## Dr. Dennis John Fallon

Dennis John Fallon is presently The Citadel Distinguish Professor of Engineering Education. He is formerly the Dean of the School of Engineering and holds the Louis S. LeTellier Chair at The Citadel in Charleston, South Carolina. He received his BSCE from Old Dominion University (ODU) with honors in 1970, and his MSCE and PhD. from North Carolina State University in 1972 and 1980, respectively.

Dr. Fallon's industrial experience includes seven years at Carolina Power and Light Company in Raleigh, NC, two years as Chief Structural Engineer with a consulting firm, and three years with the Underwater Explosion Research Division in Portsmouth, Virginia. He is a Professional Engineer in the State of South Carolina. Dr. Fallon's academic career includes six years as an Assistant Professor at ODU and 22 years at The Citadel where he served as Head of the CEE Department for ten years (1993-2003).

An active member of the Southeastern Section of American Society for Engineering Education (ASEE), Dr. Fallon has held numerous positions within the organization including the Chair of the Civil Engineering Division and the Administrative Unit, Conference Site Coordinator, Newsletter Editor for three years, Technical Program Chair and Instructional Unit Chair from 1994 to 1995, and was elected President of the Southeastern Section from 1996 to 1997 and then again from 2003 to 2004. He has also served for three years as the National Campus Representative and has recently begun a three-year term as Director of the CE Division of the National ASEE. In addition, he served a three-year term as Newsletter Editor of the CE Division. He is completing the second year of a two-year term as the Zone II representative on the National ASEE Board of Directors.

Dr. Fallon has been active in the American Society of Civil Engineers, where he has achieved the grade of Fellow. He has also served as President of the Eastern Branch in Charleston, SC and as Secretary, Vice President, and President of the South Carolina Section of ASCE. He has served the State of South Carolina by judging a number of times the competition for the engineering Excellence Award present annual by the American Council of Engineering Companies (ACEC.) In addition he has supported the state Board of Registration of Professional Engineers by serving on professional panels to evaluate portfolios of individuals seeking registration in the South Carolina

Dr. Fallon has received such prestigious awards as the Cumberland Gap Chi Epsilon Award for Teaching Excellence, the James Grimsley Citadel Teaching Excellent Award, Thomas Evans Best Instructional Paper at the Southeastern Section of ASEE conference in 1990, and a Section Leadership Award from the South Carolina Section of ASCE; he is also a five-time recipient of the Outstanding CE Professor at ODU. Dr. Fallon is a member of Tau Beta Pi, Chi Epsilon, and Phi Kappa Phi. He is also received the Tony Tilman Award for service to the Southeast Section of ASEE.

Dr. Fallon's research interest is in the area of engineering education with a specific emphasis in the development of cognitive skills in students and improving their motivation in the classroom.

**Change in Engineering Education**
**One Professor View**
**A Look Backwards and Forwards**

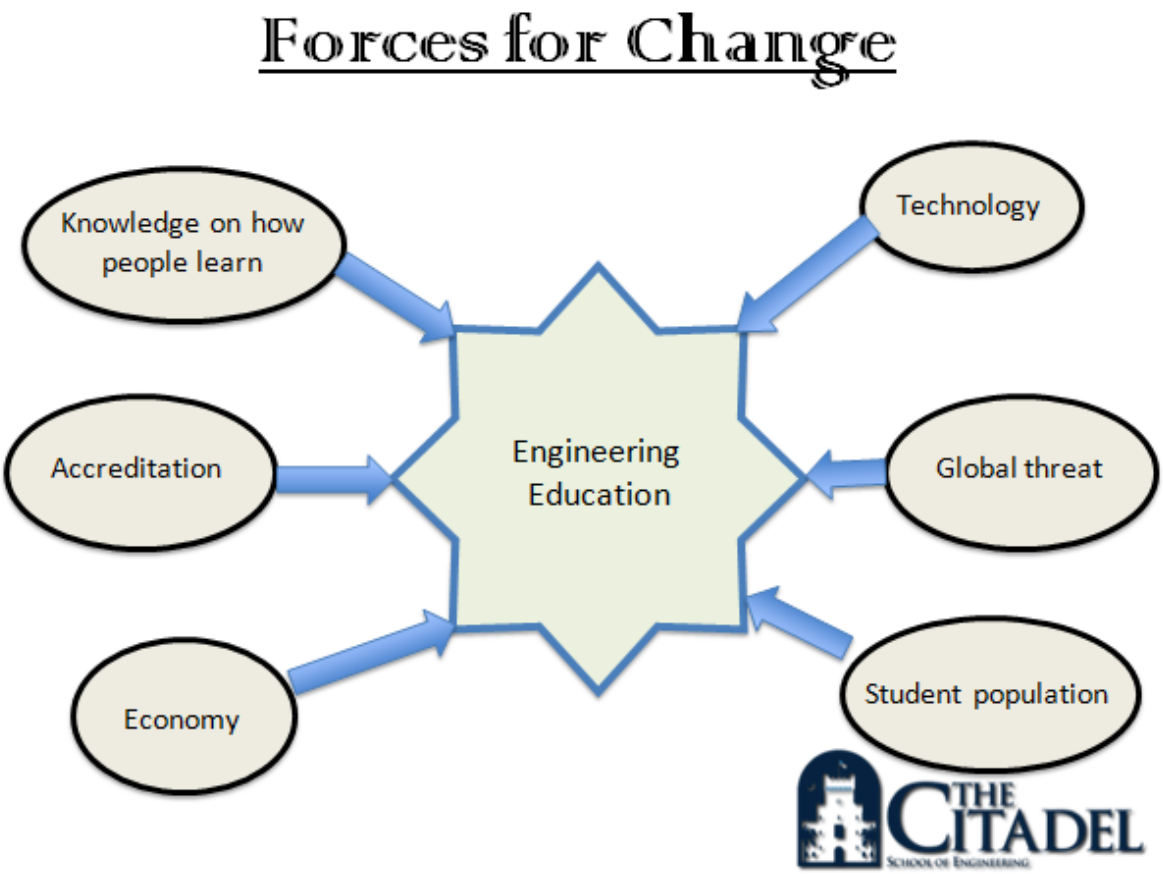
**Dennis J Fallon, PE, PhD, F.ASCE, F.ASEE**
**The Citadel Distinguished Professor**
**Of**
**Engineering Education**

## Opening Remarks

**Our Challenge**
**We are educating people to use tools and knowledge that may not even be known now with even more limited resources**

**May we live in exciting times**

**It was the best of times and it was the worst of times**



**Caveat on Discussion**

**Although we will address each on of the forces for change separately, they are not separate but in fact are intertwined together. This adds to the complexity of the changes**

**Technology**

- **Slide Rule my generation**
- **Now just about everyone has a computer**
- **Available computer software—push a button**
- **Distance Learning**
- **Simulation software**
- **Use of emailing**
- **Use of the Internet versus books, periodicals, journals etc.**
- **Use of Facebook , Twitter, You Tube etc**

**How People Learn**

- **Lecture my generation—focused on the teacher**
- **Great strides in the fields of psychology and education has been made in understanding the learning process**
- **Now focus on the facilitation of learning-student centers**
- **Types of Learning Styles**
- **More use of cooperative and student teaming teaching—students teaching students**
- **Transform novice learners to expert learners**
- **Learning disabilities**

**Accreditation**

- **First one done by Citadel 5 pages long**
- **Before 2000 basically bean counting**
- **Now we still count some of the beans but we also need to show assessment—takes time**
- **Very near future (if not now) we will have to prove that the student are really learning**
- **Scholarship of Teaching as well as Assessment are becoming more important**
- **ASEE "Creating a Culture for Scholarly and Systematic Innovation in Engineering Education."**

**Economy**

- **The Citadel in 1997 received 44% of it funding from the state**
- **Now it receives about 9.5%**
- **Faculty members are having to seek additional funding sources**
- **There is a trend for more accountability and justification**

- **Everyone is expected to do more with less**
- **Tuitions continuing to raise and support from gov't continue to decrease—we are in a cutting atmosphere**
- **State adding pressure not to increase tuitions**
- ***But this too shall pass***

**Student Population**

- **When I graduated one women in School and very few African-Americans (in fact I recall none)**
- **The Key Word here is Diversity**
- **Women make up 60% of the college population—if anything in makes good business sense.**
- **Now Women make up around 20%. Only around 8.5% of PE are women. Similar numbers for African-American**
- **We need to change the message**
- **In this complex society we need to have everyone at the table.**

**Global Threat**

- **We were the center of all engineering education when I graduate**
- **China (as well as India) are now producing many more engineers than we do each year**
- **Their economy are growing at a faster rate than ours**
- **A project now through technology may never sleep**
- **However, we are still the hub of innovation and creative**
- **Challenge will be to provide the students opportunity to develop this skills**
- **In addition, I believe that we will need to develop the engineering leaders of the future—the question become how are we going to adapt our curriculums to do this???**

**Bibliography**

- **Some Books on changes**
  - **Holistic Engineering Education by Grasso and Burkins**
  - **Educating the Engineer of 2020 by National Academy of Engineering**
  - **Vision for Civil Engineering in 2025 by ASCE**
  - **Leadership Can Be Taught by Parks**
  - **Liberal Education in Twenty First Century By Ollis**
  - **Body of Knowledge for the 21st Century by ASCE**
  - **Changing Practices in Evaluating Teaching by Seldin**
  - **Building a Scholarship of Assessment by Banta**
  - **How Student Learn—History, Mathematics and Science by National Research Council**
  - **How People Learn by National Research Council**
  - **Learning and Memory-An Integrated Approach by Anderson**
  - **New Paradigms for College Teaching by Campbell and Smith**
  - **Learner Centered Teaching by Weimer**
  - **Professional Learning Communities at Work by Defour**
  - **Changing the Conversation By National Academy of Engineering**