Dear Friends of Engineering Technology!

As I write these paragraphs, we’ve already had many 100-degree days this summer! I can assure you, ETEC is also hot with news and accomplishments by students, staff, and faculty since my last communication in Fall 2013. Many of these are collected in this newsletter.

My thoughts recently are filled with questions about our educational and research philosophy which is deeply rooted in the efficient application of ‘technology’; but, by the way what is ‘technology’, and what is Engineering Technology (ET)? These deceptively simple questions have been bounced around yet again and quite vigorously in recent years particularly in meetings of the ASEE—American Society for Engineering Education. Many of you are aware that in the aftermath of the 1955 Grinter Report, engineering education in the US took a heavy turn to embrace math and engineering science at the expense of the practice of engineering. Although the original intent of the Grinter Report was to create Engineering Science and Applied Engineering tracks, the 1955 atmosphere did not allow it, thus sealing the next 60 years of ET. Unfortunately, neither universities nor industry to this day can unambiguously and uniformly articulate the meaning of ET; many think ET was a regrettable choice of terms over Applied Engineering; others ponder why there are engineering and ET degrees; why there are 2-year and 4-year ET degrees; and why industry hires engineering and 4-year ET graduates for engineering positions, not for ‘technologist’ positions.

During our Bylaws and 2015-20 Strategic Planning sessions, the faculty settled on a very simple definition of ‘technology’ in STEM: hardware, software, and techniques. By inference, ET emphasizes the utilization of current technology to solve engineering problems for industry in the short to medium time frame. Simple, crisp, effective, no comparisons with our sister engineering programs, a perfect 30-second elevator speech that can be used by students at interview time to re-educate industry recruiters; or by academic counselors to attract students and dispel parents’ worries; and by you our friends to describe ET @ UNT with mean-green pride! This definition is currently being discussed by the ET Council of the ASEE to be adopted as part of a re-invigorated ‘ET value proposition’ statement. Stay tuned for more news on this!

There is also a renewed national interest in renaming ET as Applied Engineering. In general, ET leaders are waiting for ABET to finalize their organizational restructuring and have opportunities to examine this question for the benefit of our future students, our faculty, and the whole engineering profession. Again stay tuned for more news on this hot potato!

So, read on, enjoy, and as they say on the radio “be well, do good work, and keep in touch!”

Best regards,

Enrique Barbieri
Professor & Chair
ENROLLMENT

The department total student enrollment experiences growth for the fourth year in a row! We are steadily reaching a strategic goal of about 500 students with current faculty and facility resources. Breakdown Fall 2015 (as of 8/24): 395 Undergraduate and 96 Graduate

**ETEC - Total**

<table>
<thead>
<tr>
<th>Year</th>
<th>Student Count</th>
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<tbody>
<tr>
<td>2011</td>
<td>352</td>
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<tr>
<td>2012</td>
<td>365</td>
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<tr>
<td>2014</td>
<td>447</td>
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<td>2015</td>
<td>491</td>
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In the know ....

ETEC offers the only ABET Accredited BSET degrees in the Metroplex with majors in Construction, in Electrical, and in Mechanical ET.

SAE—SOCIETY OF AUTOMOTIVE ENGINEERS

Remember how well the 2013 SAE Formula team performed with Car #12 (top picture)? The 2014 SAE Team Michael Goodman, Justin Burdine, Jarrett Lemke, Michael Bohrer, Reid Cloud from ETEC and Reed Greenwood from MEE participated in Lincoln, Nebraska in 2014, did a truly outstanding job representing UNT with car #30. This was only our 2nd year competing, and for two years in a row, out of ~80 international teams, UNT once again exceeded all expectations of a still rookie team! They were one of only 29 cars to complete the endurance event – something we did in 2013 as well beating all the odds. Just to give you a sense of the difficulty and how well they did, 13 teams forfeited or withdrew, we outperformed the 30-year veteran UTA, and other universities like University of Michigan-Dearborn, RIT, University of IL-Urbana, Purdue and USC among others.

Dr. Bob Hayes accompanied the group & praised the team’s professional performance, timeliness, and demeanor throughout the competition, as they networked. They surely put a MEAN GREEN spotlight on themselves and on UNT! [Read More]
MORE STUDENT RECOGNITION

⇒ Chris Willis, a UNT senior majoring in “Integrative Studies” has completed several CNET courses for his degree plan, and is planning to continue to graduate school. He was the first prize winner in the 2014 International Student Competition on Cold-Formed Steel Design against 42 other entries from 8 universities in 5 countries. The international competition has been held since 2011 with sponsors that include NSF, ASCE, and the American Iron & Steel Institute. This is the first time UNT wins the competition. Read More

⇒ In a joint project with Mechanical & Energy Engineering during fall 2014 and spring 2015, Construction ET Students Create Model Buildings of the Zero-Energy House for Energy Efficiency Research. These are freshman/sophomore students enrolled in Dr. Diane DeSimone’s sequence of courses CNET1160 and 2180 Read More

⇒ It was a SURE pleasure when the undergraduate ELET team of students Shawn Kennedy, Luis Flores and Ryan Hagood, guided by Dr. Elias Kougianos, was the winner in the Computer and Electrical category at the 2nd annual Showcase of Undergraduate Research in Engineering (SURE) on Nov 11, 2014, for their presentation titled “A High-Sampling Rate Wireless Sensor Network for Structural Health Monitoring”.

⇒ Research Assistant Amir H. Bagheri poster and proposal “Optimization of an Innovative Stirling Engine for Energy Recovery/Production” was one of the eight finalists by the US India Chamber of Commerce DFW “Spirit of Innovation Competition 2014” (SOIC). His faculty mentors were Drs. Huseyin Bostanci and Phil Foster. Read More

Your feedback ....
Would ET seniors benefit if required to take the FE exam?
etec@unt.edu
Did you know? UNT is one of only 20 institutions in the US offering a master’s degree in a department of Engineering Technology. The MSET has concentration areas in Construction Management, Engineering Management, Electrical Systems, and Mechanical Systems.

Spread the word ....
ETEC offers the only MSET degree in the Metroplex region.

93 students in SP15!!
A 69% increase

New in 2015: Undergraduate students may enroll in Grad-Track, a 3+2 program where a BSET/MSET can be completed in 5 years.

New in 2015: in addition to a Thesis or Project degree plans, students may now complete a Course-Only plan culminating in an integrative course.

Faculty and students are busy with current and new funded projects that help support students, labs, and fuel our graduate scholarship.

STUDENT SCHOLARSHIPS & AWARDS

♦ Construction ET students (ACET) compete and place third in the Outstanding Student Chapters of the NAHB (Feb 2014)

♦ Ms. Mahsa Mahdavian, our ACET student organization president received the Eagle Award for “Women Breaking Barriers”. (April 2014)

♦ Mr. Nathan Derrick of CNET receives the Simpson Strong Tie scholarship in two consecutive years (April 2014, June 2015)

♦ Liang Xiong wins a $1,000 CMAA North Texas Scholarship (2014)

♦ Robert Pleasants (CNET), David ‘Shawn’ Kennedy (ELET), and Shelby Conrad (MEET) were recommended by faculty as best students in their respective programs (Spring 2015)

Capstone Projects....
ET students presented 11 Senior Design Projects on April 24, 2015

Your feedback ....
Is your company interested in supporting a focused senior student or graduate student project?
etec@unt.edu

THE MSET PROGRAM

Spread the word ....

2014 study done by the National Association of Colleges and Employers finds ET graduates lead in High Employability measure!

Student Scholarships & Awards

♦ Construction ET: 13
♦ Electrical ET: 8
♦ Mechanical ET: 20
♦ Graduate MSET: 41

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For more information visit MSET Website

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**This Spring ....**

**Dr. Zhenhua Huang**  
(CNET)  
Promoted to tenured Associate professor  
(effective Sep. 1)

**Dr. Elia Kougianos**  
(ELET)  
2 US Patents awarded

**Dr. Phil Foster** (MEET)  
UNT Distinguished Teaching Professor Award

**Dr. Enrique Barbieri** elected  
as a Director of 4-year ET programs, ET Council of ASEE (2015-17)

**Dr. Mitty Plummer (right) and Dr. Bill Grubbs (unavailable)**  
Receive Faculty Emeritus Plaques

**....**  
**Dr. Haifeng Zhang** (MEET)  
3-year $499K NSF/GOALI Grant

**....**  
**Dr. Cheng Yu** (CNET)  
1-of-4 winning proposals by the AISI

**....**  
**Dr. David Nowicki** (Engineering Management)  
Awarded tenure (effective Sep. 1)
FACULTY ACHIEVEMENTS

ON-GOING PROJECTS (ACTIVE IN 2014-2015)

♦ E. Barbieri and A. Boggiano, $52,000. “Invenciones de la Inventiva: Employing KUHF -Engines of Our Ingenuity to Increase Engineering Awareness and Education Opportunities in the Hispanic Community” Project websites: Spanish Episodes; K-12 Materials; Broadcast from UNT


♦ Z. Huang, "Investigation of the Blast Loading for the Fertilizer Plant Explosion at West, Texas", NSF-RAPID, $10,000, 06/01/13 – 05/31/14


♦ S. Nasrazadani “Development of New Accelerated Corrosion Test(s) for All -Aluminum Microchannel and Tube and Fin Heat Exchangers”, ASHRAE, $179,250, 2014-17


♦ C. Yu and Jeff Martin (Verco Decking). “Innovative High-Performance Cold-Formed Steel Walls for Light Framed Construction”, Grant # 1445065, $199,653, NSF, 2014 –2016

♦ C. Yu “CAREER: Comprehensive Research on Cold-Formed Steel Sheathed Shear Walls: Special Detailing, Design, and Innovation”, NSF, $400,010, 2010-15

♦ C. Yu “Load Bearing Clip Angle Design”, $20,000, American Iron and Steel Institute, 2013-2014

♦ C. Yu “Advancing Building Information Modeling (BIM) for Cold-Formed Steel Structures”, AISI, $6,000, 2015
ON-GOING PROJECTS (ACTIVE IN 2014-2015)
(CONTINUED FROM PREVIOUS PAGE)

- **H. Zhang, L. Zuo, B. K. Sinha**, **NSF GOALI**: “Collaborative Research: Self-powered Dual-mode Piezoelectric Resonant Pressure/Temperature Sensors for Oil and Gas Field Explorations”, $382,000 (UNT: $192,000, SBU: $190,000), 09/01/2013-09/01/2016

- **H. Zhang** “Integrated analysis of piezoelectric resonators as components of electronic systems”, ARO, $386,670, 2010-14

- Lei Zuo (Stony Brook University), **Haifeng Zhang** (University of North Texas), Jie Lian (Rensselaer Polytechnic Institute), “Self-powered wireless dual-mode langasite sensor for pressure/temperature monitoring of nuclear reactors”, DOE, $800K, 2015-18

- **H. Zhang, W. Guoan, L. Zuo, D. Lin**, “NSF/GOALI: Collaborative Research: Energy harvesting nanorods-enhanced MEMS temperature-insensitive gas sensor for combustion monitoring and control”, $499,469: ($187,984 (UNT), $161,484 (USC), and $150,000 (VT)), 2015-2018

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**Are you looking for Industry Partners?**
Contact us to help your company innovate or improve a process!
etec@unt.edu

**GRADUATE MENTORS**—Faculty are mentoring 29 research problems this fall leading to graduate student Projects and Theses in the next 1-2 years.
COMMUNITY ENGAGEMENT

Dr. Cheng Yu ably led an effort for UNT to be the 3rd University to join the Cold-Formed Steel Research Consortium (CFSRC) with Johns Hopkins and Virginia Polytechnic and State University, with additional affiliates from McGill University, University of Massachusetts – Amherst, Northeastern University, and University of Massachusetts – Dartmouth. The consortium seeks to amplify the efforts of individual investigators with shared facilities and other resources. Read More

The Sanger Independent School Foundation held their Spring 2014 gala and auctioned off the “Playhouses”. They received $2500 for each of them for a total of $5000 added to their fund raising. The third house will serve as the ticket booth at the Sanger football games and will bear a plaque to show that it was built and donated by UNT Construction students.

Dr. Seifollah Nasrazadani organized and hosted the June 2014 National Association of Corrosion Engineers (NACE) North Texas Meeting at Discovery Park. Read More

UNT NACE Chapter and Engineering Technology Department Host Program, Scholarship Ceremony in Feb 2015 Read More

On Wednesday April 15, 2015 graduate students from Engineering Technology and Mechanical & Energy Engineering departments enrolled in MSET 5800.004 (Corrosion Engineering Technology) visited AZZ Galvanizing plant in Hurst Texas and observed metallic coating process of Hot Dip Galvanizing. Read More

Co-hosted a general meeting for Texas Structural Steel Institute, Friday Nov 14, 2014. Guest speakers included Steve Murphy – Gerdau – Economic Outlook for Construction and Steel; Will Ikerd – Consulting Engineer – Advanced Steel Detailing Software; Bill Bonefas – Consulting Engineer with Structural Solutions – Connection Design; Mike White – Texas Construction Association – Upcoming Legislative Session Bills

Larger Career Fairs each year! The October 2014 fair had 86 companies on site recruiting students from the College of Engineering.

!! New Certificate !!

⇒ Starting in 2015 professionals can earn a Certificate in Walkway Safety INFO FLYER
⇒ For more information on upcoming courses visit CALL
COMMUNITY ENGAGEMENT

♠ The UNT Society of Hispanic Professional Engineers (SHPE UNT) in conjunction with the professional DFW SHPE chapter held its first Regional 5 Leadership Development Conference at UNT on April 23-26, 2015. The SHPE UNT students organized a three day event that provided educational and professional activities for different types of participants (i.e., undergraduate students, graduate students, working professionals and high school students). The event was possible thanks to the sponsorship of at least 13 corporations. For the undergraduates and graduate students, the event offered workshops, corporate tours, case studies, engineering competitions and a career fair. For the working professionals, the event offered graduate school preparation workshops and interesting industrial related workshops (e.g., six sigma and patent preparation). For the high school students, the event offered STEM competitions, UNT tours, and the opportunity to network with college students and working professionals. The event attracted about 200 to 250 professionals and college students from across the nation and culminated with an award ceremony that was held at a local hotel conference in Denton, Texas.

GIFTS: MANY, MANY THANKS!

♠ We are very grateful for the PC-based logic analyzers donated by L-3 Communications which are a great addition to our modern Electrical ET labs. Impacting 7 courses and hundreds of students!
♠ UNT – ACET student organization received a generous donation of $2000 toward a student competition trip.
♠ UNT—SAE student organization received multiple donations in cash, supplies, and talent!
♠ The TEXO Foundation awarded $6000 ($3000 each year for 2014 and 2015) to Construction ET to improve the teaching facilities and support outreach activities.
Although we are a state-supported unit, more than half of our expenses are covered by tuition and fees, by contracts and grants, and by private support from corporations, foundations, and individuals. Your support funds:

1) scholarships – the department annually strives to give thousands of dollars in scholarships;
2) student projects and research – so that our graduates are at the cutting edge of their field;
3) lab equipment and software – which keeps our laboratory and curriculum current;
4) student competitions – such as the SAE Formula, and
5) faculty to advance student success.

Many companies support an “employee matching gift” program whereby your gift as an employee may be matched. If uncertain, please contact your employer’s HR department.

To support our students & our programs, please visit:

https://development.unt.edu/givenow/givenow_ceng.php

and designate between:

- Engineering Technology Gift Account
- Engineering Technology Scholarship Account
- Other—SAE—Baja Car Student Project
- Other—ACET Construction ET Student projects
- Other—CNET Program
- Other—ELET Program
- Other—MEET Program

For additional information or guidance to make your gift to ETEC whether one-time, annual, endowment, or planned, please contact etec@unt.edu. We appreciate your support of our programs and most importantly, our students!!

THANK YOU!!!