

Deepwater Gulf of Mexico

How Will the Industry Develop Key Resources

Presented by:

Stephen A. Holditch



D.O.T
D.O.L

Outline

- How do we develop leaders?
- Manpower Projections
- High Technology – key to the future
- New pathways
 - *Energy 101*
 - *M.E. in International Petroleum Management*
 - *Just in time training*
- What must industry do?

Energy Leadership

- ‘inspiring others to do the right thing for the right reasons’
- How do managers in the oil and gas industry know the right thing to do?
- In the upstream business, the right thing to do depends on what the **reservoir** needs to produce more oil and gas
- Thus, energy leadership is based on understanding the **reservoir**

Categories of Leadership

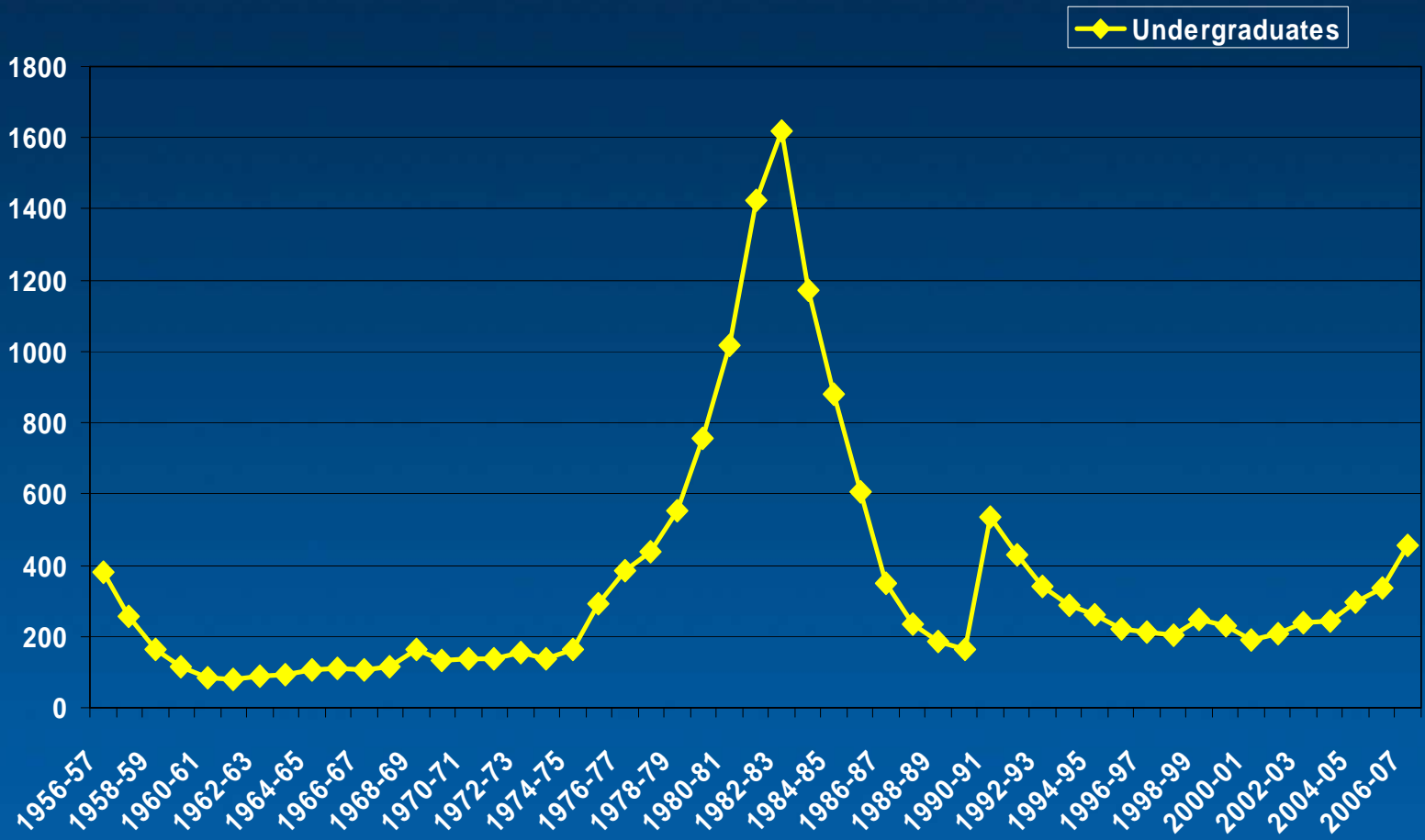
- **People** – you can learn this in school but the most important factor is being nice, fair and honest
- **Projects** – some engineers need to be project managers and ‘get it done’
- **Technology** – some engineers need to manage the technology used in projects
- **Universities mostly focus on projects and technology**

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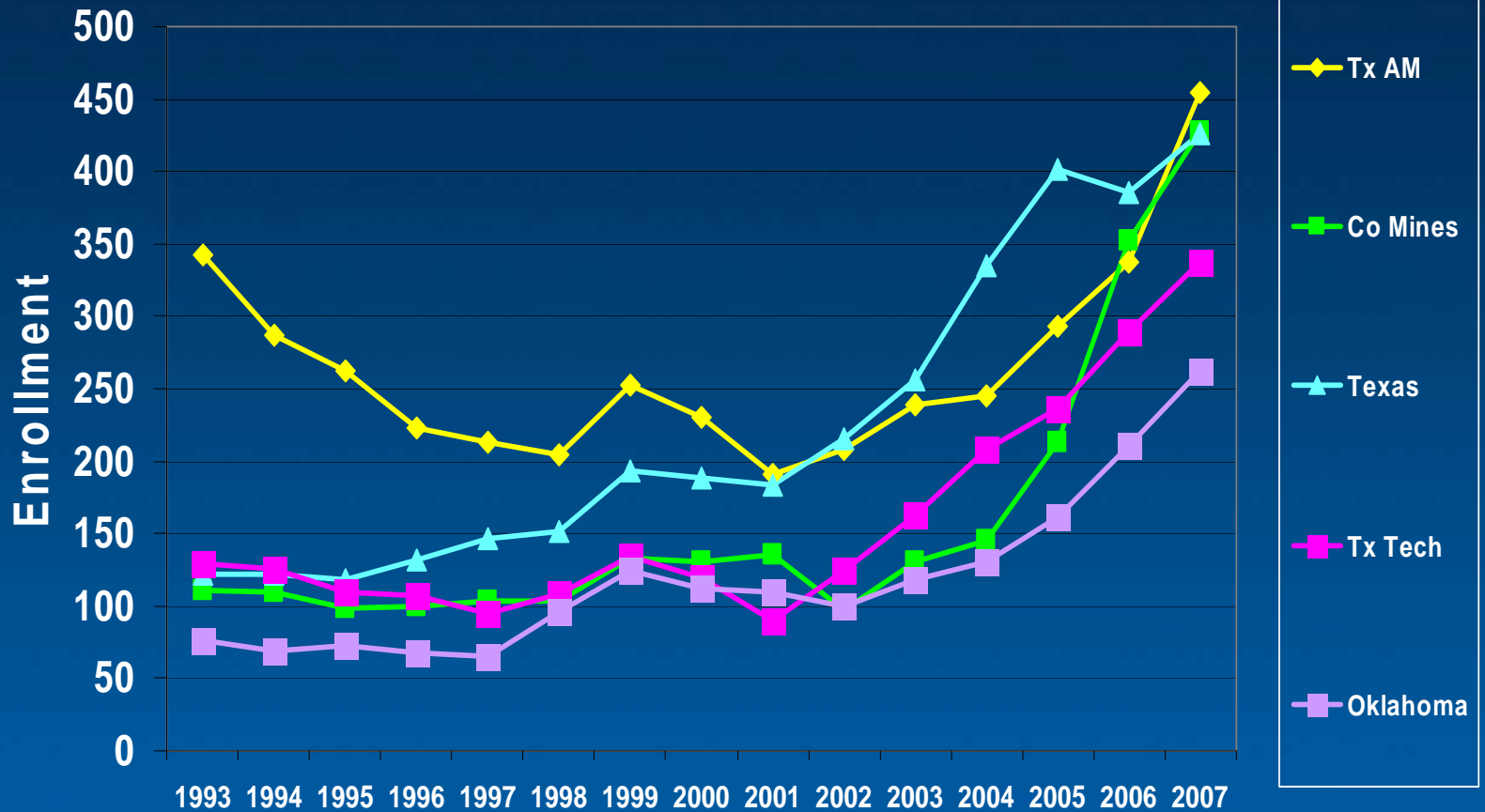
Texas A&M Petroleum Engineering

BS Students



Undergraduate Enrollment

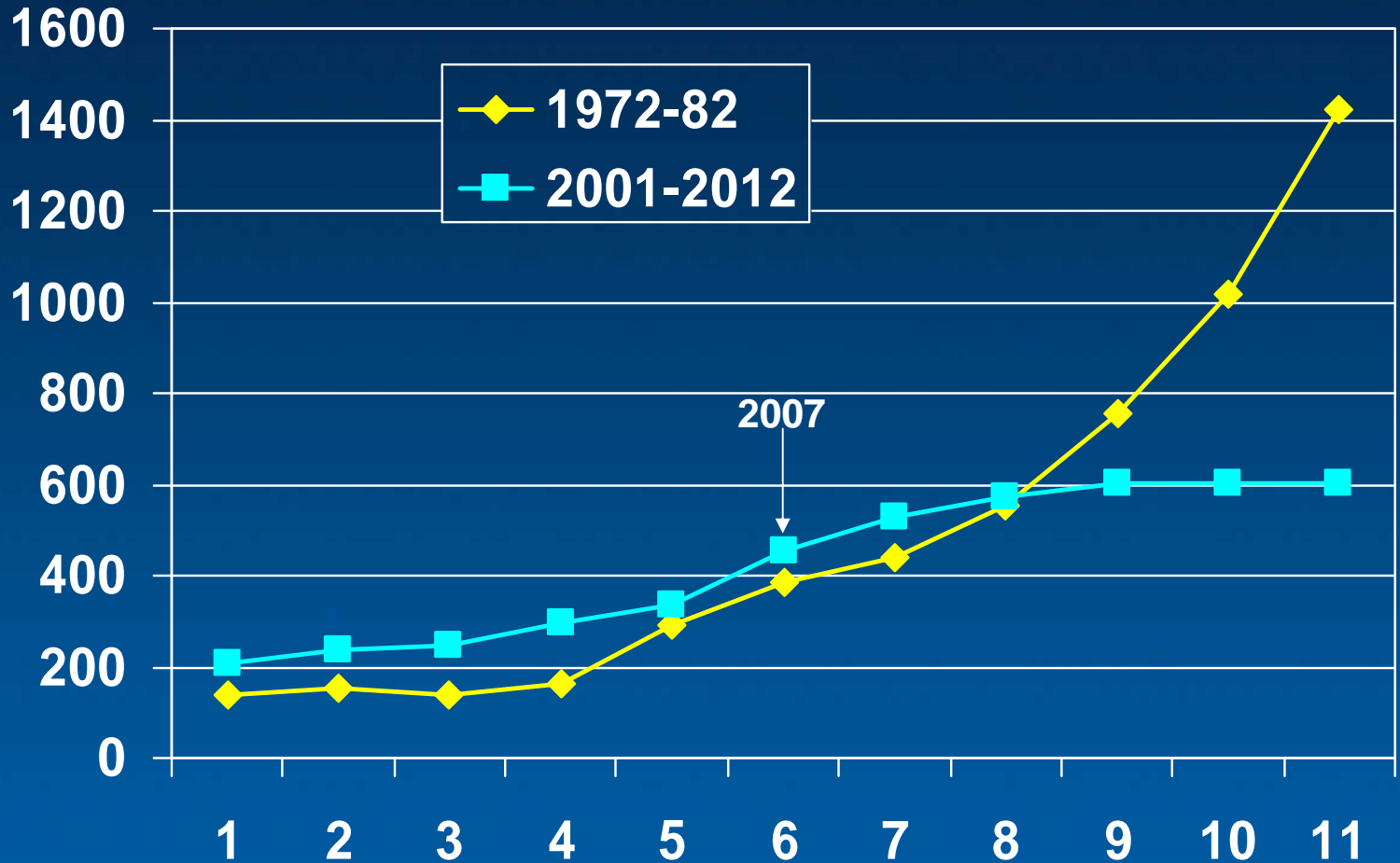
Undergraduate Enrollment - PE



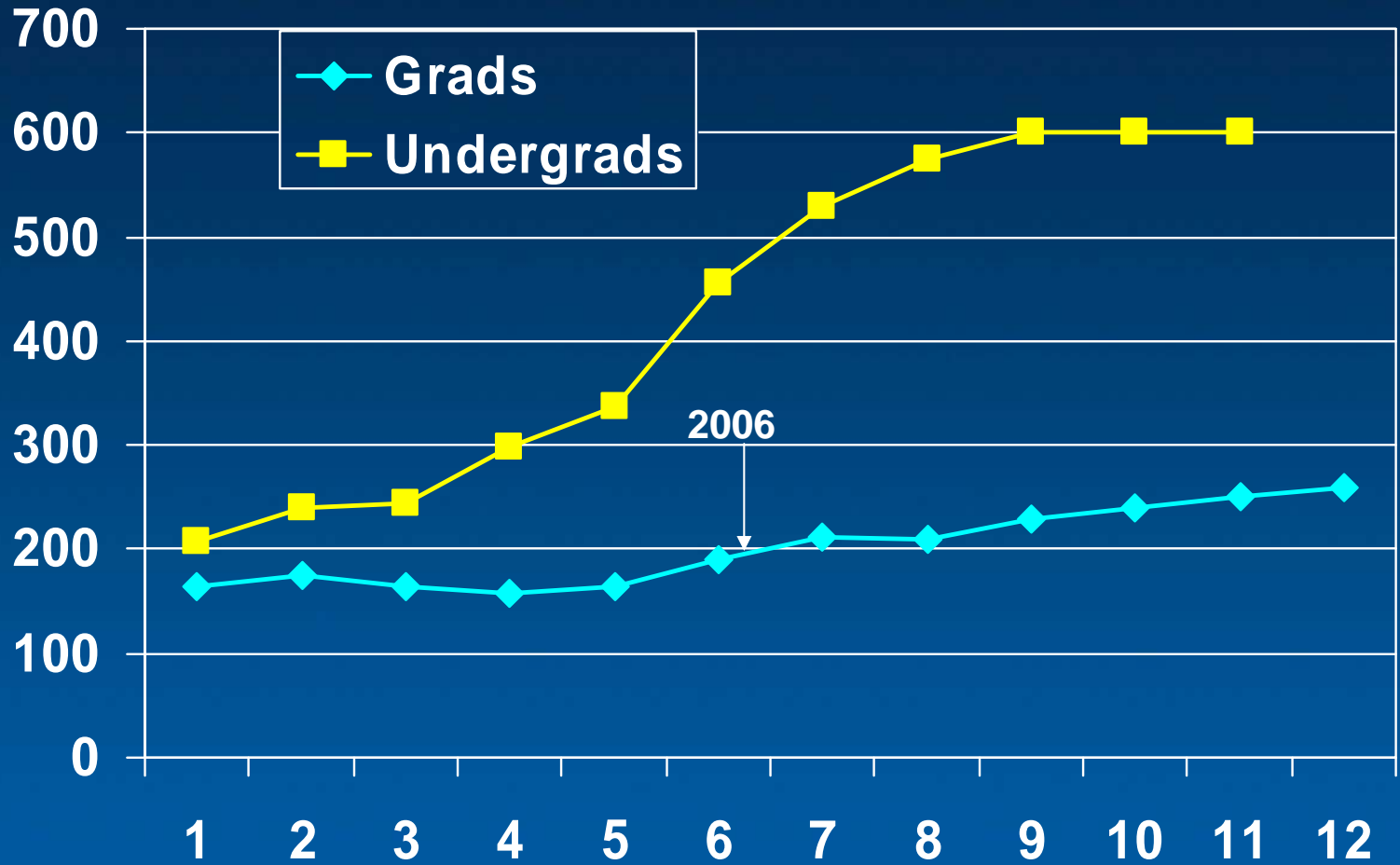
Projections from 2008-2012 – 2006-07 are actual

	College Station Campus								Qatar	Qatar	Total
FY	Fr	So	Jr	Sr	Total UG	MS	PhD	Total Grads	Under grads	Grads	CS Qatar
2006	144	75	69	50	338	141	50	191	16	0	545
2007	209	100	70	76	455	157	55	212	53	0	720
2008	210	150	90	80	530	150	60	210	65	0	805
2009	210	150	125	90	575	160	70	230	90	5	900
2010	210	150	125	115	600	170	70	240	100	5	945
2011	210	150	125	115	600	180	70	250	100	10	960
2012	210	150	125	115	600	190	70	260	100	10	970

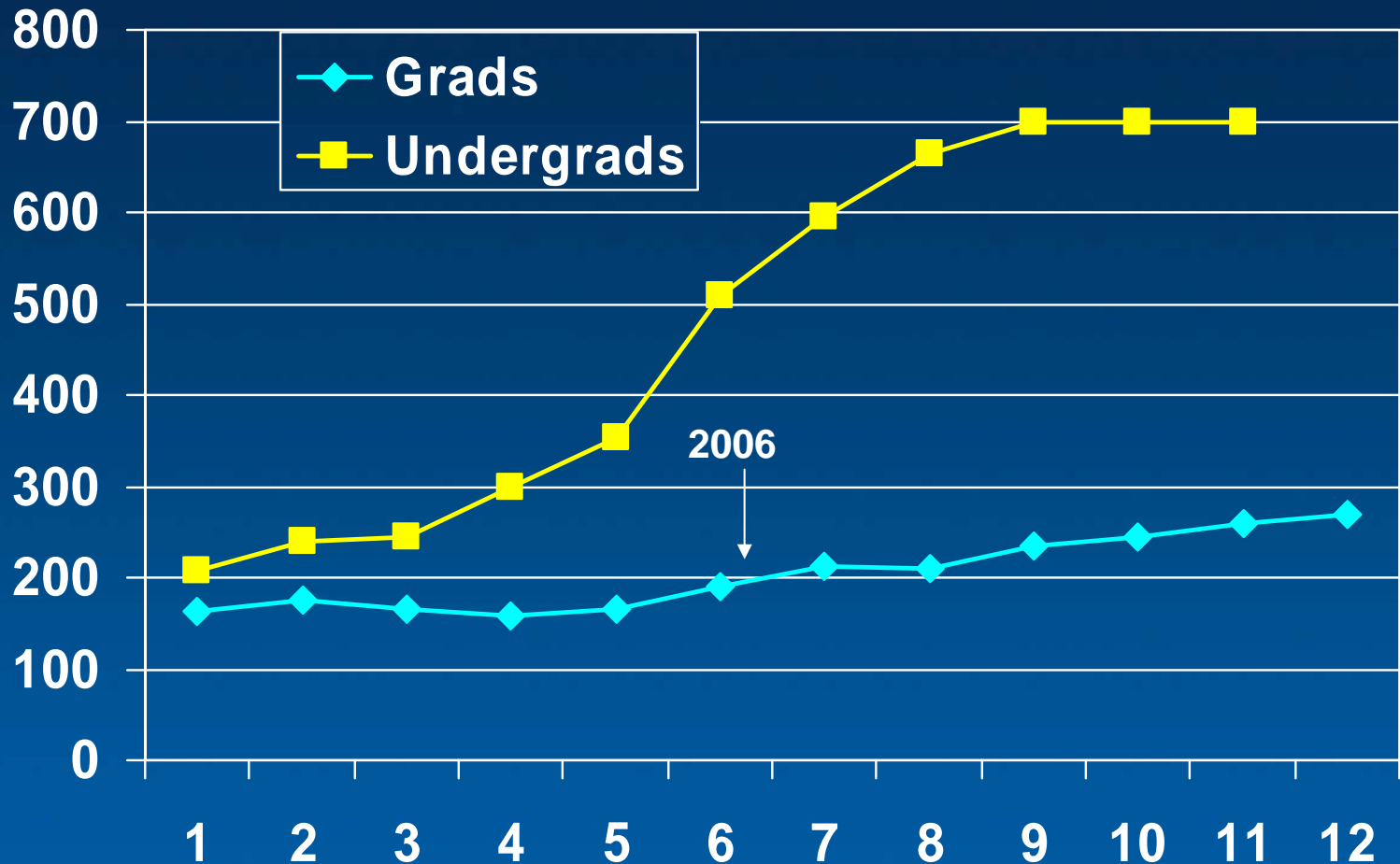
PE Undergrads – College Station Campus



PE Enrollment – College Station



PE Enrollment – College Station and Qatar



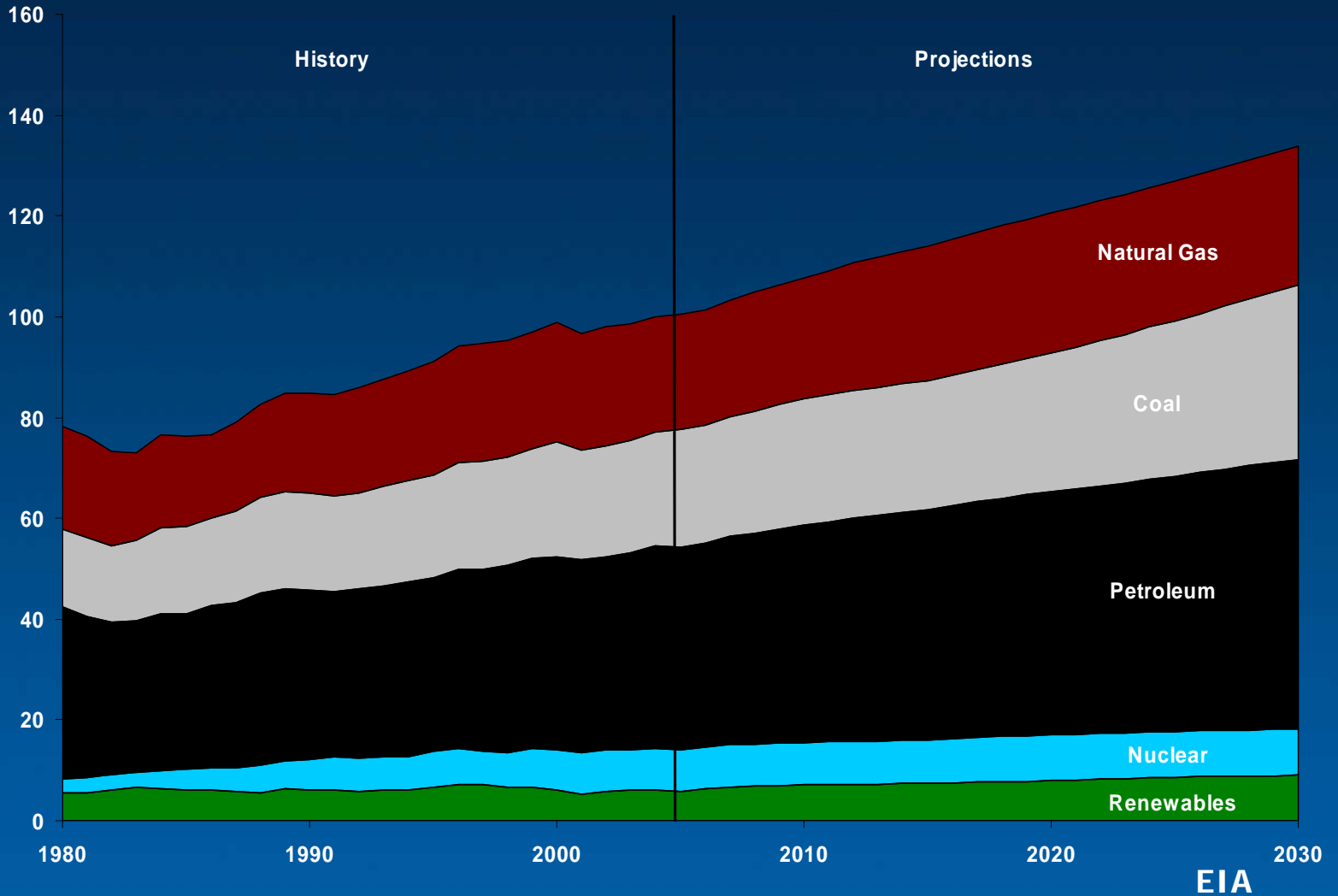
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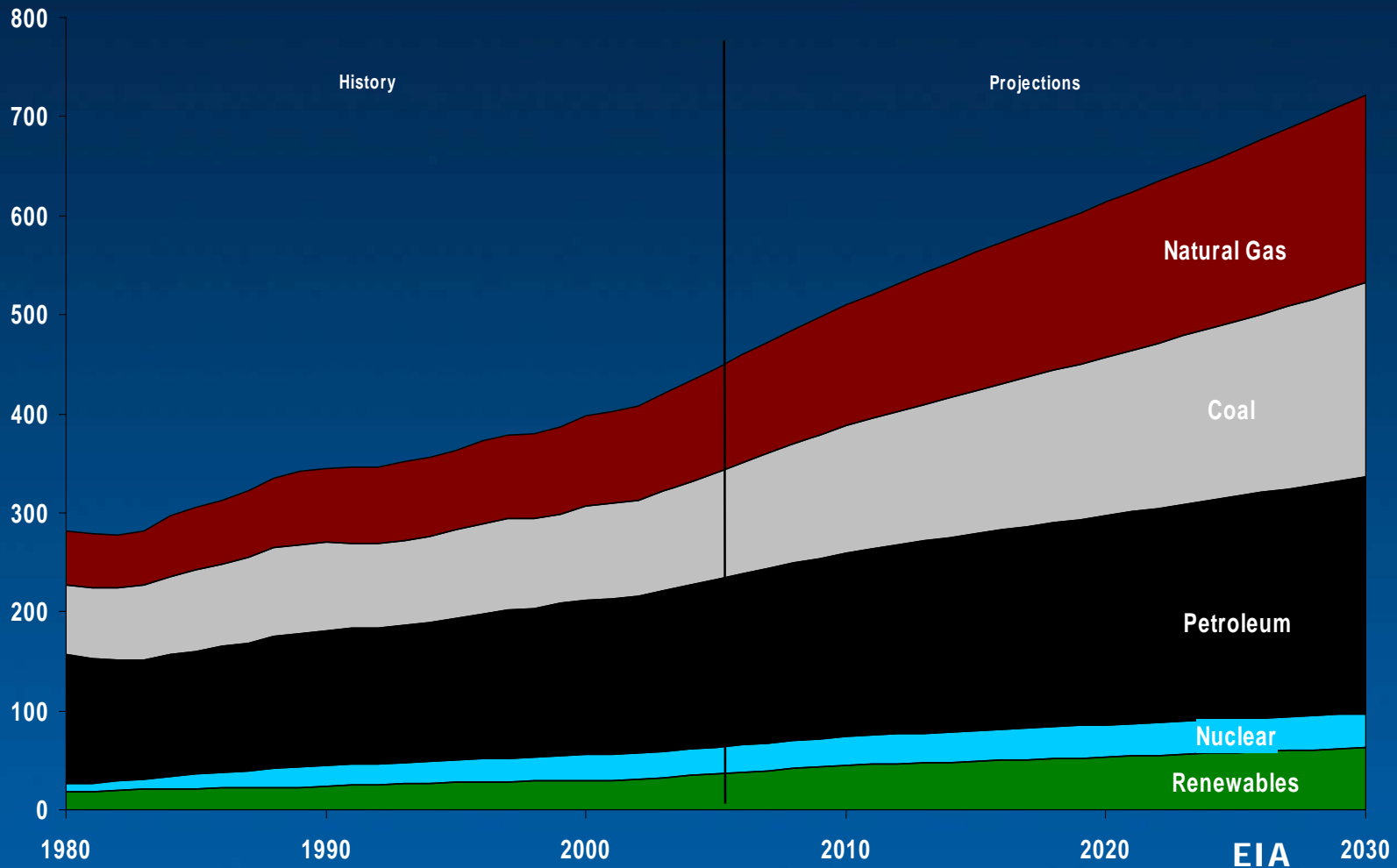
What does the future hold?

- The world demands more oil and gas
 - *We are a growing industry!*
- The oil and gas business is 'high tech'
- The oil and gas business is global!
- The workforce is ageing

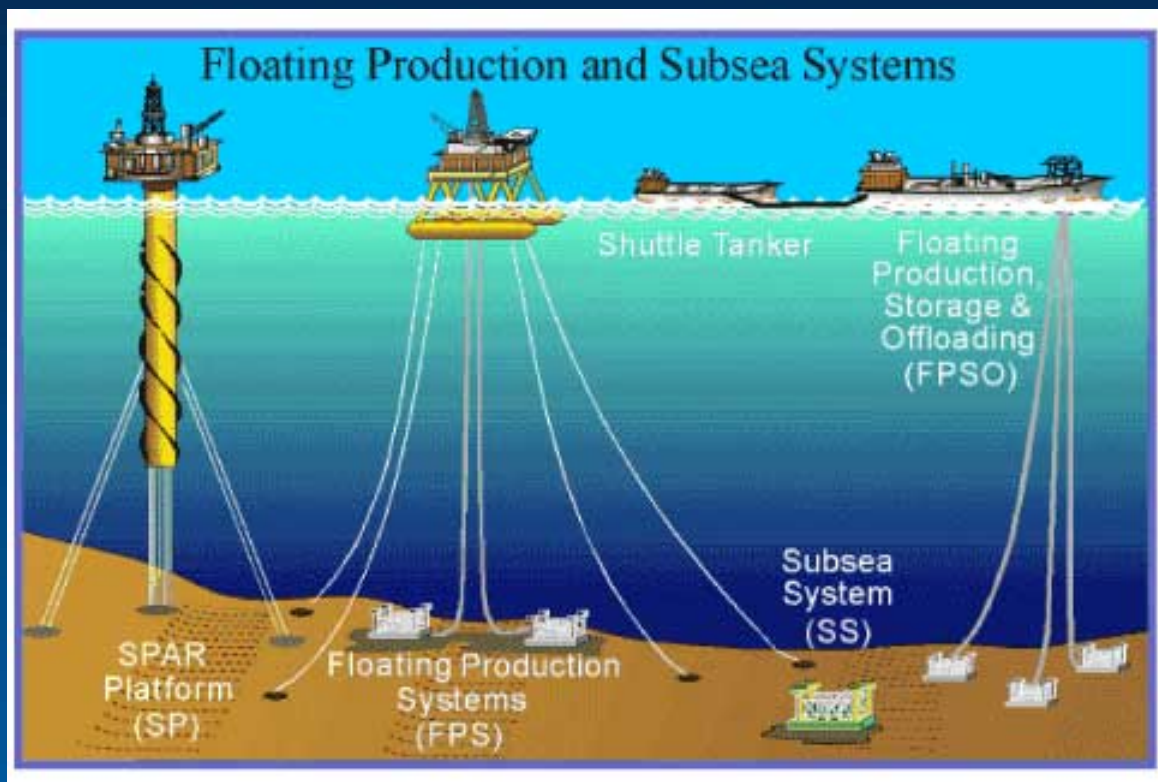
U.S. Energy Consumption by Fuel, 1980-2030 (quadrillion Btu)



World Energy Consumption by Fuel, 1980-2030 (quadrillion Btu)

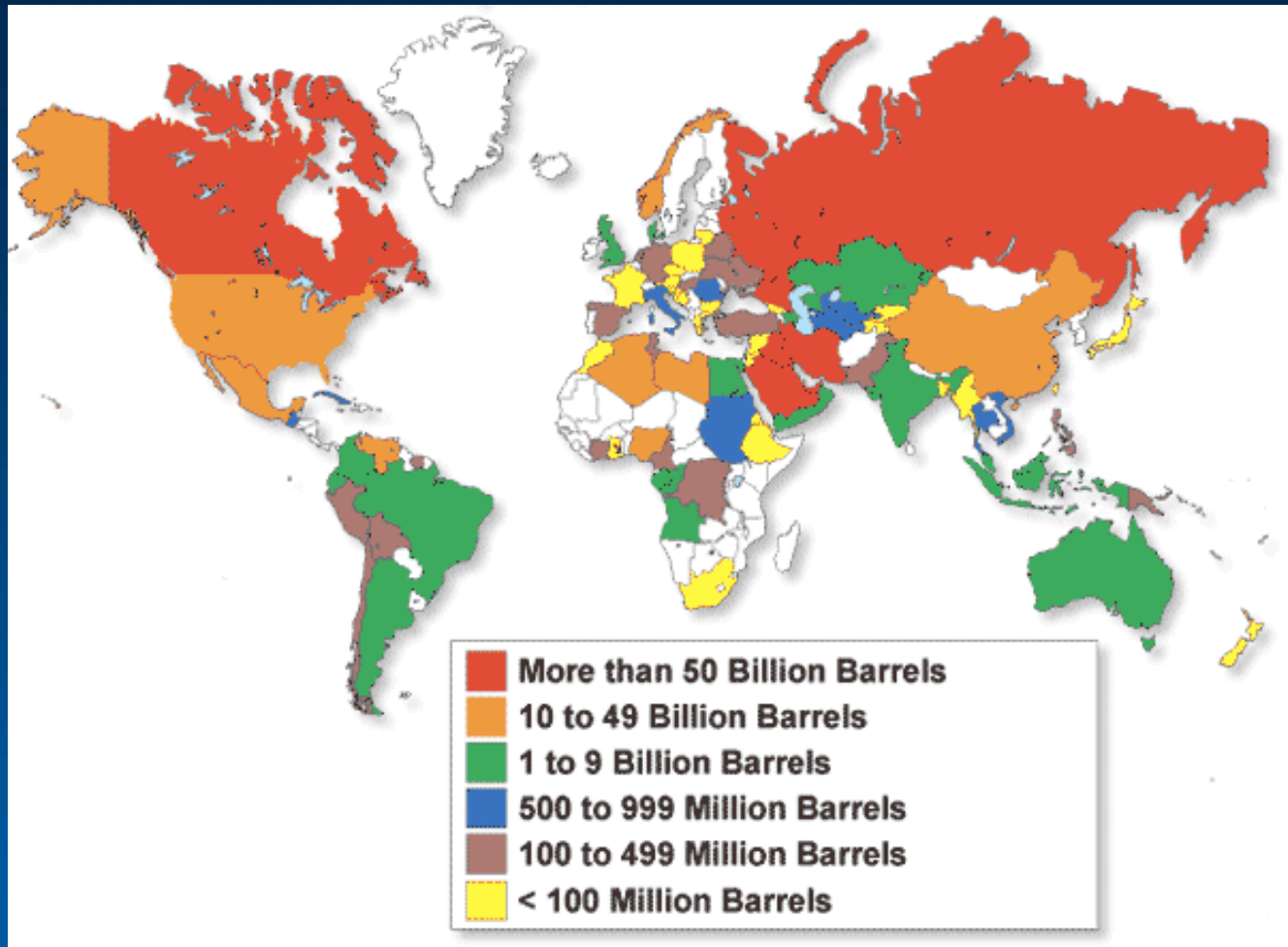


New Offshore Production Structures Enable Development in Deeper Water



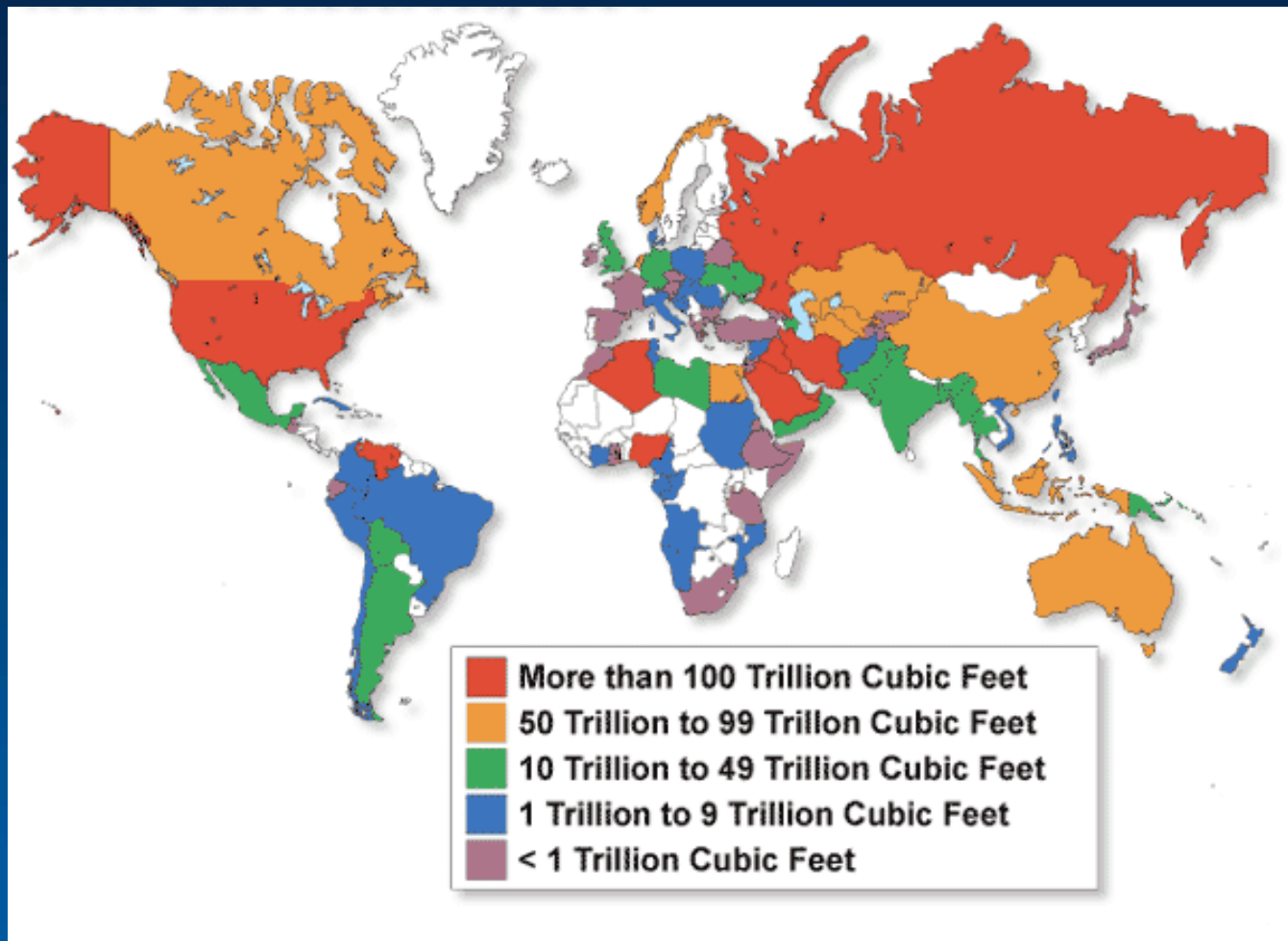
Industry has moved from fixed to floating structures to develop oil and gas in deeper water

World Oil Reserves by Country



Source: Oil & Gas Journal, "Worldwide Report," December 22, 2003.

World Natural Gas Reserves by Country



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Conclusion:

Now is the time to get into the industry!

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Engineering 101 – really it is Energy 101

- **Energy – Link with wealth, size of industry and dominance of hydrocarbons**
- **Energy balance – Electricity**
- **Energy and the environment**
- **Oil, Gas and Coal**
- **Wind, solar, other**

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Masters – International Petroleum Management

- **Currently offer in catalog**
- **36 hours past the B.S. degree**
- **18 hours of graduate courses in Petroleum Engineering**
- **18 hours of graduate courses in the college of Business**

Just in time training

- **Globally, there are a lot of talented engineering graduates**
- **The Departments of Petroleum Engineering can help, but**
- **Companies like NExT and OGCI will also help by offering competency assessment and designer training**
- **I believe we can recruit and train the next generation workforce**

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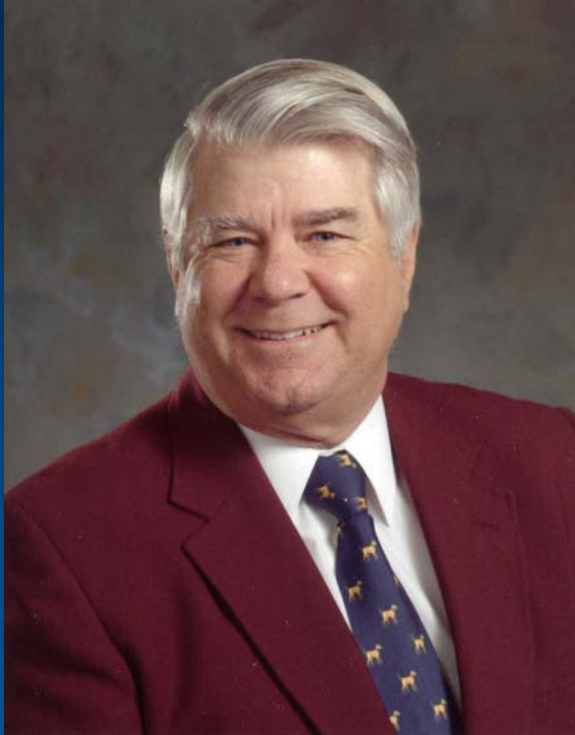
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To Keep the pipeline full, the Industry needs to

- Support the universities by
 - *Hiring our students for permanent jobs*
 - *Hiring our faculty to teach short courses*
 - *Working with faculty on research*
- We have a lot of international MS and PhD students who can work globally
- Our students are trained to ‘hit the ground running’ – to produce oil

Thank You !

Bio



Dr. Stephen A. Holditch has been the Head of the Harold Vance Department of Petroleum Engineering since January 2004. He joined the faculty at Texas A&M University in 1976 and has taught most of both the undergraduate and graduate courses. In supervising more than 100 MS and PhD students, Holditch has focused his research in areas involving gas reservoirs, well completions, and well stimulation. Holditch was the Society of Petroleum Engineers, International (SPE) President 2002, SPE Vice President-Finance and a member of the Board of Directors for the SPE from 1998-2003. In addition, he served as a Trustee for the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) from 1997-1998. Holditch has received numerous awards in recognition of his technical achievements and leadership. In 1995, he was elected to the National Academy of Engineering (NAE) and in 1997 to the Russian Academy of Natural Sciences.