

International Energy Forum Symposium – April 14, 2009

Jim Holste

Associate Dean for Research &
Graduate Studies

Texas A&M University at Qatar

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- Began classes in September 2003
- Degree Programs
 - Chemical Engineering
 - Electrical & Computer Engineering
 - Mechanical Engineering
 - Petroleum Engineering
- 100 graduates after May commencement

Texas A&M University at Qatar

- ~350 students enrolled currently
 - 90% are Qatar residents
 - 50% are nationals
 - 50% of nationals are female
- Intake: ~100 new students per year

Career Preparation

- Critical and independent thinking
- General analytical skills (mathematics, etc.)
- Ability to learn on own
- Appropriate level of self-confidence
- Broad education with some depth
 - Progress through a variety of positions
- Long-term focus

Current Position

- Specific skills
- Depth rather than breadth
- Short-term emphasis
- Little preparation for next position

Education, Training & Recruitment Challenges

- Increasing level of technical complexity
 - Giga vs. nano
 - Process unit sizes continue to increase
 - Ultra-deep water drilling & completions
 - Acid & sour gas issues
- Routine work previously used to provide experience now done by software
- Many alternate career paths for chemical, mechanical and electrical engineers
- World-wide industry

University/Industry

- Industrial participation in capstone courses
 - Industry problems
 - Interaction with industry engineers
- Work experience/internships (must have significant level of responsibility)
- Advisory committees (engineering accreditation requirements)

University/Industry

- Graduate degrees
 - Breadth and depth
 - General vs. specific understanding
- Research
 - Defining problem is part of experience
 - Work on open-ended and ill-defined problem with mentorship and guidance

Elementary Schools

- Children lost to engineering and science by age of 12
- Elementary teachers have little knowledge of engineering profession, limited knowledge of science careers
- Public has perception that scientists are not useful to industry

Summary

- Increasing university/industry cooperation
- Faculty experiences in industry
- Emphasis on elementary and secondary school recruitment
 - Interactions with students
 - Education of teachers