

LSU Energy Summit 2009 Work Force Development Challenges

Lloyd R. Heinze, Ph.D, P.E.
Chair & Butler Professor

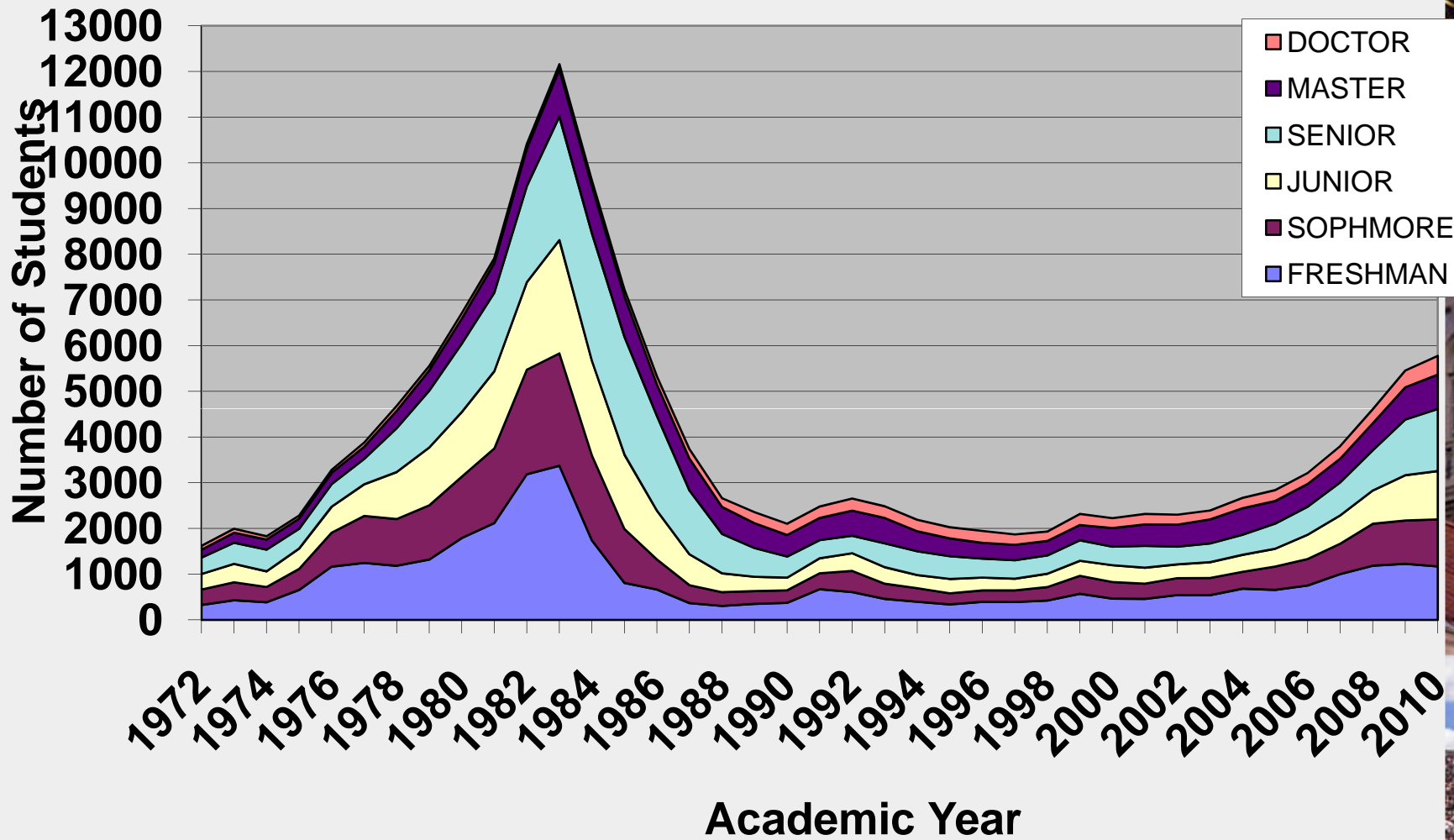


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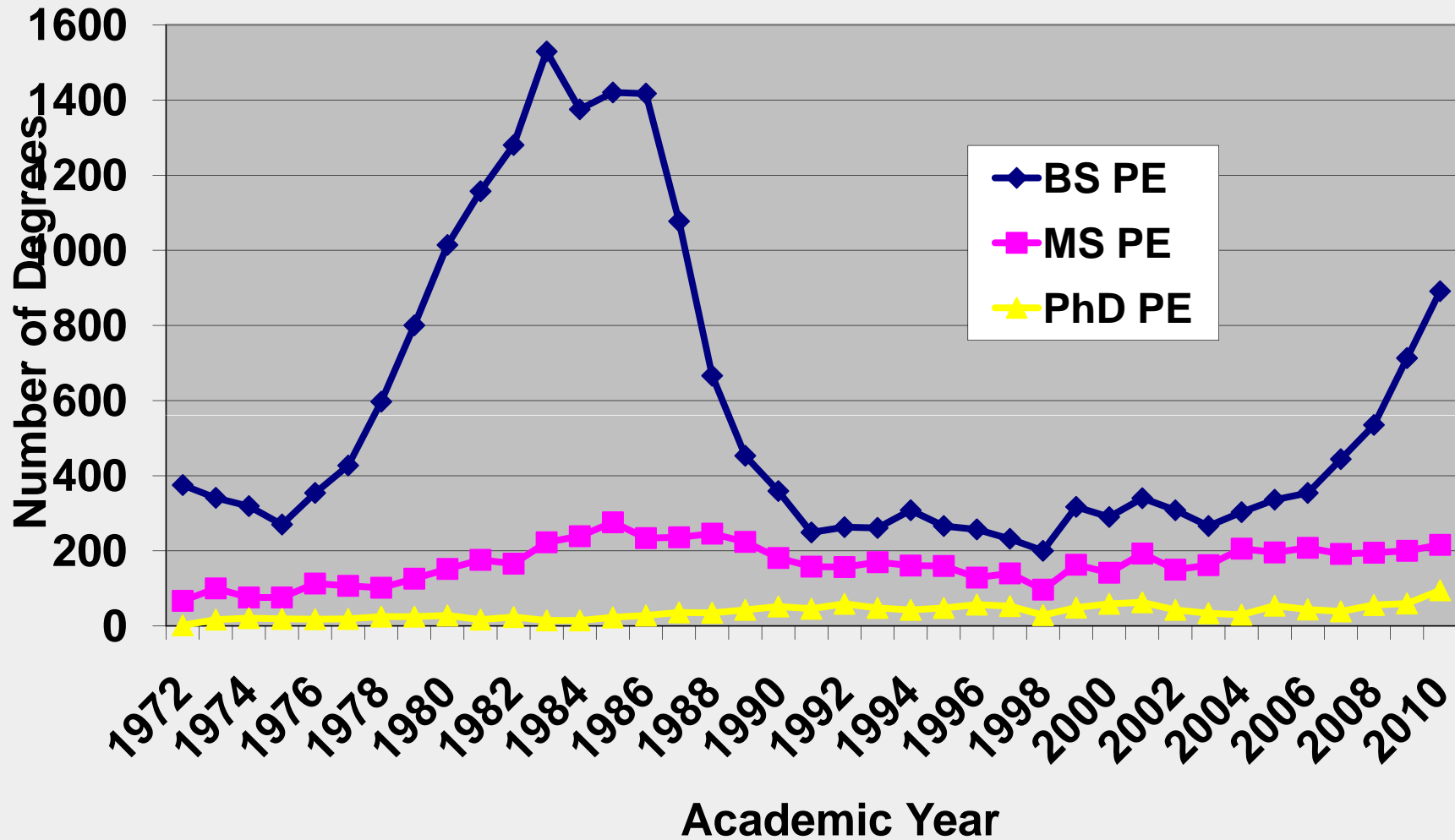
Bob L. Herd Department
of Petroleum Engineering™



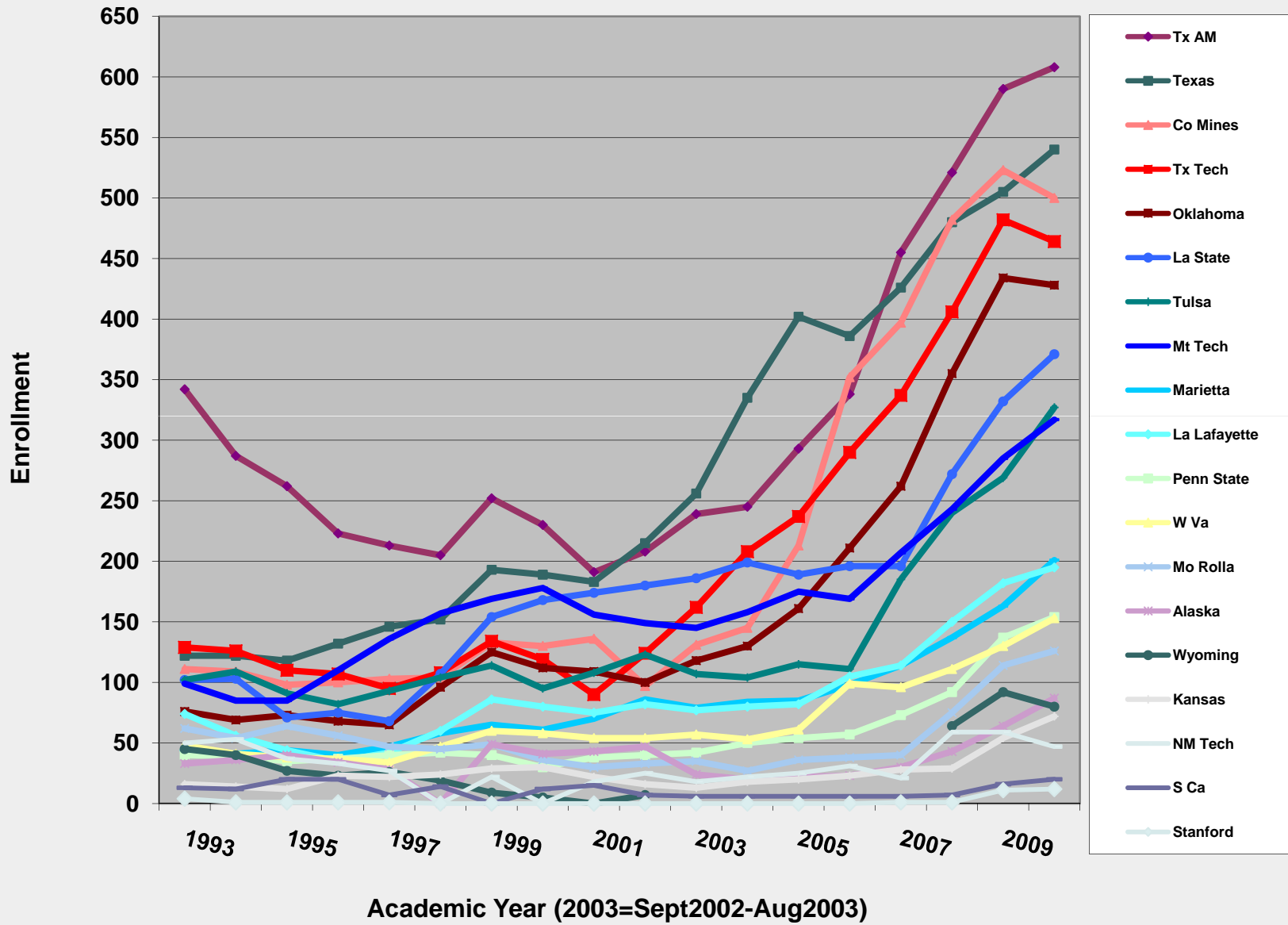
US Petroleum Engr Enrollment



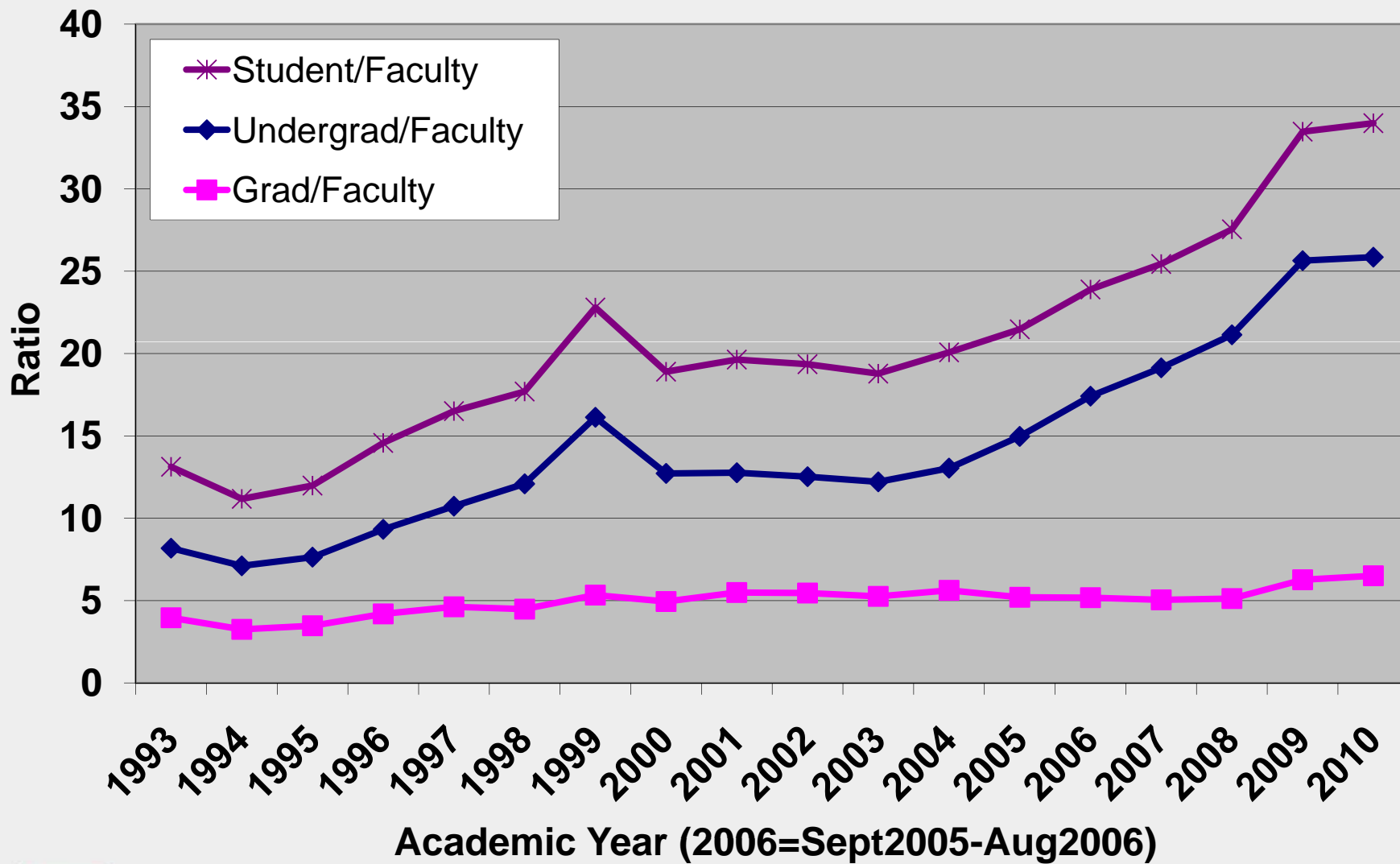
Petroleum Degrees Granted in USA



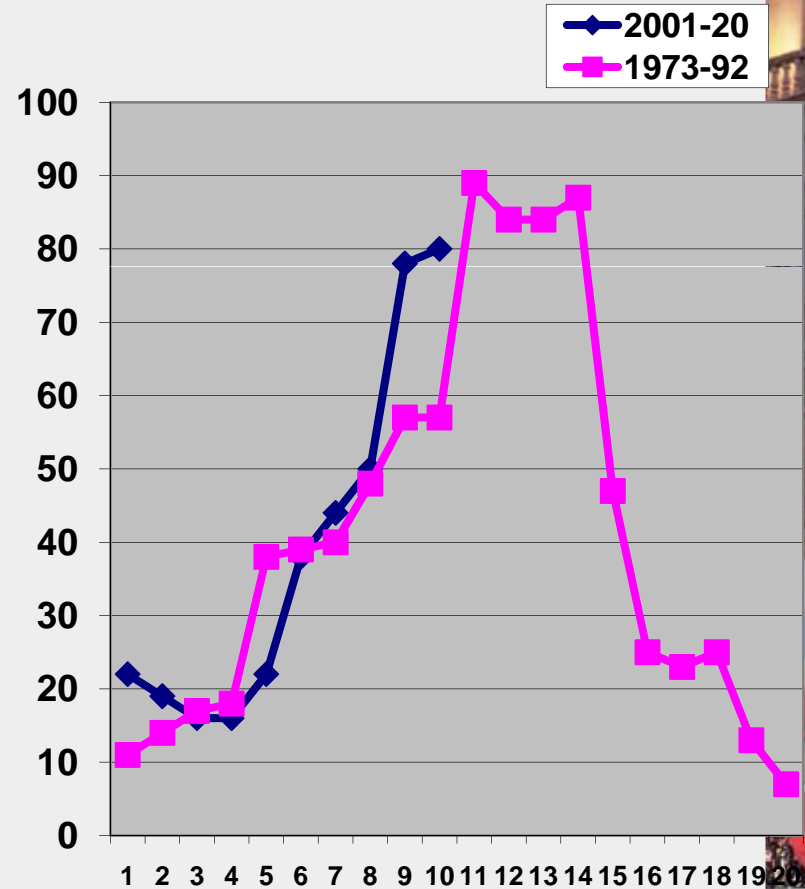
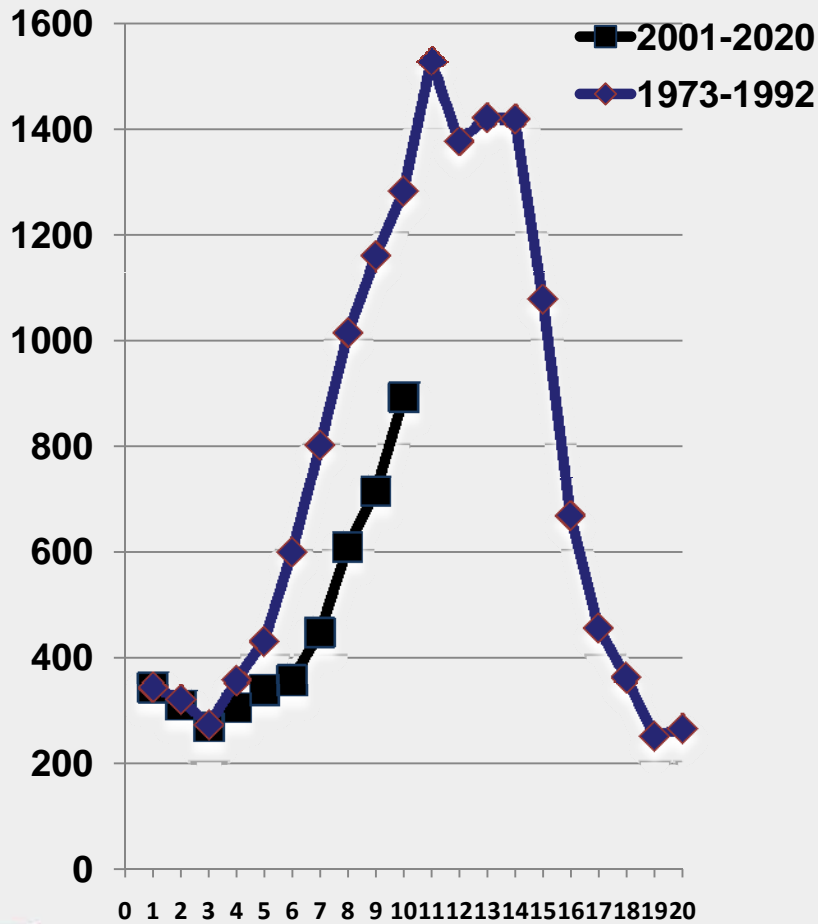
Undergrad Enrollment US PE



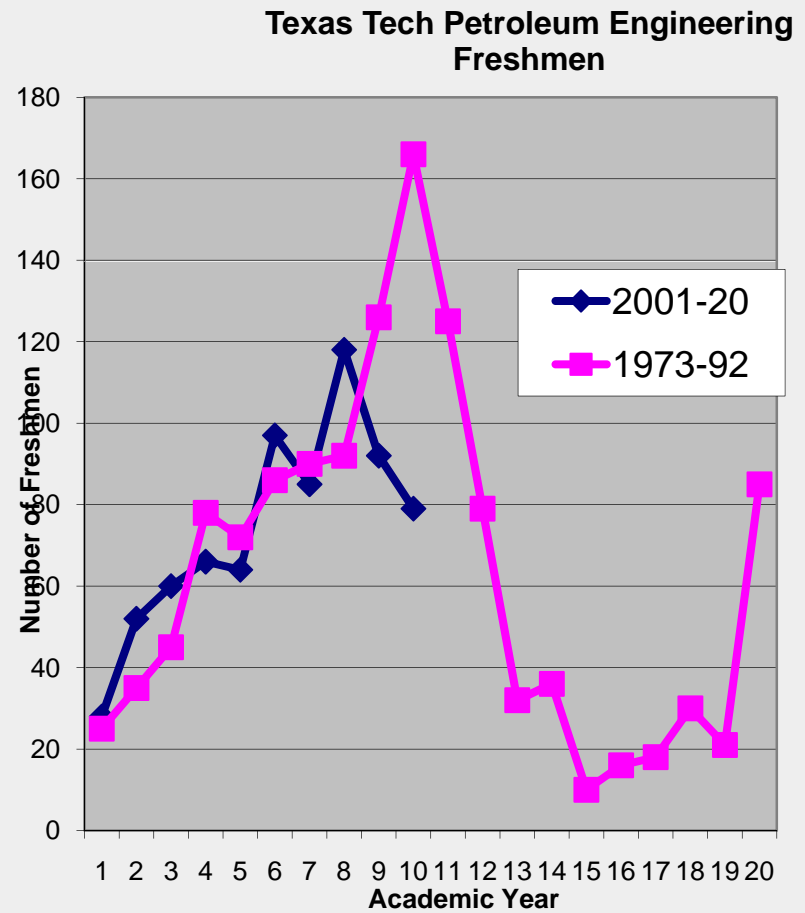
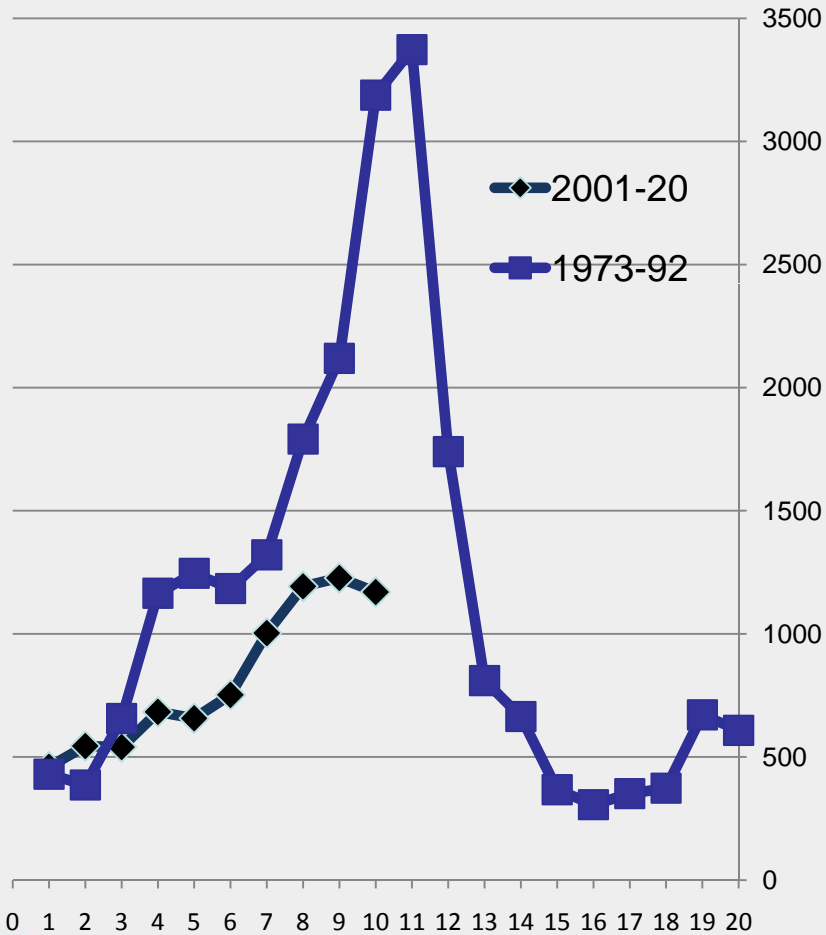
US Petroleum Engineering



BS PE granted US & TTU



Petroleum Freshman US & TTU



Less Cylinders

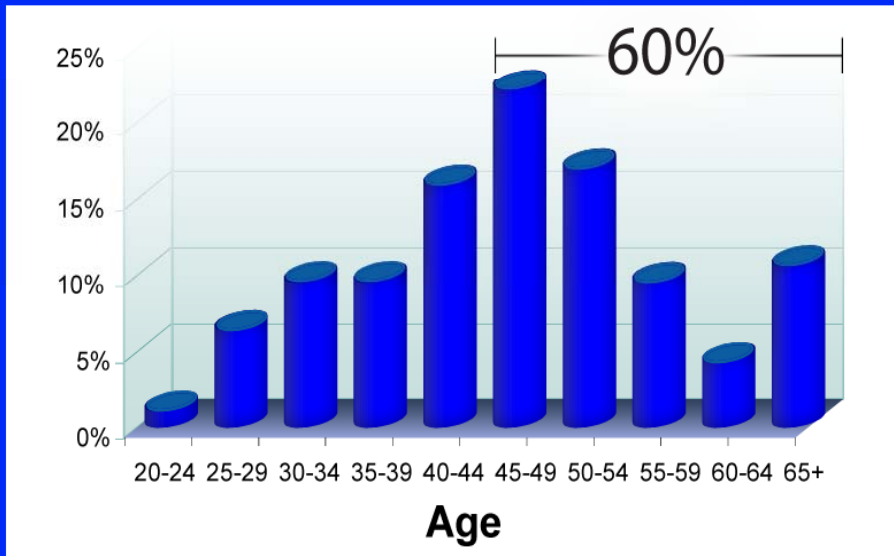
**A New
Horizon**

Petroleum Engineering Programs - 1983

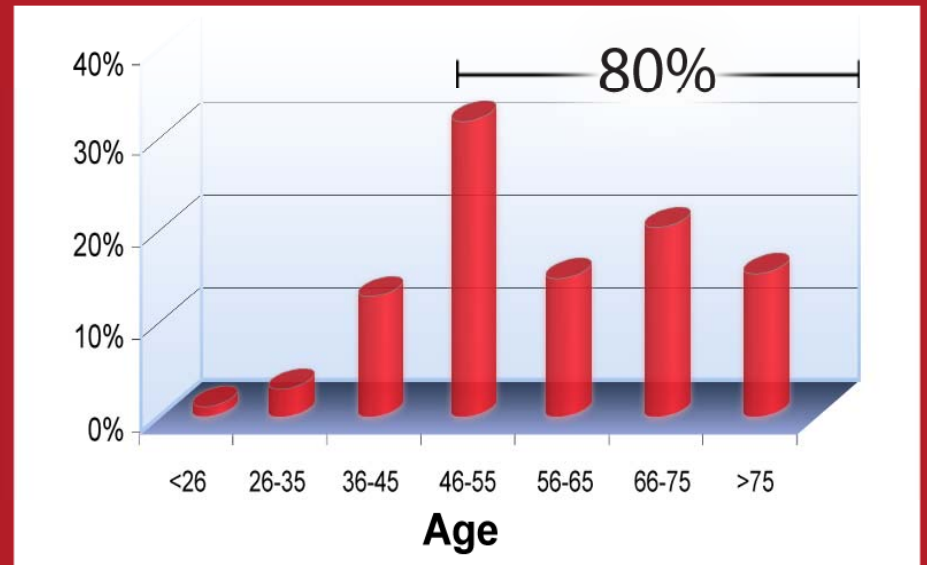


Old Cylinders

Age Distribution - Petroleum Engineers
Society of Petroleum Engineers

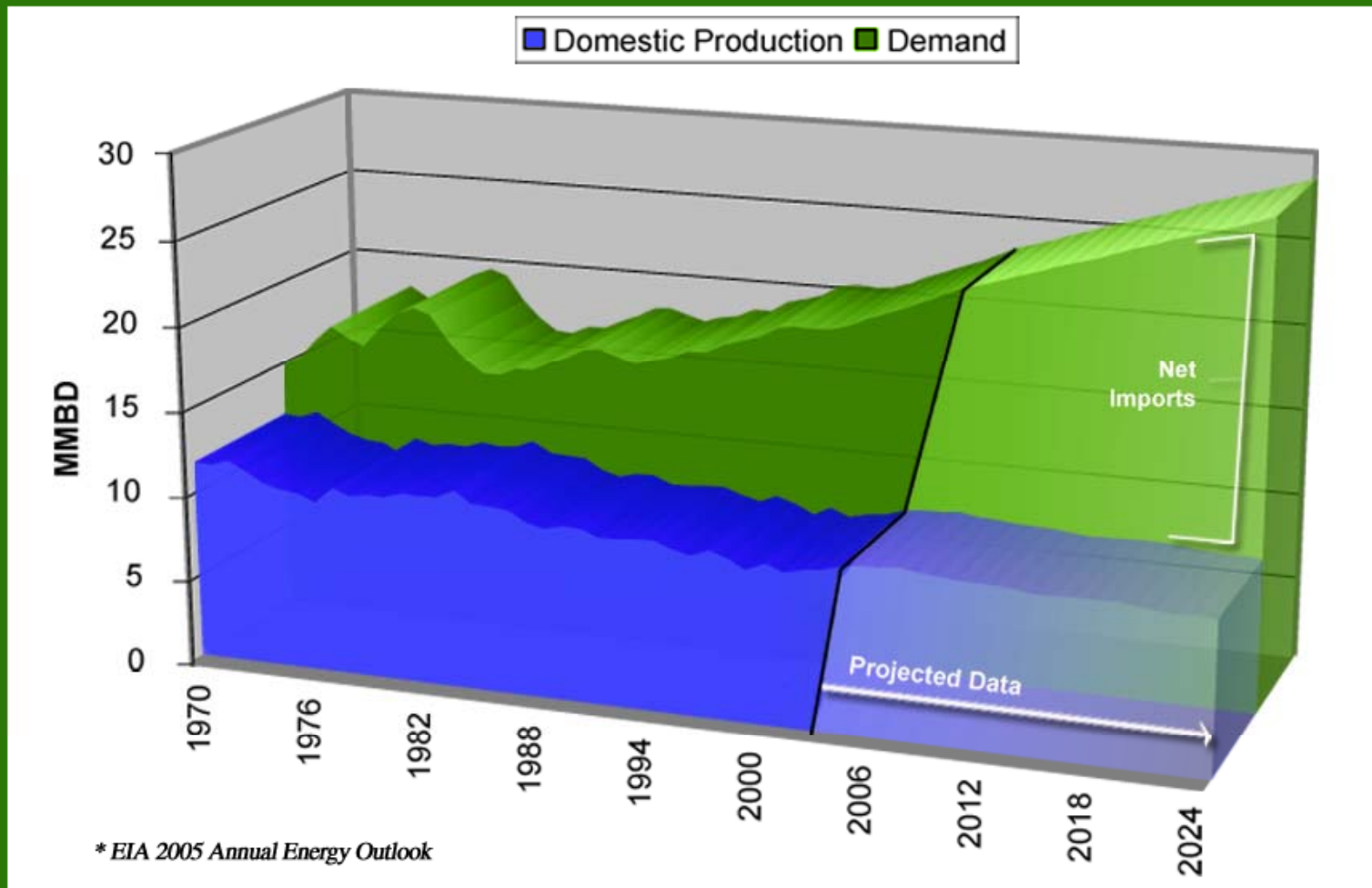


Age Distribution - Geologists
American Association of Petroleum Geologists



Increasing Demand

U.S. Production vs. Demand



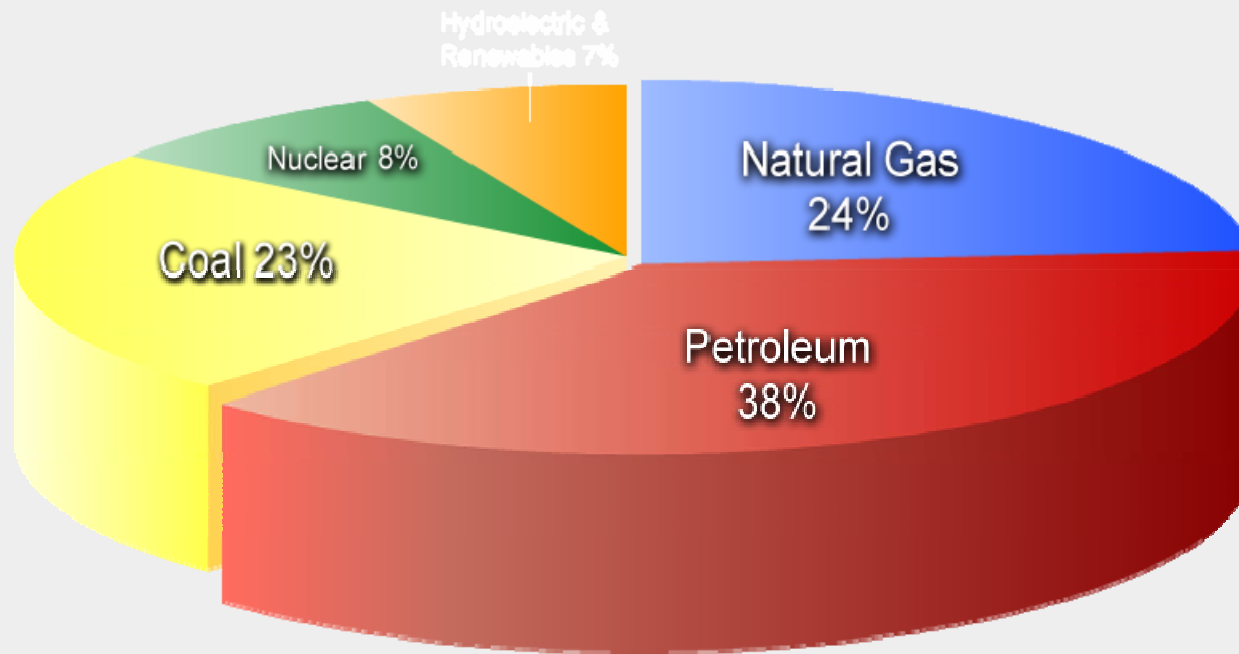
* EIA 2005 Annual Energy Outlook



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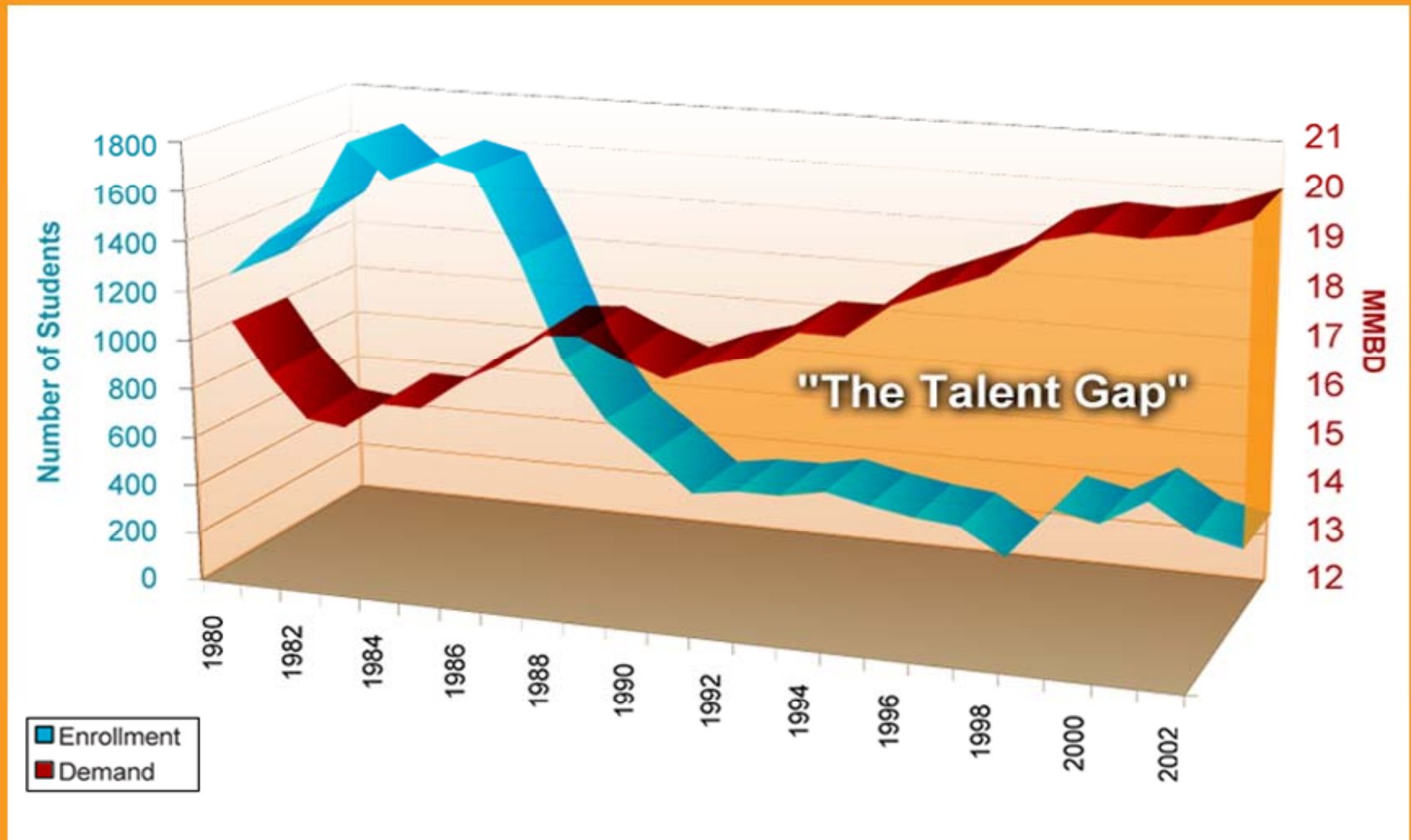
Fueling the Engine

Importance of Oil & Natural Gas
Average Annual U.S. Energy Use 97 TCFE



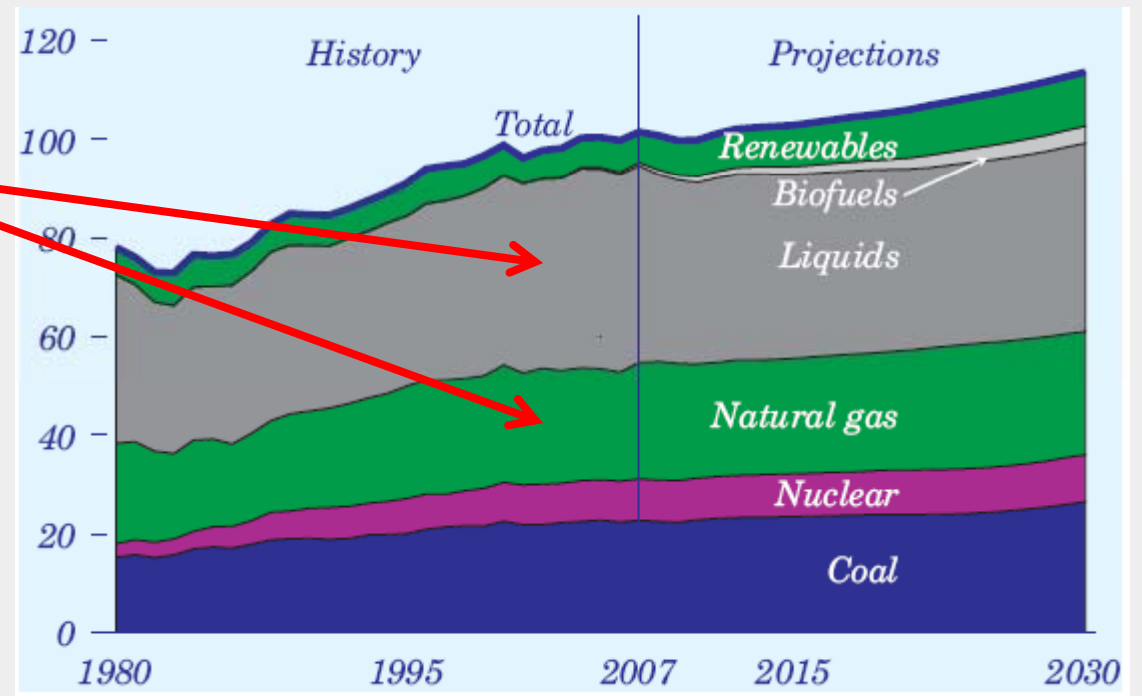
Supply & Demand

U.S. Demand vs. P.E. Enrollment



U.S. Energy Consumption (1980-2030) (Quadrillion Btu)

'Oil & Gas'
are **USA's**
main Energy
sources.

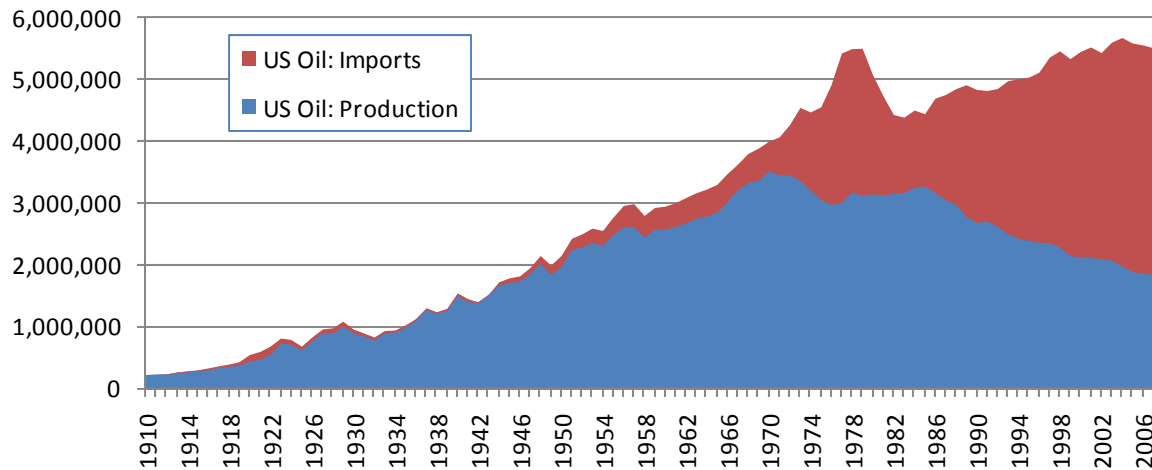


US Oil: *Production* vs. *Imports*

Dependence on Net Petroleum Imports

58.2%

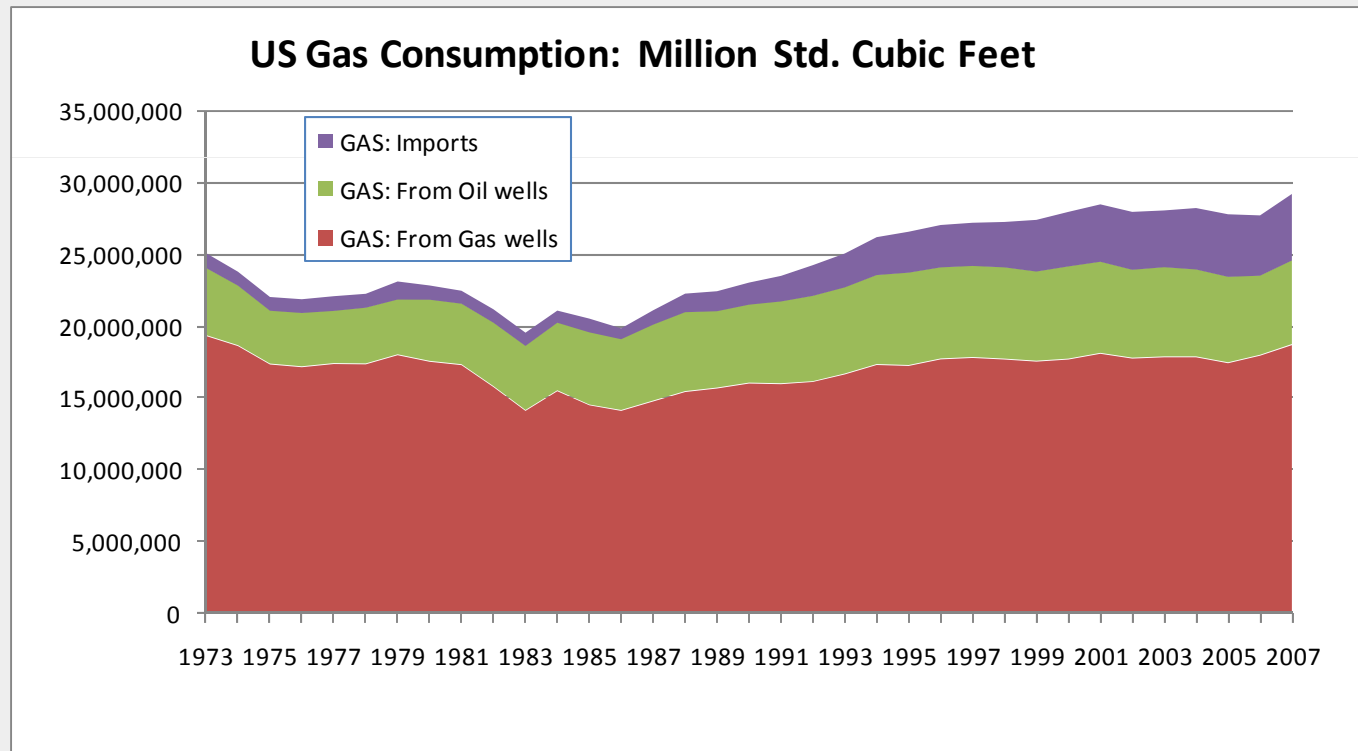
US Oil Consumption: Thousand Stock-Tank Barrels



<http://tonto.eia.doe.gov/dnav/pet/hist/mcrfps1A.htm>

US Natural Gas: *Production* vs. *Imports*

Dependence on Natural Gas Imports **16.4%**



US Oil: 2007

Production vs. *Imports*

U.S. Crude Oil Production	5,064,000 barrels/day
U.S. Crude Oil Imports	10,031,000 barrels/day
U.S. Petroleum Consumption	20,687,000 barrels/day
Dependence on Net Petroleum Imports	58.2%

<http://www.eia.doe.gov/basics/energybasics101.html>

Crude Oil Proved Reserves (as of 12/31/2007): 21,317 x10⁶

http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/current/pdf/ch3.pdf#page=2

US Natural Gas: 2007

Production vs. *Imports*

U.S. Production (Dry Production) feet	19,278 billion cubic
U.S. Nat. Gas Imports	4,608 billion cubic feet
U.S. Nat. Gas Exports	822 billion cubic feet
U.S. Petroleum Consumption feet	23,056 billion cubic

Dependence on Net Petroleum Imports **16.4%**
<http://www.eia.doe.gov/basics/energy/basics101.html>

Nat. Gas Proved Reserves (as of 12/31/2007): 237,726 x10⁹



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