
| James A. Baumgartner | Magna Cum Laude | Zachary K. Luikens | Magna Cum Laude | Roberto Trevino | |
| Mason T. Blalack | | Michale S. Manera | | Patrick W. Vanderverter | Cum Laude |
| Kristopher S. Brokles | | Lindsey G. McDaniel | Summa Cum Laude | Tyler A. Weaver | |
| Willam A. Clay | | Stephen A. McDonald | | Robert E. Wiseman | Magna Cum Laude |
| Cory E. Coltharp | | Grafton J. Montgomery | | | |
| David J. Dagenais | | Ricardo R. Moreno | | | |
| Jonathan D Dalzell | Magna Cum Laude | Michael A. Morse | Cum Laude | | |
| Giang T. Dang | | Sean R. Mullen | Cum Laude | | |
| Christie L. Farmer | Cum Laude | Jeffery A. Napier | Cum Laude | | |
| Matthew R. Fink | | Ryan M. Novelen | | | |
| Thomas Frisbie | Magna Cum Laude | Mark E. Olsen | | | |
| Nicholas M. Gerend | Cum Laude | Ayse M. Otkur | | | |
| Steven D. Giustino | Cum Laude | Kyle S. Podlewski | | | |
| Brian P. Gleitz | Summa Cum Laude | Jermey J. Pudlo | | | |
| Matthew R. Gommel | Cum Laude | Andrew R. Robichaud | | | |
| Mark A. Graham | | Ryan M. Robinson | | | |
| Eric M. Greenberg | | Jermey L. Ruddock | | | |
| Michael C. Grimm | Cum Laude | Patrick A. Salvo | | | |
| Zachary S. Gross | Magna Cum Laude | Colin Saxon | | | |
| Adam G. Hawley | | Bryan T. Schilder | | | |
| Casey R. Hayes | | Corbett B. Schoenfelt | Cum Laude | | |
| Rex A. Headrick | | Calan J. Shifrin | | | |
| Robert W. Hedrick | | Evan T. Shimek | Cum Laude | | |
| Ryan T. Humphrey | | Frank N. Shirley | | | |
| Leon Joffe | | Cale D. Smith | Magna Cum Laude | | |
| Richard V. Johnson | Cum Laude | Kurt A. Stansburry | | | |

August 2009

| | |
|-------------------|------------------|
| Michael Bauman | Rafael Ramos |
| Matthew Bryant | Marc Rounsavall |
| Christopher Burge | Jacob Waide |
| Andrew Leung | Mark Woods |
| Zachary Ormsby | Nathaniel Wyrick |

Congratulations Mechanical Engineering Graduates!

Master's Recipients

FALL 2008

SPRING 2009

| | |
|---------------------|--------------------------|
| Srinivas Bajjuri | Parimal Trivikram Khisti |
| Steven Wesley Dean | Sagar Mahendra Lawhate |
| Vikas Doon | Srinivasa Naidu Mandadi |
| Suveen Reddy Emmadi | Selvakumaran Senapathy |
| Navjot Gill | Gaurav Shrestha |
| Vijaykumar Girkati | Naresh Valleru |
| Vijaya Kumar Kaithi | |

Charles Anthony Crane
 Daniel Tyler Kerr
 Amit Ranjit Panchal
 Dana Michelle Rosenblatt
 Jason Kenneth Schneider
 Bharatendra Shailendra Sharma
 Nathan Wayne Smith
 Sree Vidya PhaniNandan Tallapragada
 Ryan Michael Warren

Congratulations Mechanical Engineering Graduates!

Doctorate Recipients

December 2008

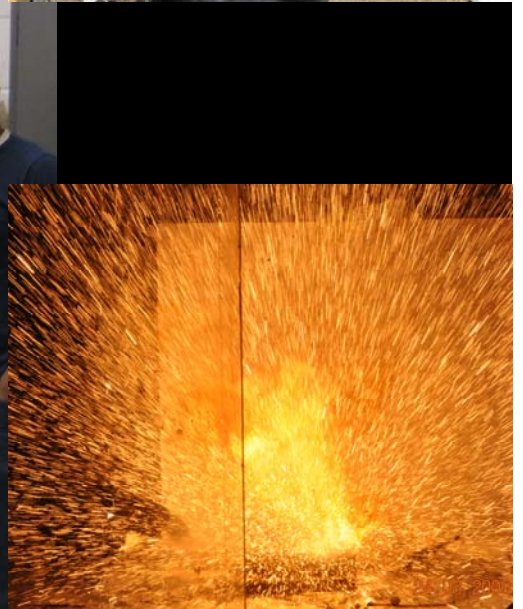
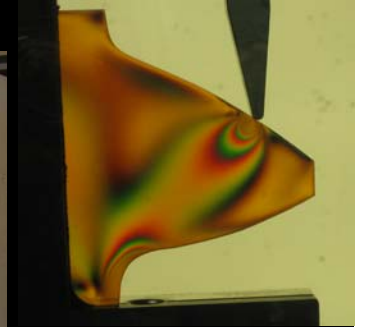
Dong-wook Lee

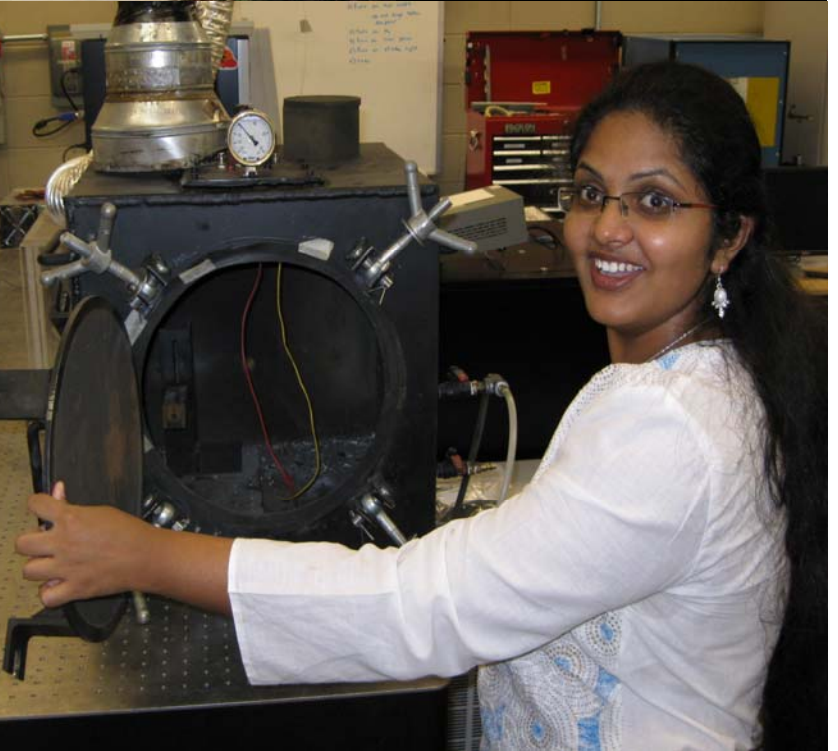
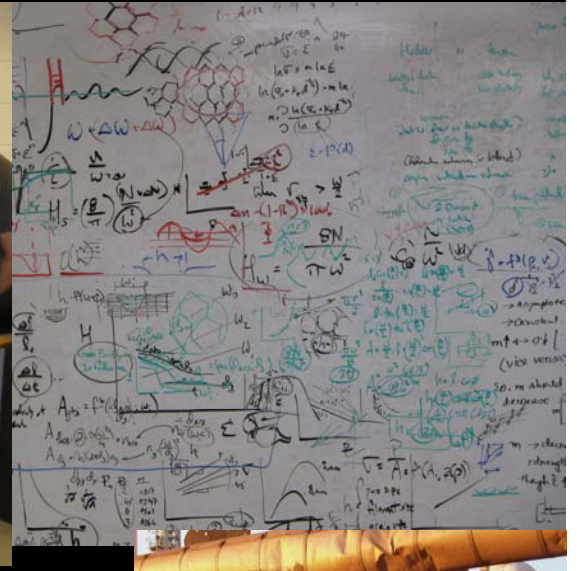
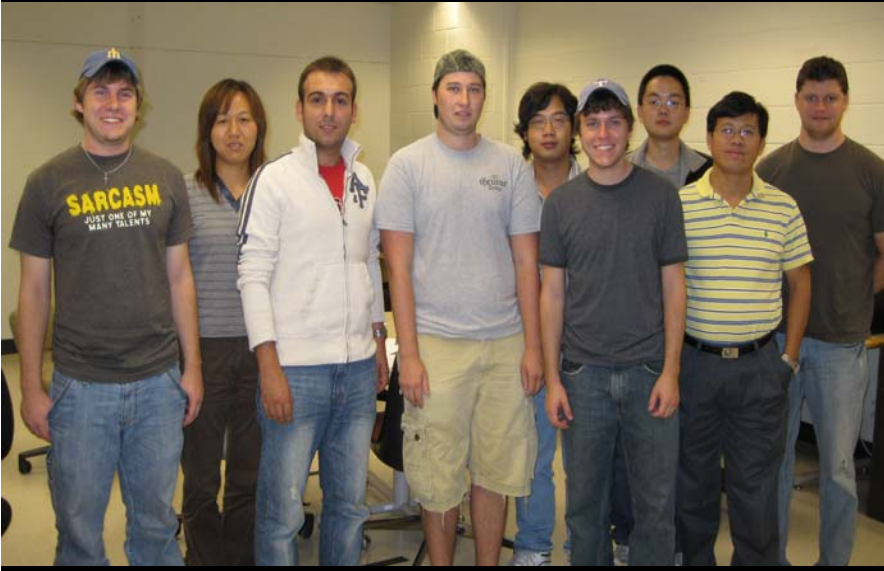
May 2009

Joon-Yeoun Cho
 Oleg Zarechny

August 2009

Sukanta Ganguly
 Simeon Symeonidis
 Lawrence Welch







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Edward E. Whitacre Jr.
College of Engineering™

Department of Mechanical Engineering

Box 41021
Lubbock, TX 79409

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TTU Department of Mechanical Engineering
Attn: Linda Whitebread, TTU-ME, Box 41021
Lubbock, TX 79409

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SUPPORT!**

KEEPING IN TOUCH

The TTU Department of Mechanical Engineering would like to know what is happening in your professional life. Please send the following information with your news to:

tonette.rittenberry@ttu.edu

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

E-mail: _____

Graduation Year: _____ Degree: _____

Current Occupation: _____

Employer: _____

Location: _____

The news of your accomplishments/promotions can be included on a separate sheet. Please feel free to include newspaper articles, photos, ect.

If you are interested in being a member of the ME Academy, please contact our Chair:

Dr. Jharna Chaudhuri
jharna.chaudhuri@ttu.edu