



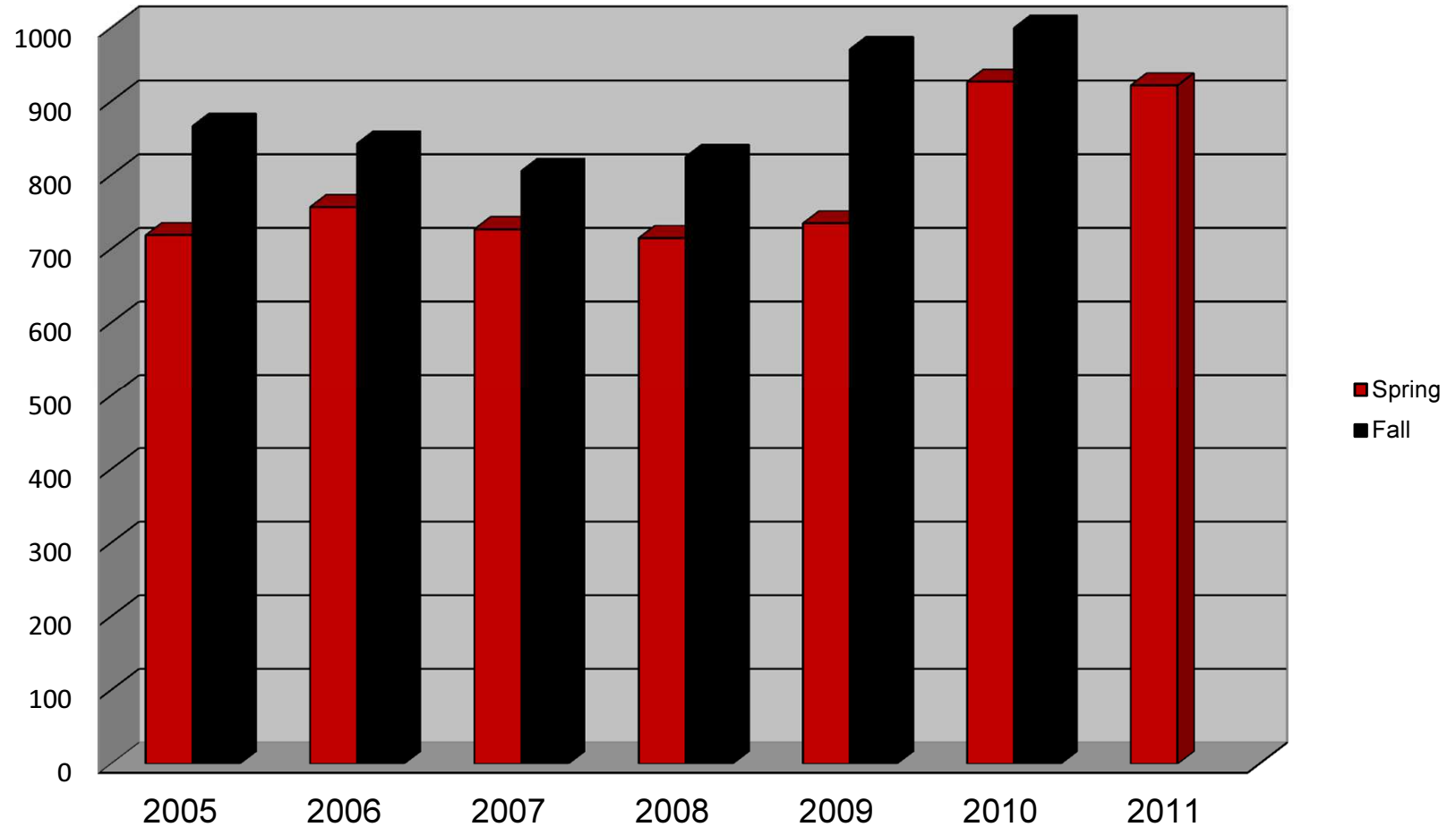
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Dr. Jharna Chaudhuri
Professor and Chair
Department of Mechanical Engineering
Texas Tech University
Presentation to
ME Industrial Advisory Board,
ME Academy, ASME Banquet
April 2011



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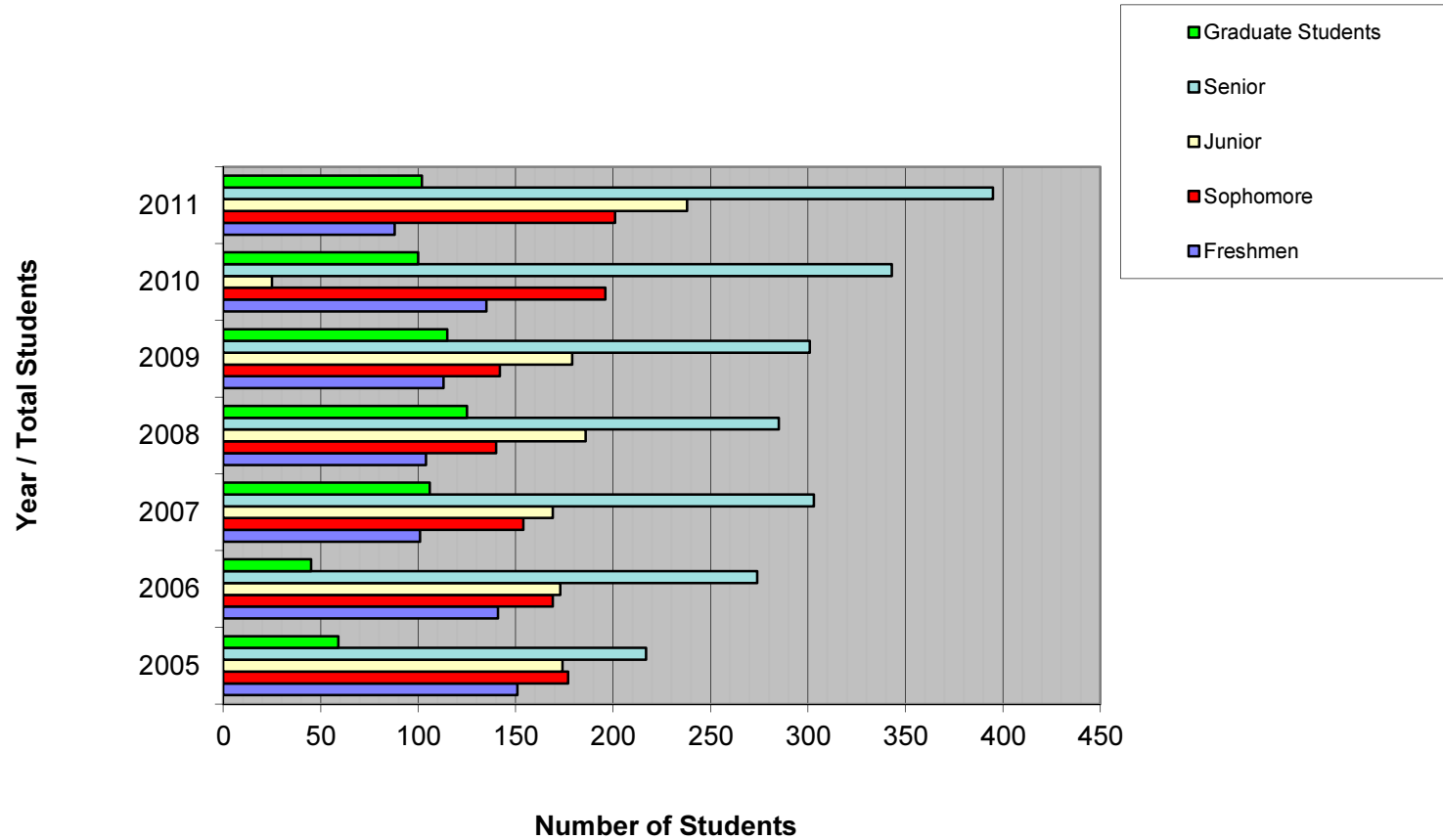
Undergraduate Enrollment History in Mechanical Engineering at TTU





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Enrollments

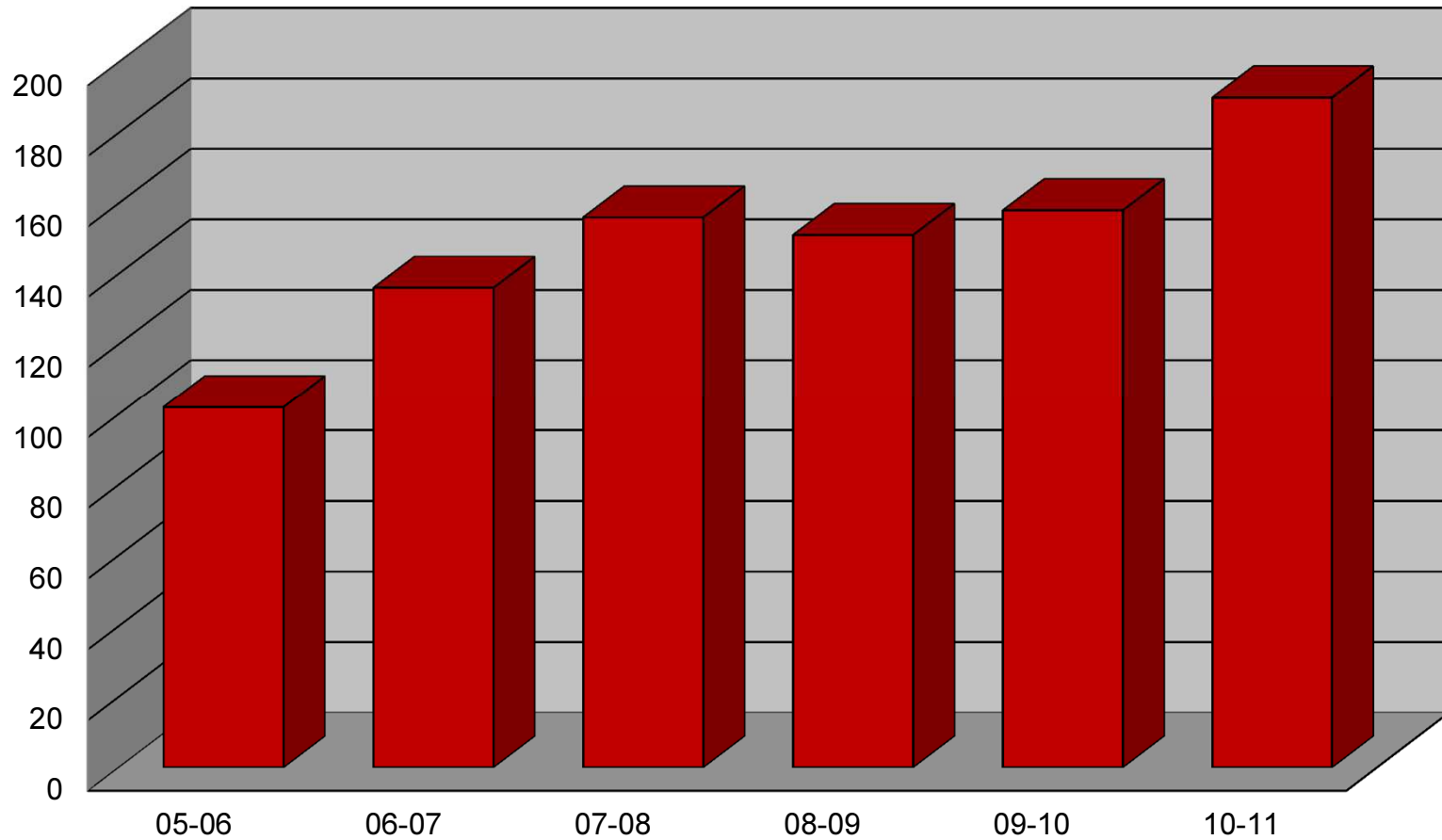




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Bachelor's Degrees Awarded in Mechanical Engineering at TTU

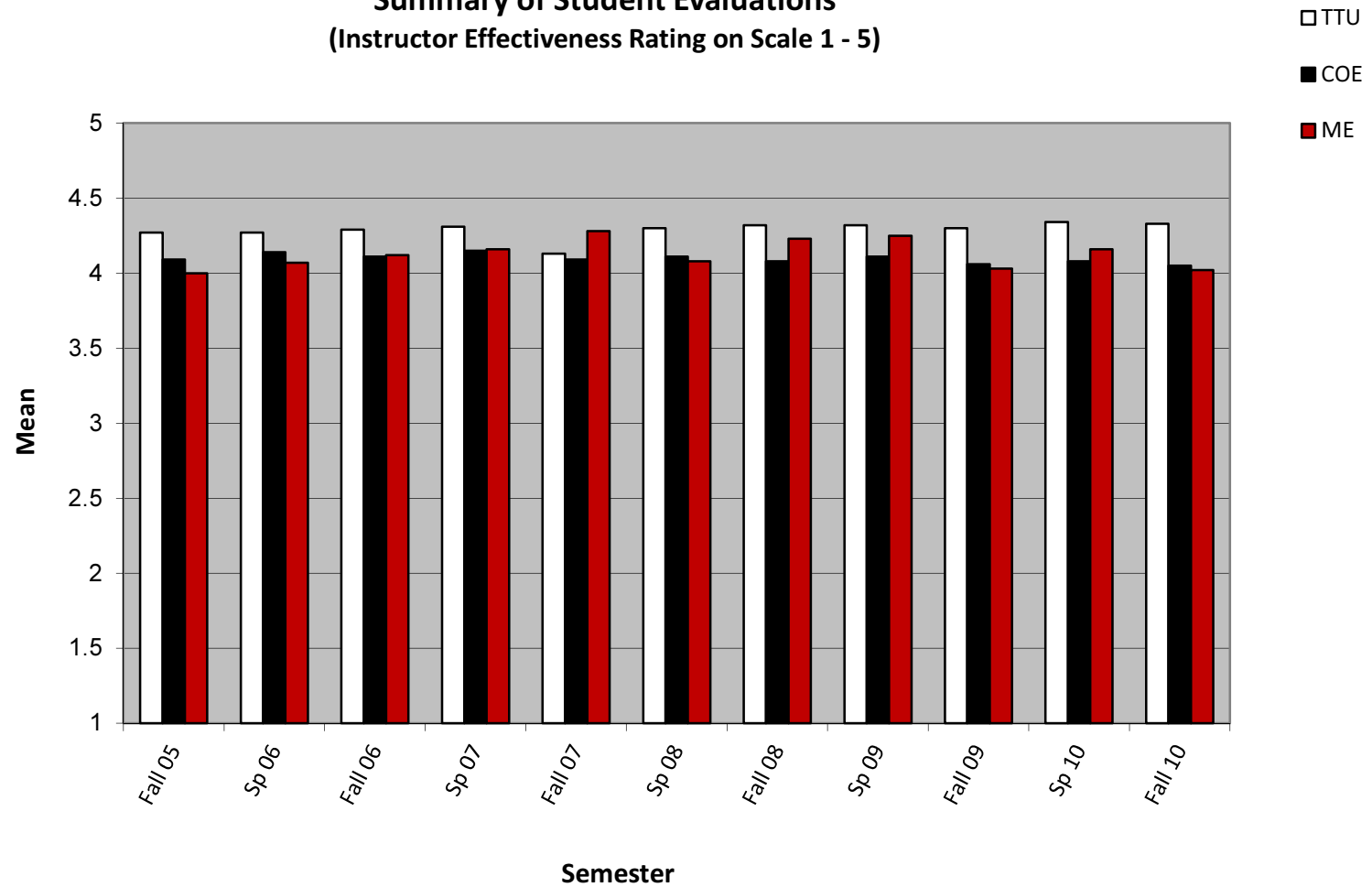
(Degrees awarded for Sp 11 are estimated)





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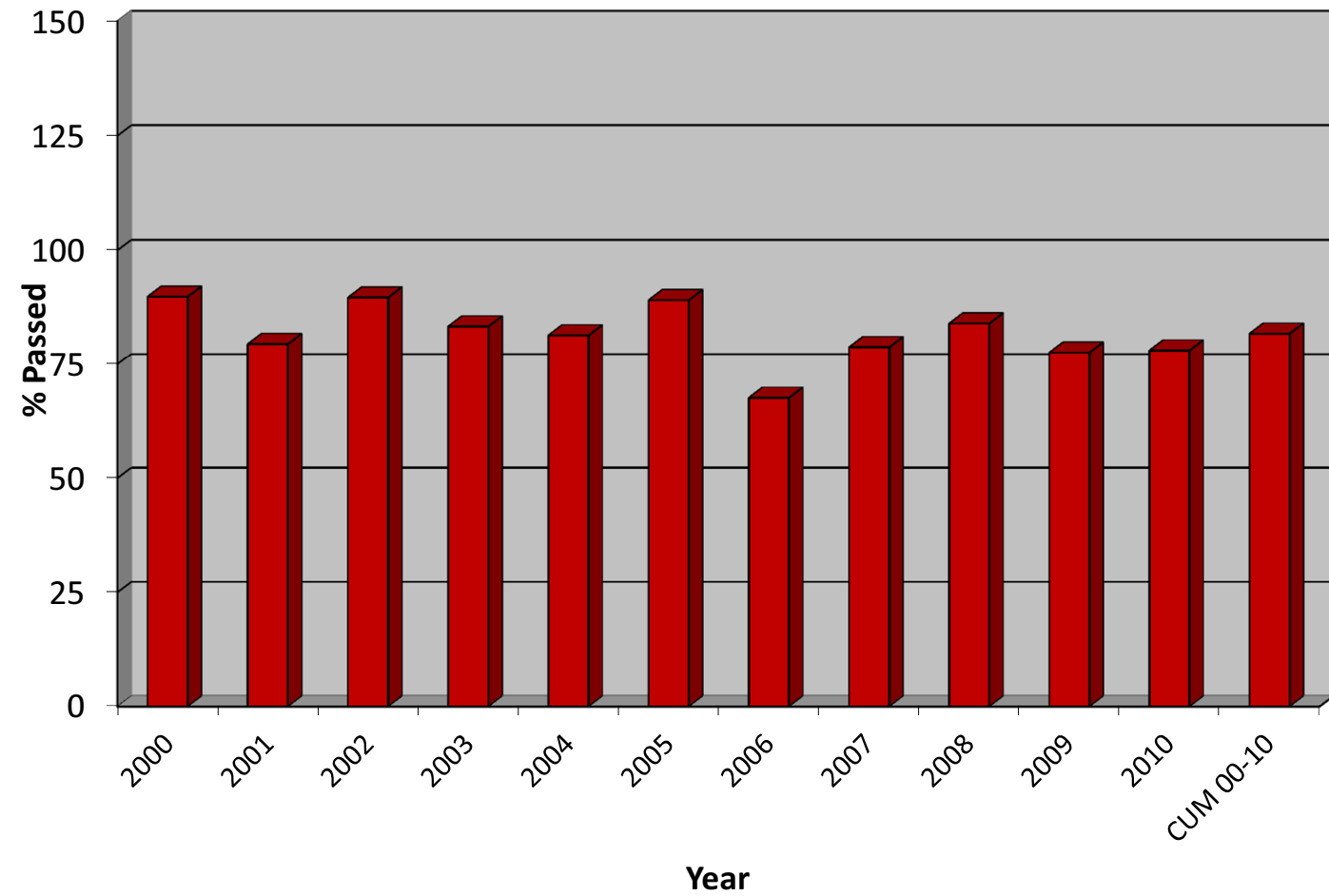
Summary of Student Evaluations (Instructor Effectiveness Rating on Scale 1 - 5)





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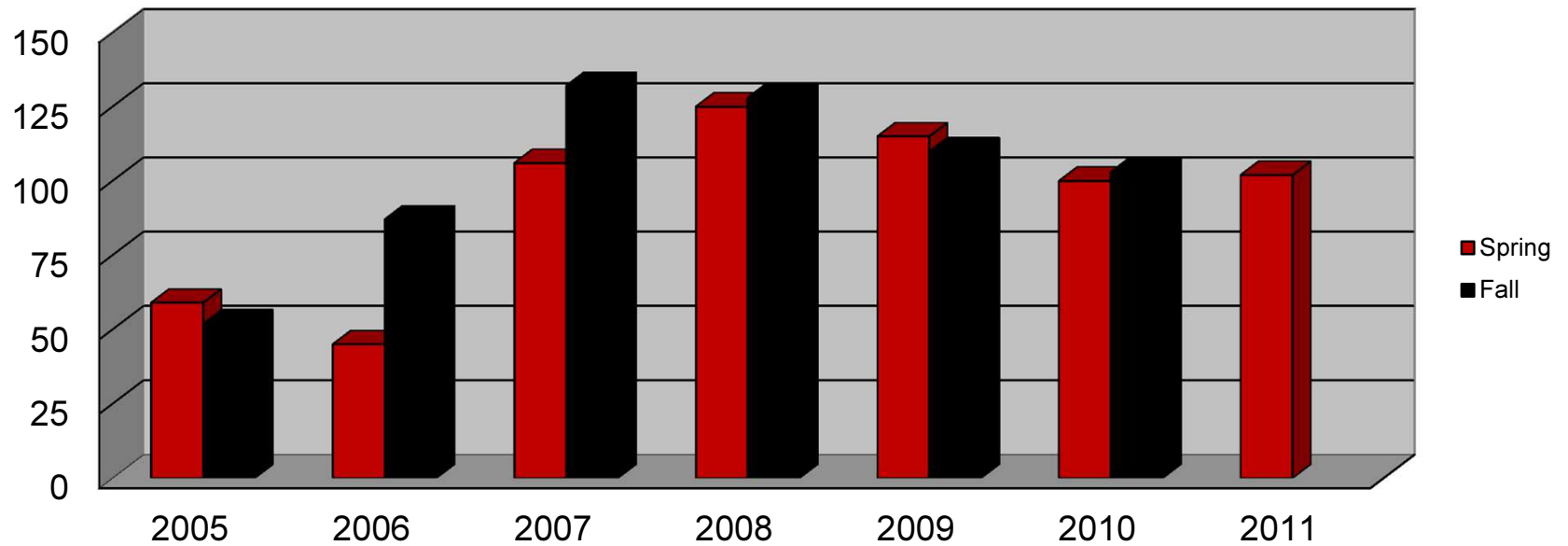
TTU Mechanical Engineering FE Exam Pass Rate





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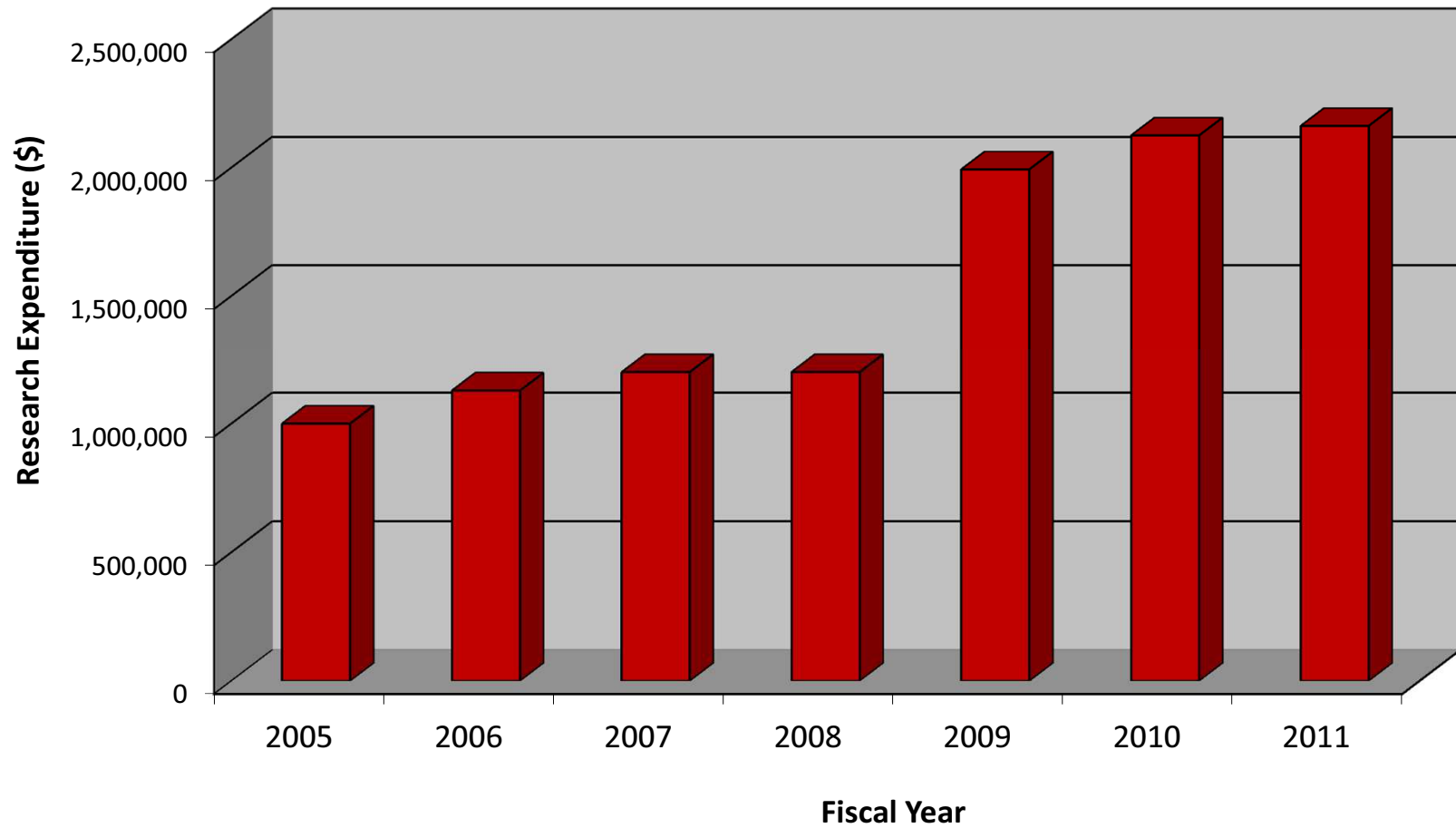
Graduate Enrollment History in Mechanical Engineering at TTU





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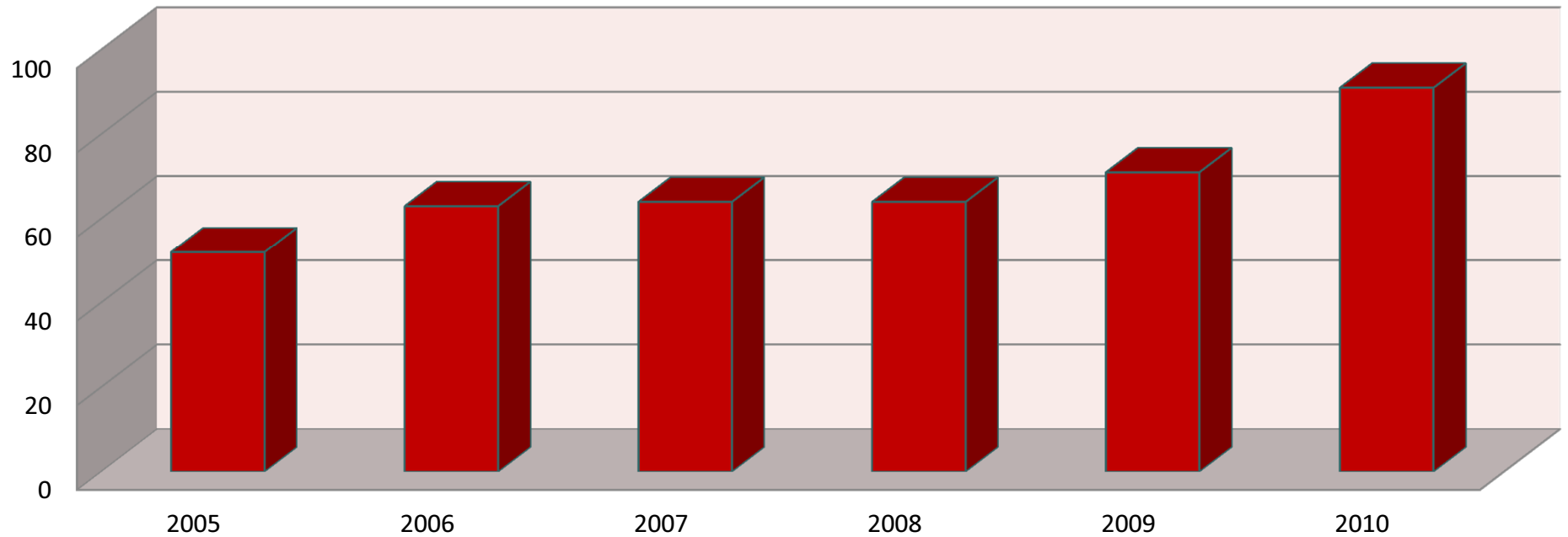
TTU Mechanical Engineering Sponsored Research Awards By Faculty Home Department





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TTU Mechanical Engineering Journal Publication History





Ranking

- ▶ TTU ME graduate program ranked 93rd both for 2011 and 2012 in Best Graduate Schools by U. S. News and World Report in a total of 131 schools ranked.
- ▶ According to ASEE data TTU ME undergraduate program ranks 23rd in terms of number graduates produced per year.
- ▶ Whitacre College of Engineering is one of the Wall Street Journal's Top 25 schools that produce the best graduates , according to recruiters for the nation's largest public and private companies, non-profit organizations and federal agencies.





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New Faculty

- Mechanical Engineering department has welcomed Dr. Jerzy Blawdziewicz, Professor, Drs. Todd Lillian and Dr. Jenny Qiu, Dr. Gordon Christopher, Asst. professors
- Dr. Jerzy Blawdziewicz joined us from Yale University where he was a faculty. His research is in fabrication of functional nanocomposites, processing of bulk metallic glasses, and design of microfluidic assays.
- Dr. Lillian received his Ph. D. from University of Michigan in 2010. His research is in computational modeling of long length and time scale dynamics of DNA.





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New Faculty

- ▶ Dr. Jenny Qiu received her Ph. D. from Florida State University in 2008. Her research is in modeling and simulation of micro/nano flow, multiscale composites and biological materials.
- ▶ Dr. Gordon Christopher received Ph. D. from Carnegie Mellon University and was a NRC Postdoctoral Fellow, NIST. His lab at Texas Tech University focuses on developing microrheology and microfluidics techniques to study the rheology and structure of complex fluids and structured interfaces.



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New Staff Members

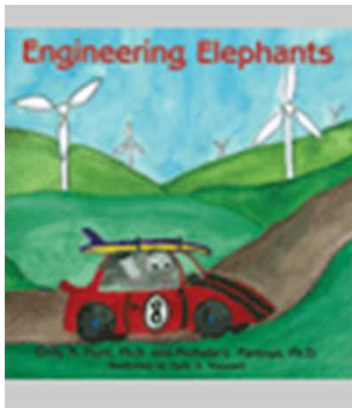
- ▶ Ms. Casey Bush – Advisor
- ▶ Ms. Aubrey White – Business Asst.
- ▶ Ms. Patricia McCaleb – Senior Business Asst.





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Dr. Pantoya's Children's Book Wins National Recognition



"Engineering Elephants," coauthored by Dr. Michelle Pantoya, a professor of mechanical engineering at Texas Tech University, and Dr. Emily Hunt, an assistant professor of mechanical engineering at West Texas A&M University, seeks to educate very young children about who engineers are and what they do.

The book was recently recognized as a "Best Books 2010" Award finalist by USABookNews.com, the premiere online magazine and review website for mainstream and independent publishing houses.

- Engineering Elephants "Children know doctors and teachers and police and firemen and soldiers, but not engineers," Pantoya said. "This is a way of introducing young children to engineering. Our goal is to inspire some of these young people to think about an engineer as something they want to be when they grow up."

Faculty awards

- ▶ Dr. James yang received Texas Tech Alumni Association new faculty award, 2011, and Ed. Whitacre Jr. College of Engineering Research Award.
- ▶ Dr. Stephen Ekwaro received Best Professor Award, Pi Tau Sigma, 2010, and
- ▶ Recognized Faculty Member, the Honors Convocation, College of Engineering, 2010





Faculty – New Grants

- ▶ Dr. Jordan Berg received a grant from Army Research Office.
- ▶ Dr. Sukalyan Bhattacharya was awarded a grant by National Science Foundation (NSF).
- ▶ Dr. Jerzy Blawdziewicz was awarded a grant by the National Science Foundation.
- ▶ Dr. Zhaoming He received a grant from the National Institute for Health (NIH).
- ▶ Dr. Qing Hui received a grant from Defense Threat Reduction Agency (DTRA). He is also a Co-PI of a NSF-MRI and a DOE grant (PI- Dr. Ekwaro).





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Faculty– New Grants

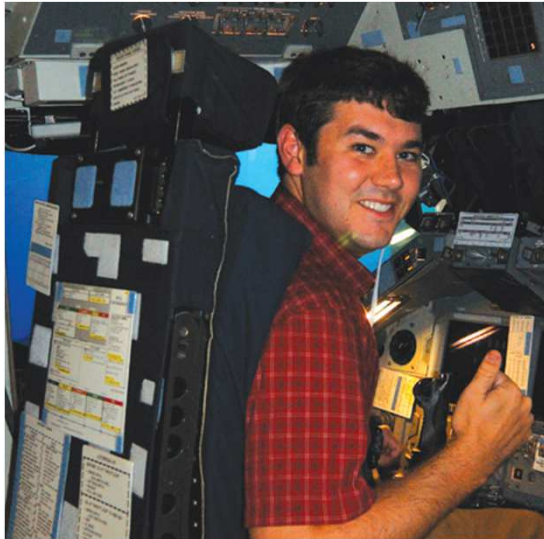
- ▶ Dr. Stephen Ekwaro together with Dr. Hui and some faculty in the Wind Science, and industries carter Wind Energy and General Dynamics SATCOM Technology received grants from Department of Energy (DOE).
- ▶ Dr. Pantoya received grants from US Army, Lawrence Livermore National Laboratory, Battelle Energy Alliance, NSF, Energetic Materials product, and Department of Defense (DOD), and ONR.
- ▶ Drs. Tim Maxwell, Jahan Rasty and Derrick Tate received a grant from T&B Financial Services.
- ▶ Dr. Yang received two grants from the national Institute for Occupational Safety and Health (NIOSH), Griffin Limited Liability Corporation, NSF, and National Institute of Standards and Technology (NIST).





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Student Awards



Undergraduate student Sean Hannon was awarded the prestigious Fullbright Student Grant from the U. S. Student Fullbright program.

He will study aerospace engineering at the Technische Universitat Munchen focusing on a project titled "Computerized Model of a Telepresence Enabling Satellite Communication System"

Jared Gragg and Kailiang Zhang received prestigious AT&T Chancellor's Fellowship. Jared was also awarded 3rd Place in Ninth Annual Graduate Student Research Poster Competition.



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Student Awards

- ▶ Mr. Fisseha Alemayehu received the Helen DeVitt Jones Excellence in Graduate Part-Time Teaching Awards, April, 2011.
- ▶ Tenth Annual Graduate Student Research Poster Competition, 2011 (180 total)
- ▶ Ariful I. Bhuiyan –first place
- ▶ Srikumar Krishnamoorthy - 2nd Place
- ▶ Ryan Breighner – 2nd Place
- ▶ Senay Imam - 3rd Place



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Student Awards

- ▶ Ph. D. students Ryan Breighner, Billy Clark, Eric Collins, Luke Mayer, Adam Stroud, Christopher Umstead, Alejandro Bilbao, Raja Gudiapati, Shehan Haputhanthri, Peter McDonough, Duc Pham, and Haileyesus Endeshaw received TTU Graduate School Ph. D. Fellowship Award.
- ▶ MS students Amanda Gordon, Powel Thompson, and Haileyesus Endeshaw received TTU Graduate School MS Fellowship Award.
- ▶ Tanvir Ahmed, a Ph. D. student received Summer Disertation Award.





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Additional Faculty and Instructor Positions

- ▶ Whitacre Chair in Energy to be filled.
- ▶ Replacement of Dr. Sergey Smirnov.
- ▶ Adjuncts/Instructors positions as needed due to enrollment growth (five in 2010–2011) currently hired Mosedale, Hanson, C. berg, Fanning, Branson, Gray, GPTIs.





Undergraduate Laboratory Development

- ▶ Purchased about 60 new computers (open lab, ME lounge and labs, \$60,000).
- ▶ Spending about \$70,000 for three undergraduate laboratories (Materials lab, metallographic equipment, updating control lab). \$20,000 came from the donation. \$9,000 from ME Academy.





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- ▶ Recent Research Space Renovation
- ▶ Next to Dr. Jankowski's Lab (Dr. Gordon Christopher's lab under renovation)





General Comments

- ▶ The Mechanical Engineering Department students (1,000), faculty (28) and instructors (6 full time) are increasing in number.
- ▶ The ME undergraduate program is well reputed as indicated by enrollment and competition among industry to recruit our students.
- ▶ Average SAT score 1162.
- ▶ Average GRE score 1160 (Math 740).
- ▶ Honors program in ME is working well.
- ▶ Enrollment management plan is working well.






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General Comments

- ▶ Currently, total numbers of students in 150 hr. BS/MS program is 13.
- ▶ Research in the department is growing.
- ▶ The department is working on a new strategic planning to get us to the next level of achievement.
- ▶ The department is working towards 2011–2012 ABET visit.



Implementation Plan (Strategies)– 2011–2012

- ▶ The ME Department should continue to improve the excellent undergraduate program and prepare for the next ABET visit in 2011.
 - ▶ Work towards increasing the FE exam passing rate
 - ▶ Aggressively seek more external funding to support more graduate students on external funds.
 - ▶ The department should work with the college towards recruiting more women and underrepresented group students.
 - ▶ Encourage more students to assume co-op/internship.
 - ▶ Get more laboratory/research space (new space in the exercise building and Mass Communication Building).
 - ▶ Work with College Development office to raise funding.
- 



Long Term Implementation Plan– Strategies

- ▶ Get more new faculty, instructor, staff positions (10 new faculty positions in next five years, and 24 in next ten years).
- ▶ Maintain an excellent undergraduate program by improving it continuously (have smaller class sizes).
- ▶ Aggressively seek external funding; must support more graduate students on research grants.
- ▶ Improve ranking of the Graduate Program.
- ▶ Try to retain students from women and underrepresented groups –work with the college
- ▶ Get more space



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Thank You!

