



42nd Annual | Distinguished Engineer Awards Luncheon | April 4, 2008
Texas Tech University | College of Engineering

Distinguished Engineer

Award Program Information

The measure of a college's distinction and influence depends greatly upon the achievement of its alumni and the positions they earn for themselves in their respective communities and fields of endeavor. To recognize some of the most outstanding alumni of Texas Tech University, the College of Engineering has established the Distinguished Engineer Award.

This year's awards mark the 42nd anniversary of the program, initiated by Dean John R. Bradford in the 1966-67 academic year.

Purpose and Philosophy

The purpose of the program is to recognize and honor engineering alumni who have made significant contributions to society and whose accomplishments and careers have brought credit to the College of Engineering of Texas Tech University and to the engineering profession as a whole.

This program does more than honor these former students. It spotlights the accomplishments of the College of Engineering of Texas Tech, and thereby increases the pride of alumni, students, faculty, and staff. It likewise presents to the people of Texas and the nation tangible evidence of the effectiveness of the progress of engineering at Texas Tech.

In establishing this program, it was recognized that these awards were to be given for outstanding achievement both inside as well as outside the profession and that no compromises diminishing the significance of the awards would be made.

To be eligible for the Distinguished Engineer Award, an individual must:

- Be distinguished in their profession, life work, or other worthy endeavors, and have received recognition from contemporaries.
- Be a person of such integrity, stature, and demonstrated ability that the faculty, staff, students, and alumni will take pride in and be inspired by their recognition.
- Have demonstrated a continuing interest in areas outside the field of engineering such as to bring honor and prestige to the profession.
- Have received a degree from the College of Engineering at Texas Tech University.

2008 Distinguished Engineer Awards Luncheon

Frazier Alumni Pavilion | April 4, 2008 | 11:30 a.m.

Welcome and Introduction of Guests

Maggi Walker

Vice President of Engineering Solutions,
Technology Centers and Manufacturing
and Engineering Work Processes
Dow Chemical Company
1996 Distinguished Engineer

Invocation

R. Don Cash

President/Chairman/CEO
Questar Corporation, Retired
1992 Distinguished Engineer

Presentation of 2008 Distinguished Engineers

Thomas J. Zachman

Introduction by *Richard Greyson Geer*
Civil Engineering and
Architecture Engineering Senior

Duffer B. Crawford

Introduction by *Alisha Bloodworth*
Chemical Engineering Senior

Presentation of University Medallions and Plaques

Jon Whitmore, Ph.D.

President, Texas Tech University

Pamela A. Eibeck, Ph.D., PE.

Dean, College of Engineering

Remarks

Pamela A. Eibeck, Ph.D., PE.

Conclusion

Maggi Walker



Duffer B. Crawford

Distinguished Engineer – 2008
B.S., Chemical Engineering, Texas Technological College, 1941

*Manager, Cryogenics Division
M. W. Kellogg Co., retired*

Wife:

Hazel, deceased

Children:

Beverly, Sheryl, and Brian

Duffer Crawford was born in 1919 and grew up in Haskell, TX. In 1937, he entered Texas Tech with the intention of becoming an aeronautical engineer until persuaded by his professor, Dr. A. G. Oberg, to major in chemical engineering, and thus began his memorable career. Upon Duffer's graduation from Texas Tech in 1941, Dr. R. C. Goodwin, head of the engineering department and later president of Texas Tech, sponsored him to receive a scholarship to the University of Texas to pursue his master's and doctorate degrees. In January 1943, Duffer left the University of Texas to assist his UT professor, Dr. Judson Swearingen, who had been commandeered in September 1942 by the Kellogg Corp. in New York City to resolve problems related to the pumps and compressors required for gaseous diffusion uranium enrichment at the K-25 plant for the Oak Ridge, TN Atom Bomb Manhattan Project. While working on this assignment, Duffer developed the detailed design specifications of the pump seals which were used for the diffusion process. Gaseous diffusion was one of three processes that provided uranium-235 for the Hiroshima weapon "Little Boy." The design of that seal remains in use and is considered classified information today.

Duffer is proud to have been responsible for some important technical accomplishments, a few of which are listed here. He worked jointly with Carroll Claitor, Texas Tech graduate (BSChE '41), to determine and publish *The Thermodynamic Properties of Air* (1946-47). For American Machine and Foundry, he was the first to solve the problem of achieving continuous onstream production of foam rubber by using a Teflon coating to minimize latex coagulation on equipment surfaces. Duffer developed an aluminum extrusion process for production of fuel rods and created a special welding procedure and remote operated vessel closure concept for the hydrogen bomb project at Savannah River, SC. Later, as a result of troubleshooting at an oxygen plant where leaking flanges had resulted in an explosion and caused the deaths of three workers, Duffer implemented design requirements converting cryogenic plants to utilize all-welded construction in order to prevent explosions from such leaks.

In response to the 1957 Soviet launch of Sputnik, the U.S. government approved funding for the production of liquid hydrogen and liquid oxygen for its space program. Then at Air Products & Chemicals, Duffer designed the world's first commercial liquid hydrogen production facility for NASA, including working with various state transport commissions to develop over-the-road transport equipment and safety regulations.

Duffer worked for the M. W. Kellogg Company from 1960-1985. Early in 1961, he invented the process used in the world's largest and most successful helium recovery plant for the National Helium Company in Liberal, KS as well as for the U.S. space program. That same process technology paved the way for M. W. Kellogg to become the leader in the design and construction of liquefied natural gas (LNG) facilities worldwide. Based on Duffer's LNG expertise, he has received awards from the governments of Algeria, Belgium, Kuwait, and Korea for his work. During 1966-1969, he was responsible for designing the cryogenic systems required for the world's largest 107-ton superconducting magnet associated with the ZGS 12-foot bubble chamber at Argonne National Laboratory in IL.

Having always loved what he does, Duffer says, "I have never really worked a day in my life." Still in demand, he is an active consultant today.

It is a privilege and an honor for Texas Tech University's College of Engineering to select this outstanding alumnus for recognition.

Duffer B. Crawford is declared a DISTINGUISHED ENGINEER.

Thomas J. Zachman

Distinguished Engineer – 2008

B.S., Civil Engineering, Texas Tech University, 1974

*Senior Vice President
Fluor Corporation*

Wife: Joyce

Children: Judith, Jason, Christopher, Christine



Tom Zachman was born in Wichita, KS, eventually moving to Fort Worth, TX where he graduated from high school. He received his BS in Civil Engineering from Texas Tech University in 1974.

After graduation, Tom joined the Fluor Corporation in Houston, TX, as a civil/structural design engineer where he worked on various domestic and international projects in the oil and gas refining and chemical industries. While at Fluor he advanced in increasing positions of responsibility into engineering management and project management.

In 1985, he was assigned to the Power division of Fluor's Houston office where he managed engineering and construction of power projects including a 105MW diesel power project for Enron in the Philippines and the last waste-to-energy project built in the United States in Niagara Falls, NY, for American Ref-Fuel.

In 1997, Tom managed the Houston Power division of Fluor and in 2000 was promoted to vice president of the Houston office of Duke/Fluor Daniel, a partnership between Fluor and Duke Energy to engineer and construct power projects. From 1999 through 2003 the Houston office of Duke/Fluor Daniel, Tom completed seventeen simple and combined cycle power plants throughout the United States with a total electrical output of over 11,000 MW.

In 2003, Tom was appointed vice president of Operations for Fluor's Energy and Chemicals business with overall responsibility for domestic and international projects executed from the Houston office in the upstream, refining, and chemicals businesses. Earlier this year 2008, Tom was promoted to senior vice president of Fluor with responsibility for project execution of more than \$25 billion energy and chemicals projects by over 7,000 personnel in Houston, Calgary, southern California, Greenville, SC, and Mount Laurel, NJ.

Tom currently serves on the board of directors for the Lamar Educational Awards Foundation for the Lamar Consolidated Independent School District in Richmond and Rosenberg, TX. He is also on the board of directors of the Fort Bend Chamber of Commerce. Tom has served in various leadership positions for his church and is currently assistant executive director of Fishers of Men Lutheran Church in Sugar Land. For six years he served in adult leadership positions with the Boy Scouts and is now the chartered organization representative for a troop at his church. Previously he served on the board of directors for the Texas Energy Center in Sugar Land. Last year he completed six years as a member of the Civil Engineering Advisory Council at Texas Tech and is currently Fluor's executive sponsor for Texas Tech, designated as one of Fluor's nine partner universities in the nation.

Tom enjoys coin collecting, genealogy, camping, and snow skiing. Tom and his wife, Joyce, reside in Richmond, TX, and have four children: Judith, Jason, Christopher, Christine, and one granddaughter. Christine is a freshman at Texas Tech.

It is a privilege and an honor for Texas Tech University's College of Engineering to select this outstanding alumnus for recognition.

Thomas J. Zachman is declared a DISTINGUISHED ENGINEER.

Distinguished Engineers

2007

David H. Barr	Mechanical Engineering	1971
G. Kemble "Kem" Bennett	Industrial Engineering	1970
William B. Hagood	Civil Engineering	1969
Harold R. Inman	Petroleum Engineering	1950

2006

Ajay M. Marathe	Industrial Engineering	1983
Jerry L. Morgensen	Civil Engineering	1965
Travis A. Simpson	Electrical Engineering	1981

2005

J. Gregory Boyd	Civil Engineering	1976
Francisco "Frank" A. Figueroa	Electrical Engineering	1967
Gerald C. Murff	Mechanical Engineering	1961
Alvin Dale Williams	Engineering Technology	1975

2004

Joseph J. Beal	Civil Engineering	1968
Philip L. Frederickson	Industrial Engineering	1978
Louis D. Jones	Petroleum Engineering	1976
Chung-Shing "C.S." Lee	Electrical Engineering	1978
	Business Administration	1982

2003

Roy A. Battles	Mechanical Engineering	1969
William M. Marcy	Electrical Engineering	1964, 1966
	Interdisciplinary Engineering	1972
Fredrick S. Yeatts	Electrical Engineering	1970

2002

Douglas E. Barnhart	Civil Engineering	1969
Joseph C. Martz	Chemical Engineering	1986
Jerry S. Rawls	Mechanical Engineering	1967
Richard D. Smith	Industrial Engineering	1966
Cloyce A. Talbott	Petroleum Engineering	1958

2001

Ming Chiang	Electrical Engineering	1978
Enoch L. Dawkins	Petroleum Engineering	1960

2000

Robert C. "Bob" Banasik	Industrial Engineering	1967
Robert R. Click	Chemical Engineering	1948
W. R. "Rick" Hamm	Civil Engineering	1970
Jimmy D. Williams	Mechanical Engineering	1972

1999

Dale Courtney	Industrial Engineering	1971
Julie Spicer England	Chemical Engineering	1979
Dain M. Hancock	Mechanical Engineering	1966
Raymond C. Vaughn	Engineering Technology	1973
	Mechanical Engineering	1976*

1998

William "Bill" Hervey	Textile Engineering	1949
David L. Hirschfeld	Civil Engineering	1962
Raymond B. Ince	Mechanical Engineering	1948*
Thomas S. Moore	Mechanical Engineering	1964, 1965
Steven W. Nance	Petroleum Engineering	1978
Garth Nash	Electrical Engineering	1963
Bill M. Sanderson	Chemical Engineering	1960
David E. Sharbutt	Electrical Engineering	1971
Charles F. Winder	Industrial Engineering	1979

1997

Woodrow W. Hitchcock	Mechanical Engineering	1969
Rick D. Husband	Mechanical Engineering	1980*
Herbert A. Mang	Civil Engineering	1974
Jeff D. Morris	Chemical Engineering	1974
Harry L. Tredennick, III	Electrical Engineering	1970

1996

Keh-Shew Lu	Electrical Engineering	1969
James H. Posey	Petroleum Engineering	1964
Wolfgang Vogel	Industrial Engineering	1970
Margaret R. Walker	Chemical Engineering	1974
C. Clayton Yeager	Civil Engineering	1964

1995

William G. Burnett	Civil Engineering	1971
Patrick R. Gallagher	Electrical Engineering	1964
Bob L. Herd	Petroleum Engineering	1967
Larry D. McVay	Mechanical Engineering	1970
David G. Wight	Petroleum Engineering	1964

1994

Raymond E. Goff	Industrial Engineering	1969, 1970
William R. "Bob" Herrin, Jr.	Petroleum Engineering	1958
Karen S. Hogg	Industrial Engineering	1974
Mary Jo Poindexter	Civil Engineering	1968
Louis "Jack" Powers	Mechanical Engineering	1939*
Arati Prabhakar	Electrical Engineering	1979

1993

Charles A. Bassett, II	Electrical Engineering	1960*
Jack L. Clem	Mechanical Engineering	1975
L. D. "Buddy" Sipes, Jr.	Petroleum Engineering	1957
J. Rex Vardeman	Civil Engineering	1961
Gary B. Wood	Electrical Engineering	1973, 1975, 1977

1992

Jack L. Byrd	Petroleum Engineering	1956
R. D. Cash	Industrial Engineering	1966
F Max Merrell	Chemical Engineering	1957
James G. Renfro	Electrical Engineering	1959

1991

Arnold Maeker	Civil Engineering	1946*
E. Dave Newman	Mechanical Engineering	1964
Albert A. "Pete" Smith	Electrical Engineering	1966
John Michael Stinson	Industrial Engineering	1966
Bill G. W. Yee	Electrical Engineering	1961, 1964

1990

William A. Blackwell	Electrical Engineering	1949
R. David Damron	Chemical Engineering	1971
Robert E. Dragoo	Mechanical Engineering	1962
Bill D. Helton	Electrical Engineering	1964
Allen P. Penton	Chemical Engineering	1957

1989

Chester A. Green	Civil Engineering	1947
Jerry D. Holmes	Electrical Engineering	1959
Charles E. Houston	Electrical Engineering	1931*
Joseph E. Minor	Civil Engineering	1974
L. Homer Moeller	Industrial Engineering	1962

1988

Melvin Bobo	Mechanical Engineering	1949*
E. R. Brooks	Electrical Engineering	1961
Larrie F. Judd	Electrical Engineering	1965, 1967, 1969
H. Bennett Reaves	Civil Engineering	1948*
Noel D. Rietman	Petroleum Engineering	1957

1987

George C. Beakley, Jr.	Mechanical Engineering	1947*
James A. McAuley	Petroleum Engineering	1953*
J. Garland Threadgill	Civil Engineering	1950*
D. Wyman Tidwell	Chemical Engineering	1961*

1986

Gerald L. Farrar	Chemical Engineering	1942*
T. Scott Hickman	Petroleum Engineering	1957
Robert E. Hogan	Civil Engineering	1950*
George F. Watford	Petroleum Engineering	1948*

1985

Glenn C. Bandy	Electrical Engineering	1949
James W. Clifton	Electrical Engineering	1960*
Jesse L. George, Jr.	Petroleum Engineering	1947*
Charles L. Harris	Textile Engineering	1947*
James W. Lacy	Petroleum Engineering	1949*
Robert J. Lewis	Civil Engineering	1949
Russell H. Logan	Electrical Engineering	1951
Wendell Mayes, Jr.	Electrical Engineering	1949
William D. Trammell	Chemical Engineering	1957
Edward E. Whitacre, Jr.	Industrial Engineering	1964
Alpha M. Wiggins	Electrical Engineering	1933*

1984

Jerry C. Edmonson	Electrical Engineering	1963
Robert L. Hale	Textile Engineering	1948*
John C. Mihm	Chemical Engineering	1964
James P. Myers	Industrial Engineering	1969
Thomas J. Reeves	Civil Engineering	1963
Kenneth W. Robbins	Petroleum Engineering	1943*

1983

Gary E. Frashier	Chemical Engineering	1958
Harley D. Henry	Petroleum Engineering	1959
Leon Ince	Mechanical Engineering	1936*
E. Carlyle Smith, Jr.	Architecture & Civil Engineering	1963*
Joe A. Stanley	Civil Engineering	1939*
Walter D. Warren	Electrical Engineering	1959

1982

Larry R. Byrd	Industrial Engineering	1957
Paul B. Crawford	Chemical Engineering	1943
Robert B. Dyer	Industrial Engineering	1960
Joseph W. Luckett, Jr.	Petroleum Engineering	1948

1981

Roger K. Owen	Electrical Engineering	1948
Richard I. Robinson	Chemical Engineering	1952*
Ben R. Stuart	Mechanical Engineering	1957
Allan J. Tomlinson, Jr.	Chemical Engineering	1954

1980

Charles Robert Black	Petroleum Engineering	1958
James L. D'Acosta	Industrial Engineering	1950
Hugh R. Fewin	Civil Engineering	1957*
James Harold Yeager	Chemical Engineering	1942

1979

Scott G. Arbuckle	Industrial Engineering	1957
Lynn H. Elliott	Electrical Engineering	1958
Norman M. Jasper	Industrial Engineering	1960
H. Alan Nelson	Petroleum Engineering	1947*

1978

Richard W. Hurn	Mechanical Engineering	1940*
T. A. Rogers	Electrical Engineering	1928*
Gerald R. Seemann	Mechanical Engineering	1959
Horace L. Smith	Civil Engineering	1948*

1977

John S. Ball	Chemical Engineering	1934
Donald R. Clark	Industrial Engineering	1959
A. L. Kincheloe	Civil Engineering	1950*
Orval L. Lewis	Mechanical Engineering	1939*

1976

Charles Ovid Baker	Chemical Engineering	1939*
Dan T. McDonald	Chemical Engineering	1938*
Evan E. Roberts	Architectural Engineering	1948
Billie J. Whitworth	Industrial Engineering	1949*

1975

Mack Atcheson	Chemical Engineering	1942
Ray Butler	Petroleum Engineering	1949
George Raymond Coffman	Electrical Engineering	1936*
George W. Dupree	Electrical Engineering	1938
Herbert S. Erskine	Petroleum Engineering	1950
Howard Houston Hinson	Geological Engineering	1934*
Guillermo E. Perea	Textile Engineering	1951*
Berl M. Springer	Industrial Engineering	1943*
Louis Dixie Stevens	Electrical Engineering	1948
David Charles Williams	Mechanical Engineering	1947

1974

John R. Bradford	Chemical Engineering	1942*
Henry H. Meredith, Jr.	Mechanical Engineering	1939*
John W. Sheehan	Chemical Engineering	1939*
R. L. Williams	Mechanical Engineering	1941

1973

James W. Harrell	Textile Engineering	1935*
A. M. L. Kube	Industrial Engineering	1942
Paul C. Nail	Mechanical Engineering	1947*
James H. Wright	Chemical Engineering	1948*

1972

J. Fred Bucy	Engineering Physics	1951
Arthur W. Busch	Civil Engineering	1950*

1971

Roy Butler	Petroleum Engineering	1949
Earnest F. Gloyna	Civil Engineering	1946
Edwin B. Locke	Mechanical Engineering	1948*
Donovan Maddox	Textile Engineering	1934*

1970

Miles Roger Clapp	Mechanical Engineering	1933*
Lester Lynne Kilpatrick	Electrical Engineering	1946*
Jack F. Maddox	Textile Engineering	1929*

1969

R. Trent Campbell	Civil Engineering	1932*
W. Lyle Donaldson	Electrical Engineering	1938*
Dysart E. Holcomb	Chemical Engineering	1937

1968

W. Austin Davis	Mechanical Engineering	1936*
Charles W. Woolridge	Textile Engineering	1930*

1967

William W. Akers	Chemical Engineering	1943
Byron J. Bennett	Electrical Engineering	1943
Charles H. Feltz	Mechanical Engineering	1940*
H. Elliott Knox	Textile Engineering	1935

*Deceased



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