



## **TEF Elects Officers & Trustees**

The Tulsa Engineering Foundation at its annual meeting Thursday, July 14, 2011, elected the following officers to serve for the term July 2011 to July 2012. Gaylon Pinc becomes President; Rick Petricek, Vice President; Bob Strattan, Secretary; and Russ Diehl, Treasurer.

Suzanne Dodson and Meg Broge were elected to serve as Trustees for the term 2011 – 2014.

## **Engineering Scholarship Golf Tournament September 30, 2011**

ACI, ASCE, EST, OSPE and TEF have joined together again this year to sponsor the annual Engineer's Golf Tournament. It will be held Friday morning, September 30, 2011 at White Hawk Golf Club at 151st and Yale in Bixby. The primary purpose of the golf tournament is to raise funds for scholarships funded by these 5 organizations. All proceeds will be divided among the organizations for their scholarship purposes.

The format will be a Four Man Scramble, with teams teeing off at all holes at 8:00 am. Special activities include: purchase of mulligans; magic string; closest to the pin; longest drive; and a \$10,000 hole-in-one opportunity. A continental breakfast will be provided as well as free balls on the practice range. After the round of golf, lunch will be served in the club house and the various winners of the events announced. There will also be drawings for door prizes. If you don't have a team, sign up and you will be included with a foursome at check-in.

We are seeking hole sponsorships by various companies and individuals. If your company or you would like to be a sponsor, please contact your organizational representative and include on the registration form. An application is included in this issue of the Tulsa Engineer, and is available through the 5 sponsoring organizations, as well as on the [www.tulsaengineer.org](http://www.tulsaengineer.org) web site. The registration deadline is September 9, 2011.

Mark your calendars and plan on attending and having fun for a very worthy cause. All proceeds are used for engineering scholarships.

Organizational representatives are:

ACI - Cris Gillmore [cris@concreteservicescorp.com](mailto:cris@concreteservicescorp.com), 918-663-1222 ; ASCE - David Henke [david.henke@craftontullspark.com](mailto:david.henke@craftontullspark.com) 918-588-4126 ; EST – Duane Huetter [duane\\_huetter@yahoo.com](mailto:duane_huetter@yahoo.com) 918-286-8260; and OSPE - Rick Petricek [rpetricek@poetulsa.com](mailto:rpetricek@poetulsa.com) 918-665-8800 x 246 .

## **2011 CALENDAR of EVENTS**

P - PDH Credit given

### **August 8 - P**

ProCure Proton Therapy  
Rob Lake, Center President

### **UPCOMING EVENTS**

#### **September 12:**

Pathways Leading  
to OU Engineering - P  
Dr. Pramode Verma  
Meeting at the OU-Tulsa  
Schusterman Center

#### **September 26:**

Fab Lab Tour - P

#### **September 30:**

Engineering Scholarship  
Golf Tournament  
at White Hawk Golf Club

**EST  
Meetings  
are always open.  
Visitors are always  
welcome.**

## First Robotic Kicks Off

### 2011-2012

FIRST Robotics experienced a very successful year of activities in Oklahoma in which 48 US FIRST Robotics teams were comprised of over 1,000 students high school students who competed in the Oklahoma Regional and Finals events. Five Oklahoma teams advanced to the Finals Tournament in St. Louis, MO April 27-30, 2011. The five teams were: Tulsa Memorial, Union, Ponca City, Edmond Santa Fe, and Grove High Schools.

It is called **FIRST** - For Inspiration and Recognition of Science and Technology. It is a key **STEM** activity for getting students excited about Science, Technology, Engineering, and Math.

While it is about robotics, it is more importantly about problem solving, teamwork, group dynamics, communications, fund raising, and more. It is about the celebration of science and technology in a competitive event that is just as exciting as any high school football or basketball game. Not only do students develop "hands on" skills and observe practical applications of mathematics and science principles discussed in classrooms, they have fun while engaged in a challenging and stimulating "sporting event."

The kickoff for the 2011 - 2012 year begins August 20 and 27 with informational sessions.

You are invited to an information session where you can learn more about how FIRST Robotics can motivate students to develop a passion for mathematics and science. The sessions are scheduled for August 20 at Tulsa Memorial High School, Room 128 (Host - Lane Matheson 918-991-8326) and August 27 at Edmond-Santa Fe High School, Room 17 (Host - Randy Blackwood,

405-496-4250). Please share this information with your student's teachers.

For more information contact Jack Sellers sellersj@swbell.net or 918-691-3285.

## Some Interesting

### Engineering Snippets:

#### Philips plans led-filled luminous wallpaper.

Popular Science (7/12, Dillow) reports Philips "is teaming with Kvadrat Soft Cells to create a kind of luminous textile for the consumer market that will essentially embed adjustable LEDs in an acoustic panel that can be hung on the wall to provide ambient lighting like an active piece of artwork, or even be used as a wallpaper to bathe entire rooms in soft tones of the user's choosing." The article notes that "the acoustic panels will do a lot to muffle sound and reduce echo in large spaces, but ostensibly they could also respond visually to sounds—that is, the ambient color of the room might be programmed to respond to the music playing at any given time or integrated into other entertainment experiences."

#### Composite material developed to create longer-lasting bridges

Researchers at Lawrence Technological University in Michigan have developed a composite material to build long-lasting, nearly maintenance-free bridges. The material was used in a half-scale bridge that finally split in two after 254,000 pounds of force was applied. "The goal here is to have a bridge not affected by salt or de-icing of roads," said Charles Elder, graduate research projects manager. "We'd like to achieve bridges that can sustain 90 to 120 years of use with minimum maintenance." Observer & Eccentric Newspapers (Livonia, Mich.) (7/9)

#### New Superelastic Alloy May Help Buildings to Withstand Shocks from Earthquakes

A to Z of Materials (07/04/11) Chai, Cameron

Japanese researchers at Tohoku University have developed a superelastic alloy that could help buildings to absorb earthquake shocks and resist vibration and stress. The material, created by adding nickel to an iron-based alloy, can return to its original shape at temperatures between -196°C and 240°C, while existing superelastic alloys can only withstand the range of -20°C to 80°C and keep their shape. The new alloy is also cheaper, and could be appropriate for use in controls and joints in spacecraft, airplanes, and cars, in addition to buildings.

#### Study could affect predicting lifespan of buildings, large structures

Researchers at the Massachusetts Institute of Technology are using molecular-dynamics simulation, a modeling technique for studying the molecular behavior of different substances to understand material deterioration. They studied what happens when moisture hits the interface between the silica in concrete and the epoxy in material used as a surface wrap for concrete. They learned the adhesive strength between the two is then weakened, compromising the strength of the structural component. The researchers hope the results of the study can be used by structural and design engineers in estimating the lifespan of large structures and building components. MIT News (7/11)

#### San Francisco-Oakland Bay Bridge Benefits From Bridge Information Modeling

Structural Engineer (06/11) Abbas, Ali H.; Abbas, Sajid; Maroney, Brian Three-dimensional, data-driven, and intelligent object-oriented bridge information modeling (Brim) helps eliminate potential conflicts such as connection details and geometry, rebar placement, and post-tensioning hardware, that can lead to construction delays, disputes, and

expensive claims for the owner. BrIM, similar to the building information modeling (BIM) used for building construction, is the process of documenting bridge geometry and other data through the project design that results in an accurate model including bridge geometry, material and section properties, quantities, erection sequences, and maintenance data. BrIM can be used to generate 3D models of pre-stressed concrete segmental bridges, 2D design drawings, and shop drawings for fabrication shops building steel bridges, which represents substantial savings in time and money by eliminating potential conflicts and delays. The next step in BrIM will be the creation of real time animations stimulating the construction process and a virtual simulation of the erection sequence that is rational, efficient, practical, time, and cost efficient. Subsequently, once the bridge is built, BrIM models can be used to develop a maintenance schedule, with periodic updates reflecting newly available data and technology. Detailed BrIM software packages are available from Autodesk's AutoCAD, Navisworks Manage, and Revit; and Bentley's Microstation, RM Bridge, ProSteel 3D, and Rebar. Tekla Structures provides software for modeling large steel and reinforced concrete structures, with bridge concrete profiles being generated in AutoCAD or Microstation. Many of these systems are currently in use in projects around the United States.

## EST Update

The EST Board has decided to schedule twice-a-month meetings for EST starting in September. EST will meet on the second and fourth Mondays of the month, with the recommendation that members may want to attend other technical society meetings on the other weeks, or as appropriate. We will try this for a few months and then evaluate our schedule.

EST plans to have their September 12 meeting at OU-Tulsa at the Schusterman Center and the September 26 meeting at the Fab Lab. Look for information in the September Tulsa Engineer about reservations for a catered lunch for each meeting.

## BIO - August 8 Rob Lake

Rob joined the ProCure Proton Therapy Center in Oklahoma City as Center President in January, 2011. As President of the Center, Rob oversees its development, growth and operation. He has been a healthcare executive for 25 years with great experience in managing operations for leading health care providers and medical groups. Prior to joining ProCure, he served as CEO of four hospitals. Most recently Mr. Lake served as President and CEO of North Arkansas Regional Medical Center, and as CEO of Great Plains Regional Medical Center in Elk City. He has also served on the board of the Oklahoma Hospital Association from 2006 to 2010, and most recently served as Chairman of the Board of the American Hospital Association's Governing Council for Small and Rural Hospitals. Mr. Lake earned both his Bachelor's Degree and Masters of Business Administration from Texas Tech University.



# ENGINEERS' SOCIETY of Tulsa



#### OFFICERS 2011

President  
Executive Vice President  
Secretary  
Treasurer

William Stith  
William Willsey  
Bob Simmons  
Duane Heutter

#### PROGRAMS

Vice President

Michael Miller

#### MEMBERSHIP

Vice President

EJ Jantz

#### PUBLIC RELATIONS & EDUCATION

Vice President

Robert Strattan

#### DIRECTORS

Geneva Culwell, John Morgan, Dave Myers,  
Calvin Swindell, Richard Wollmershauser

## TULSA ENGINEERING Foundation



[www.tulsaengineer.org](http://www.tulsaengineer.org)

#### OFFICERS 2011

##### President

Gaylon Pinc

[gppinc@pmgtulsa.com](mailto:gppinc@pmgtulsa.com)

##### Vice- President

Rick Petricek

[rpetricek@poetulsa.net](mailto:rpetricek@poetulsa.net)

##### Secretary

Robert Strattan

[r.strattan@ieee.org](mailto:r.strattan@ieee.org)

##### Treasurer

Russ Diehl

[rcdiehljr@aol.com](mailto:rcdiehljr@aol.com)

#### ELECTED TRUSTEES:

Hollis Allen, OSPE  
Bud Averill, IEEE  
Allen Bates, ASCE, OSPE  
Dan Bohachick, IEEE  
Meg Broge, SWE  
Jennifer Butler, ACI, ASCE, OSU  
Chriss Chavez, SHPE, SWE  
Russell Diehl, Jr. IEEE  
Suzanne Dodson, SWE  
Christine Hurrill, SWE  
Duane Huetter, EST  
Steven Johnson, ASCE  
Gaylon Pinc, OSPE, OEF  
Rick Petricek, OSPE  
Jack Sellers, OSPE, First Robotics  
Susan Thompson, TCC  
Buck Walsh, SPE  
Cara Cowan Watts, AISES, SWE  
Ray Wilsdorf, AWS

#### ADVISORY BOARD:

John Williams, Henry Zarrow

#### COMMITTEE CHAIRS:

##### TECH:

Meg Broge

[mbroge@vtresources.com](mailto:mbroge@vtresources.com)

##### Golf Tournament :

Cris Gillmore

[cris@concreteservicescorp.com](mailto:cris@concreteservicescorp.com)

##### Web site:

Barbara Wollmershauser

[wollmersh@aol.com](mailto:wollmersh@aol.com)

## TULSA ENGINEER

A monthly publication of  
The Engineers' Society of Tulsa, Inc.  
P.O. Box 703065, Tulsa, OK 74170-3065  
A non-profit professional society  
email: [info@tulsaengineer.org](mailto:info@tulsaengineer.org)

# TULSA ENGINEERING FOUNDATION *Members & Contacts 2011*

## **ACI American Concrete Institute**

Phillip Scott (918) 663-1222  
phillip@concreteservicescorp.com

## **AICHe American Institute of Chemical Engineers**

Joseph Smith (918) 760-1257  
jdsmith@sas-ieng.com

## **AISES American Indian Science and Engineering Society**

Daniel Faddis (918) 453-5224  
daniel-faddis@cherokee.org

## **APWA American Public Works Association**

Graham Brannin (918) 596-9806  
gbrannin@cityoftulsa.org

## **ASCE American Society of Civil Engineers**

Kristi Erickson (918) 599-9806  
kristi.erickson@saic.com

## **ASHRAE American Society of Heating, Refrigeration & Air Conditioning Engineers**

Rob Tise (918) 382-6134 robt@aaon.com

## **ASME American Society of Mechanical Engineers**

John Matsson (918) 495-6935  
jmatsson@oru.edu

## **AWS American Welding Society**

Ray Wilsdorf (918) 369-5824  
raywilsdorf@olp.net

## **CSI Construction Specifications Institute**

Jane Baker (918) 747-3282  
janebaker@cox.net

## **EST Engineers' Society of Tulsa**

William Stith (918) 520-1307  
wstith@cox.net

## **IEEE Institute of Electrical & Electronic Engineers**

Larry Paden (918) 527-3900  
REG@paden.biz

## **ISA Instrumentation, Automation and Systems Society**

Andy Lucas (918) 599-7200  
andy@lucascontrolsco.com

## **NSBE National Society of Black Engineers**

Yolanda Gosie (918) 402-4654  
ygocie@hotmail.com

## **ORU Oral Roberts University, Engineering & Physics Department**

Daobin Zhang (918) 495-6943  
dzhang@oru.edu website: egr.oru.edu

## **OSPE Oklahoma Society of Professional Engineers**

Michael Van Schoyck (918) 664-5411  
mvanschoyck@naiengineers.com

## **OSU-Tulsa Oklahoma State University**

Steve Bell (918) 594-8279  
bells@okstate.edu

## **SAME Society of American Military Engineers**

Loretta Turner (918) 459-4579  
L.Turner@WestonSolutions.com

## **SHPE Society of Hispanic Professional Engineers**

Alex Duarte, Olga Duarte (918) 852-3507  
shpetulsasecretary@hotmail.com

## **SME Society of Manufacturing Engineers**

Felix Rosser (918) 447-5432  
felix.rosser@tdwilliamson.com

## **SPE Society of Petroleum Engineers**

Buck Walsh (918) 630-1495  
bwalsh@sm-energy.com

## **SWE Society of Women Engineers**

Christine Hirrill (918) 574-3728  
christine.hirrill@magellanlp.com

## **TCC Tulsa Community College**

Susan Thompson (918) 595-7557  
sthompson1@tulsacc.edu

## **TTC Tulsa Technology Center**

Shea Ferrell (918) 828-5115  
shea.ferrell@tulsatech.org

## **TU University of Tulsa, College of Engineering & Natural Sciences**


Robert Strattan (918) 663-9484  
r.strattan@ieee.org

**When you need services that our advertisers provide, be sure to remember them. Their generosity supports this monthly news bulletin.**

August '11 ISSUE #105

NON-PROFIT RATE  
U.S. POSTAGE  
PAID  
TULSA, OK  
Permit No. 607

Engineers' Society of Tulsa, Inc.  
P.O. Box 703065  
Tulsa, OK 74170-3065

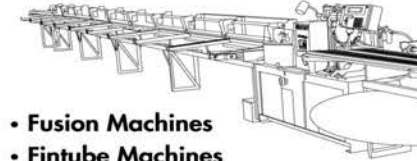




Engineered for Growth™

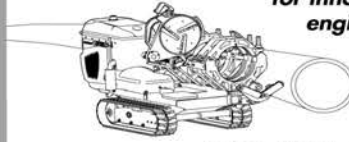
www.englobal.com

ENGlobal Engineering, Inc.  
2448 East 81st Street, Suite 3300  
Tulsa, OK 74137-4288  
918-270-1171 • FAX 918-270-1177



- Fusion Machines
- Fintube Machines
- Custom Design & Manufacturing

We're always on the lookout for innovative engineers!



918-836-8611



LUCAS CONTROLS COMPANY, INC.

— INSTRUMENTATION —  
To measure, transmit, record, alarm & control:

- Flow
- Level
- Density
- Pressure
- Temperature
- Smoke and Fire
- Moisture Content
- Chemical Composition
- Combustible and Toxic Gases

P.O. Box 52366 • Tulsa, OK 74152  
Phone: (918) 599-7200 • Fax: (918) 583-1700  
e-mail: leslie@lucascontrolSCO.com

YOUR AD COULD BE HERE



Input/Output, Inc.

Ph: 918-252-0100  
Fax: 918-252-0507  
800-234-0858

- Level
- Pressure
- Temperature
- Flow
- Vibration

Gas Detection  
Purging Systems  
Intrinsic Safety  
www.ioitulsa.com  
email: sales@ioitulsa.com



Integrated Controls, Inc.

- ✓ flow
- ✓ level
- ✓ density
- ✓ flares
- ✓ incinerators
- ✓ samplers
- ✓ water/gas analyzers
- ✓ gas/flame detectors
- ✓ dryers
- ✓ strainers/filters
- ✓ lighting protection
- ✓ switches

918-747-7820  
integratedcontrols@prodigy.net  
www.integratedcontrolstulsa.com

YOUR AD COULD BE HERE



We've had 14 years of merging talent with opportunity in top Tulsa companies.

We have positions in:  
**Energy, Engineering and Drafting**

Visit us: www.rowland-group.com  
918-836-1900

3851 S. 103rd E. Ave.  
Our other specialties are Accounting & IT



ORAL ROBERTS UNIVERSITY

Engineering, Computer Science, Physics and Mathematics Department

DEGREES OFFERED

1. Bachelor of Science in Engineering (B.S.E.)  
*Major:* Engineering (Computer, Electrical or Mechanical emphasis)
2. Bachelor of Science (B.S.)  
*Majors:* Biomedical Engineering, Computer Information Technology, Engineering Physics, Environmental Sustainability, Mathematics, & Mathematics Education

Contact:  
Dr. John E. Matsson, Chair  
918-495-6935



## **AEI** Automatic Engineering, Inc.

*Mechanical, Electrical and Instrumentation Sales & Service*

**Water & Wastewater Equipment**

**Pumps Valves**

**Instrumentation & Electrical**

1501 E. 6th Street  
Tulsa, OK 74120  
918/585-5703

FAX 918/585-5707  
900-722-2920



**Your Pipeline Integrity partner  
in all your maintenance needs.**

*Trust TDW to provide preparation, assessment and rehabilitation products and services to meet your requirements and specifications. TDW's in-house solutions include: hot tapping & plugging, on-line and off-line cleaning, MFL and geometry inspections, hydrotesting, consulting services and more.*

For more information, call us at **918-447-5100**  
or visit our Web site at [www.tdwilliamson.com](http://www.tdwilliamson.com).

© Registered trademark of T.D. Williamson, Inc. in the United States and in several countries.

**T.D. Williamson, Inc.**  
Your Source for Piping Solutions



- "Journey" through space at one of our Planetarium shows
- Fly the F-15 Tomcat simulator
- "Lift-off" on our new space-themed playground

**Call (918) 834-9900**

3624 N. 74 E. Ave.

(across from the Zoo entrance)

[www.tulsaairandspacemuseum.com](http://www.tulsaairandspacemuseum.com)



Our Business & Industry Services group provides training resources to address employee productivity, compliance, and organizational improvements. Industry Coordinators are ready to customize our services to fit your needs today!

- Lean, Value Stream Mapping and ISO Programs
- Safety and Hazardous Materials
- Supervision and Management
- Technical and Manufacturing Skills
- Customized schedules and more!

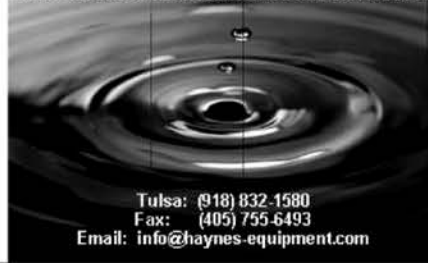
**918-828-5400**

*Preparing People for Success  
in the Work Place*



Water and Waste Water Equipment  
117 NW 132nd Street Oklahoma City, Oklahoma 73114 (405) 755-1357

MANUFACTURERS REPRESENTATIVE AND DISTRIBUTOR



Tulsa: (918) 832-1580  
Fax: (405) 755-6493

Email: [info@haynes-equipment.com](mailto:info@haynes-equipment.com)



**Continuing Engineering & Natural Sciences**

Our mission is to provide a modern, high-quality educational experience for all of our students. We provide the knowledge and principles on which engineering and science are founded in order to graduate engineers and scientists who are technically competent, creative, literate and socially aware.

- Offering degrees in:
- Applied Mathematics
  - Biochemistry
  - Biology
  - Biogeosciences
  - Chemical Engineering
  - Chemistry
  - Computer Science
  - Electrical Engineering
  - Engineering Physics
  - Geosciences
  - Information Technology
  - Mathematics
  - Mechanical Engineering
  - Petroleum Engineering
  - Physics

**For more information contact:**  
Engineering and Natural Sciences  
Advising Office  
\* 918-631-2223 \* 918-631-2224  
\* 918-631-2293  
[www.utulsa.edu/ens](http://www.utulsa.edu/ens)



*design, consulting, installation, maintenance  
and management of low voltage systems*

- Services Include:
- Clock
  - Closed Circuit TV
  - Fore Alarm
  - Intercom
  - LAN & WAN
  - Life Safety & Voice
  - Evacuation
  - Nurse Call
  - Paging
  - Pro Audio Sound
  - Security
  - Telephone



Ph: (918)258-YORK (9675) ~ Fax: (918)258-2444  
Email: [company@yorkes.com](mailto:company@yorkes.com)  
Visit our website ~ [www.yorkes.com](http://www.yorkes.com)

ABC National Excellence in Construction Award - Specialty Contractor  
OK Alarm Lic. 0016 - AR Alarm Lic. E014



**College of Engineering and Natural Sciences**

- |                              |                        |
|------------------------------|------------------------|
| Applied mathematics          | Electrical Engineering |
| Biochemistry                 | Engineering Physics    |
| Biological science           | Geosciences            |
| Chemical engineering         | Mechanical Engineering |
| Chemistry                    | Petroleum Engineering  |
| Computer science             | Physics                |
| Computer information systems |                        |

- Quality teaching: state-of-the-art faculty research
- Personal attention: student-teacher ratio is 10 to 1
- Undergraduate research opportunities
- Continuing education conferences and seminars

For information or to schedule a visit,  
call (918) 631-2307 or write to: Office of Admission  
600 South College Avenue, Tulsa, OK 74104-3189  
E-mail: [admission@utulsa.edu](mailto:admission@utulsa.edu)  
<http://www.utulsa.edu>