



The Personnel Availability Crisis

**How the University of Texas is Handling Requests for
Training in the Oil and Gas Industry**

Greg McCormack

Director- Petroleum Extension Services

Rice Global Engineering & Construction Forum

Farnsworth Pavilion - Ley Student Center

Rice University

Houston, Texas

August 11, 2006



3 Main Themes

- **Is this a big deal?**
- **Is it only a numbers game?**
- **Well what is the solution?**



Is this a big deal?



Baby Boomers Poised to Retire in Drove!



Baby boomers have **POURED** into each life stage since birth and have redefined what it meant to be babies, toddlers, kids, teens, adults.

We're now set to redefine retirement, as we begin to turn 62 (the minimum age at which Social Security allows early retirement) in 2008.

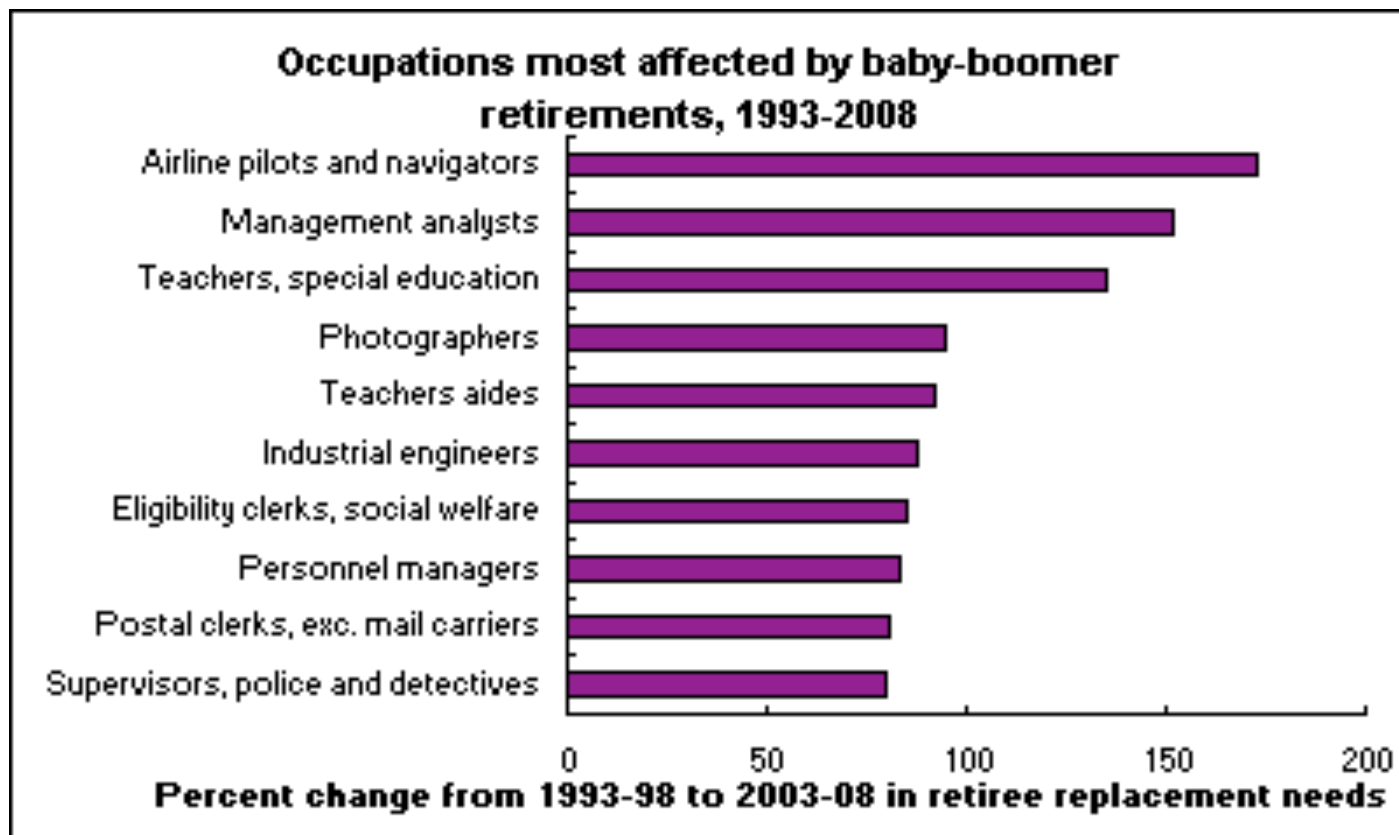


Partnership for Public Service

- **59% at FEMA**
- **54% Coast Guard**
- **46% Customs Service**
- **40%–70% Key Military Personnel**



From the U.S. Department of Labor





Bureau of Labor Statistics

“As aging baby-boomers begin retiring, the effects on the overall economy and on certain occupations and industries will be substantial, creating a need for younger workers to fill the vacated jobs, many of which require relatively high levels of skill.”

*Arlene Dohm, Economist, Office of Employment Projections,
Bureau of Labor Statistics*



So How Will the Oil and Gas Industry Be Affected?

- **Average age of employees with major companies and service companies is 46–49 years old.**
- **Average retirement age for the industry is 55.**

Interstate Oil and Gas Compact Commission

2002 IOGCC Petroleum Professionals Blue Ribbon Task Force Report

“The industry faces a crisis in the next 7–10 years as more than half of the employee base leaves the industry.”

There is also a continuing decline in both undergraduate and graduate school enrollment for the oil and gas profession.

Human Resources: The Missing Piece of the Energy Puzzle



THE UNIVERSITY OF TEXAS
CONTINUING EDUCATION
PETROLEUM EXTENSION SERVICE





Panel Discussion Topic at OTC, 2005

- **“North American upstream oil and gas companies will likely lose more than 60 percent of their employees, along with their experience and knowledge, in just 5 years.”**



API Workforce Taskforce Survey

May 2005

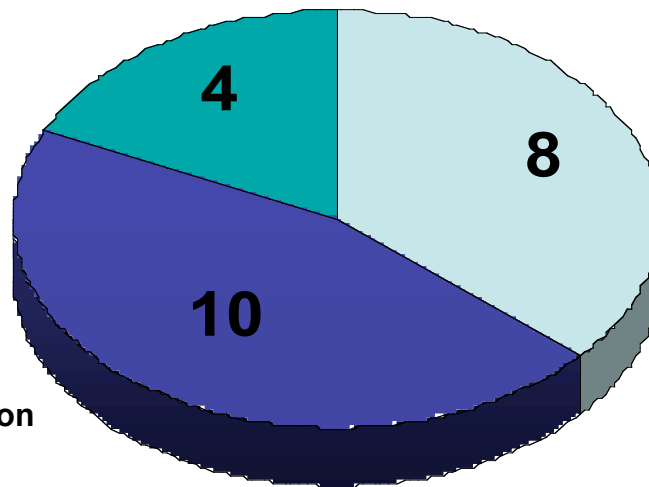
22 Companies Participated

Oil Service

- Baker Hughes
- Halliburton
- Schlumberger
- Varco

Independent

- Anadarko Petroleum Company
- Apache Corporation
- Burlington Resources
- Devon Energy Corporation
- EOG Resources
- Occidental Petroleum Corporation
- Sunoco, Inc.
- Tesoro Petroleum Company
- Unocal Corporation
- Valero Energy



Integrated

- Amerada Hess
- BP p.l.c.
- Chevron
- ConocoPhillips
- Marathon Ashland Petroleum
- Marathon Oil Company
- Murphy Oil Company
- Shell Oil Company



Four Trends Generated Concerns

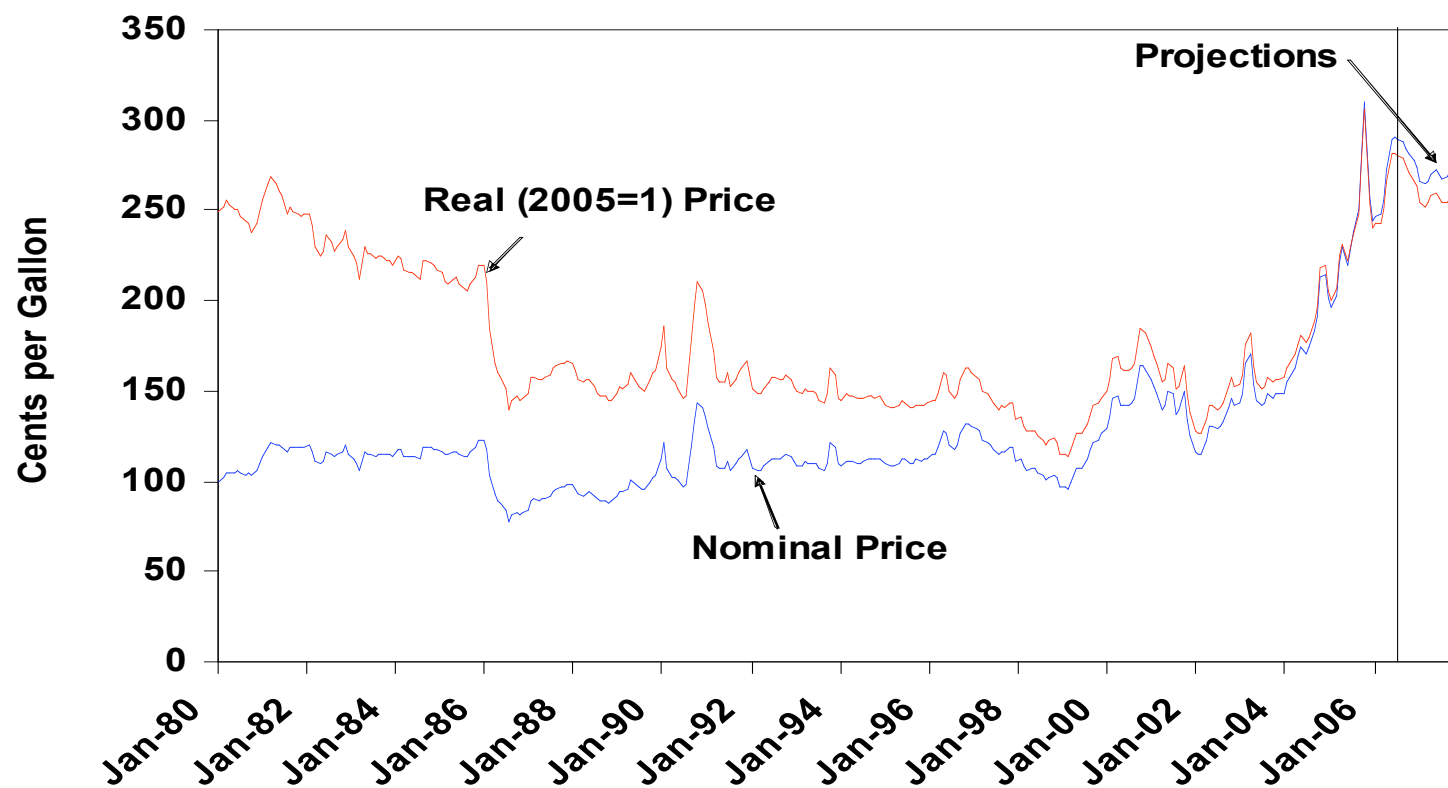
- **Decline in employment since early 80s**
- **Drop in undergraduate enrollments in professions essential to the industry, primarily engineering**
- **Decline in educational emphasis on math and science**
- **Growing perception that the industry is not a good place to pursue a career**



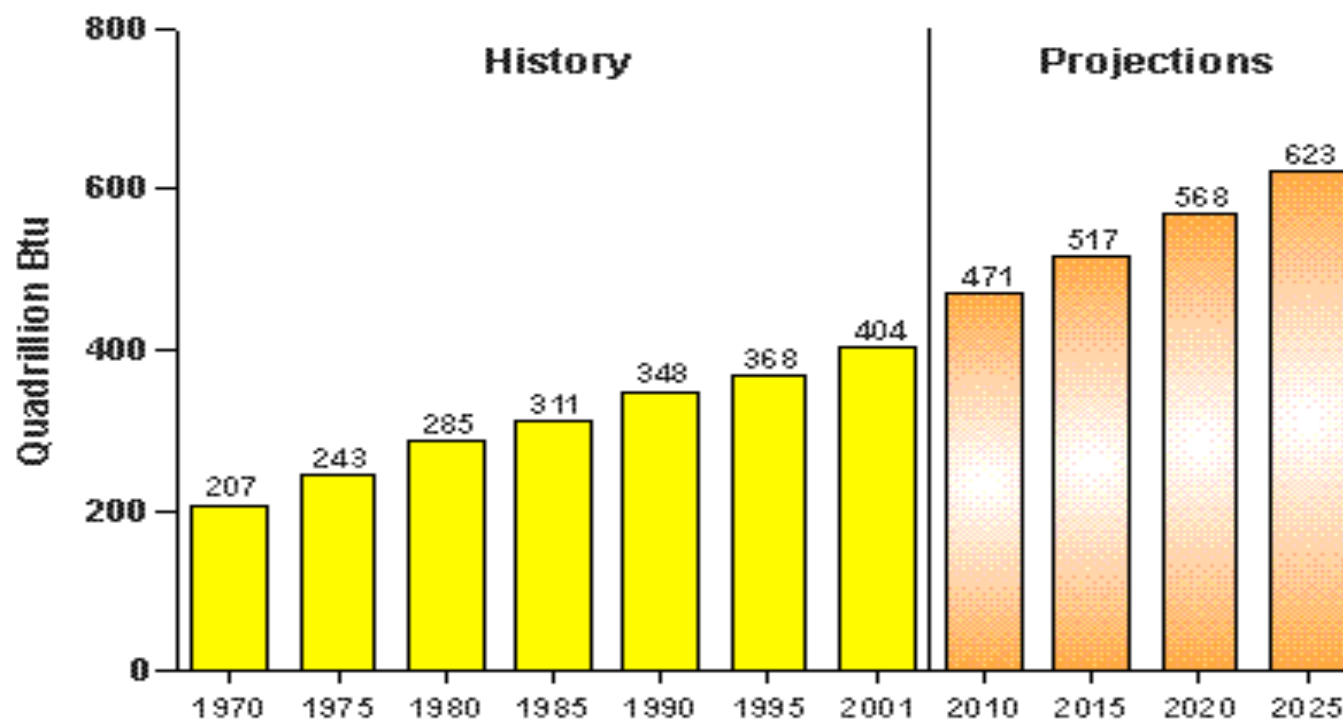
How Did This Happen?

- **Employment peak in 1982: 860,000 jobs**
- **Between 1982 and 2004, more than 600,000 jobs were lost through layoffs & attrition**
- **Oil and Gas prices were not sufficient to drive reinvestment for reserve replacement or additional refining capacity**

It's all about the Price



Good News: The Need for Oil and Gas Won't Diminish Anytime Soon!



World Energy Consumption, 1970-2025
Source: Energy Information Administration



In fact,



**sustaining even a 3%
rate of economic growth
will require major
expansion of world
supplies (more than
50% for oil, even more
for gas).**

IEA 2004



The Bad News

- **Every sector of the industry will need additional employees at a time when the workforce is maturing and there are no experienced replacements for them as they begin to retire.**



Hiring Needs by 2009

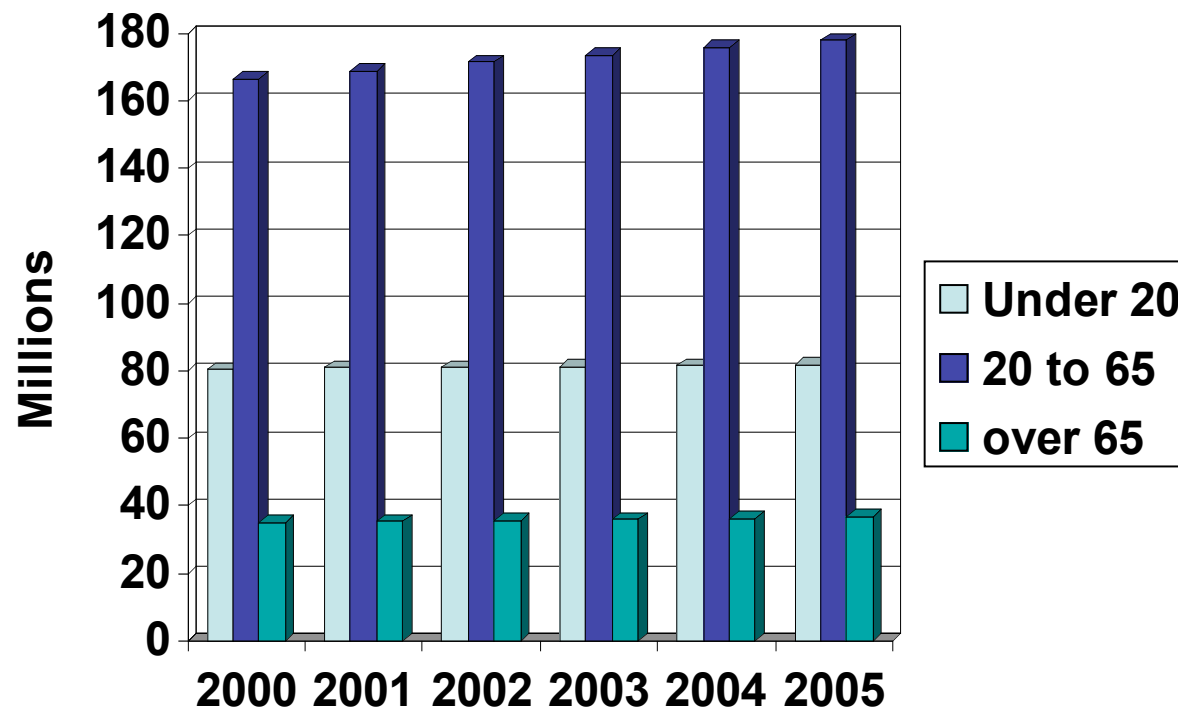
- To replace retiring workers and to satisfy increasing needs, the 22 sample firms that participated in the Survey expect to hire 22,000 new workers in the next three years.

API Workforce Taskforce Survey, May 2005 (survey conducted in 2004)

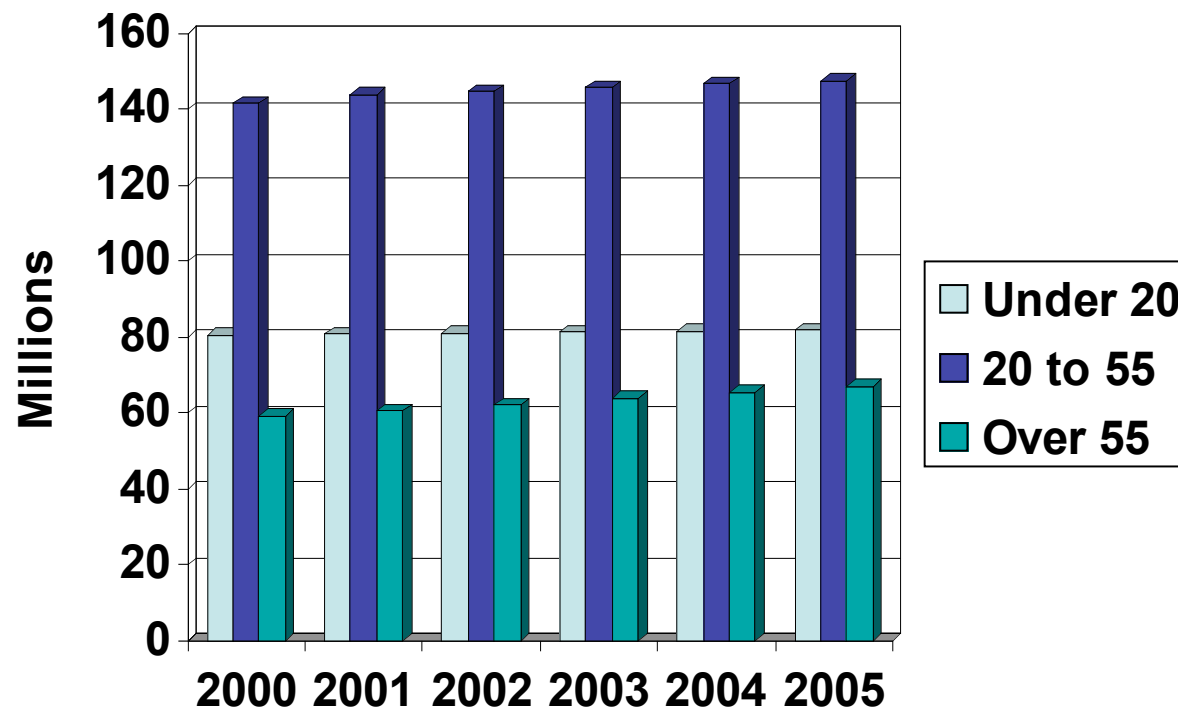


Is it just a numbers game?

Demographics Don't Lie



Demographics Don't Lie





Workforce Trends

from *Workforce Crisis*, Dychwald, et. al, Harvard, 2006

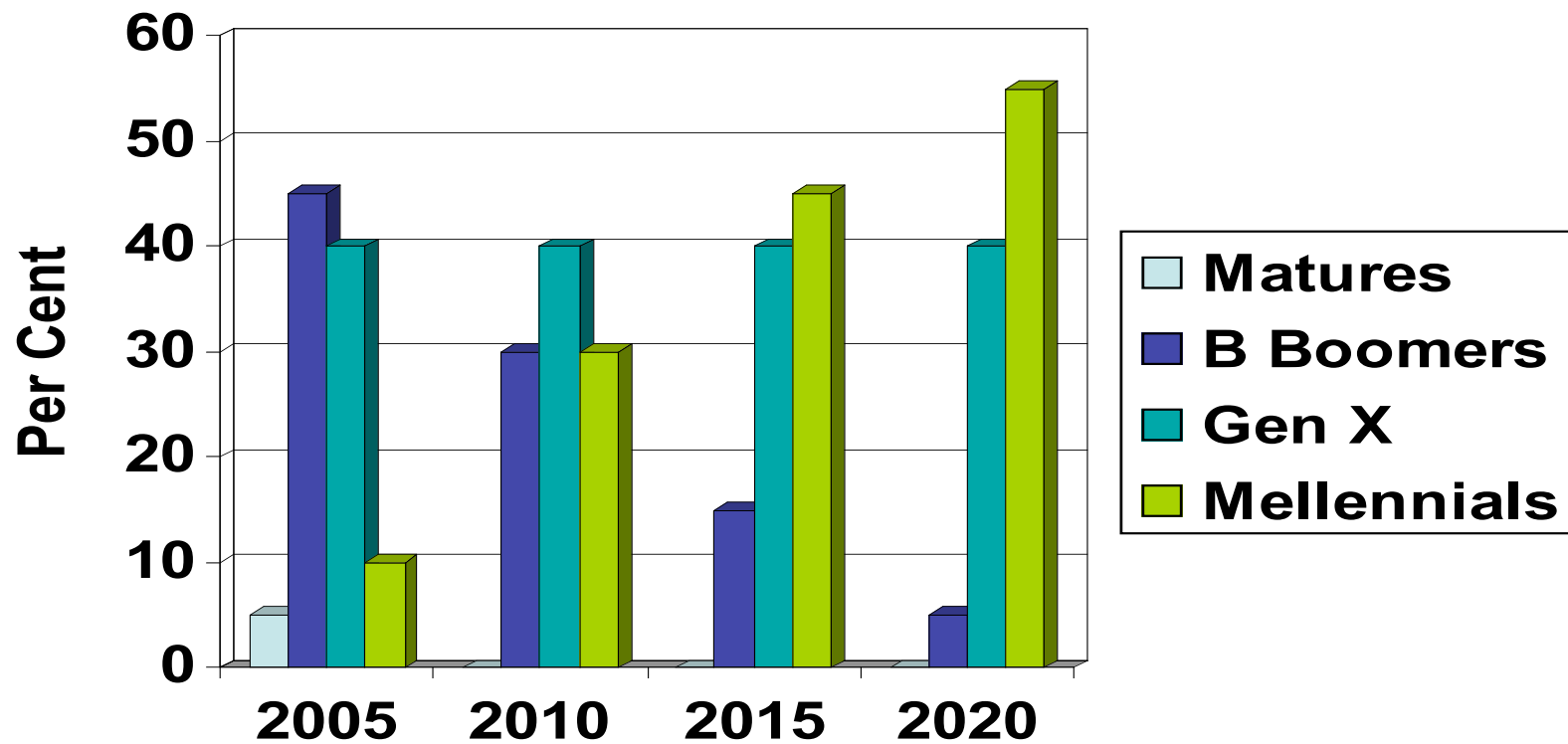
- **Aging**
- **More women**
- **More ethnic diversity**
- **More lifestyle variety**
- **Tightening labor markets**
- **Shortage of skills and experience**
- **Shortage of skilled workers**
- **Shortage of educated candidates**
- **Pressure on training and development**
- **Strain on organizational coherence**



Challenge: Learning Disabilities

- **Statistics are staggering--15% of the US population, or 39 million, have a learning disability**
- **With the impending labor shortage, these folks will become a vital part of the workforce**

Work Force Makeup

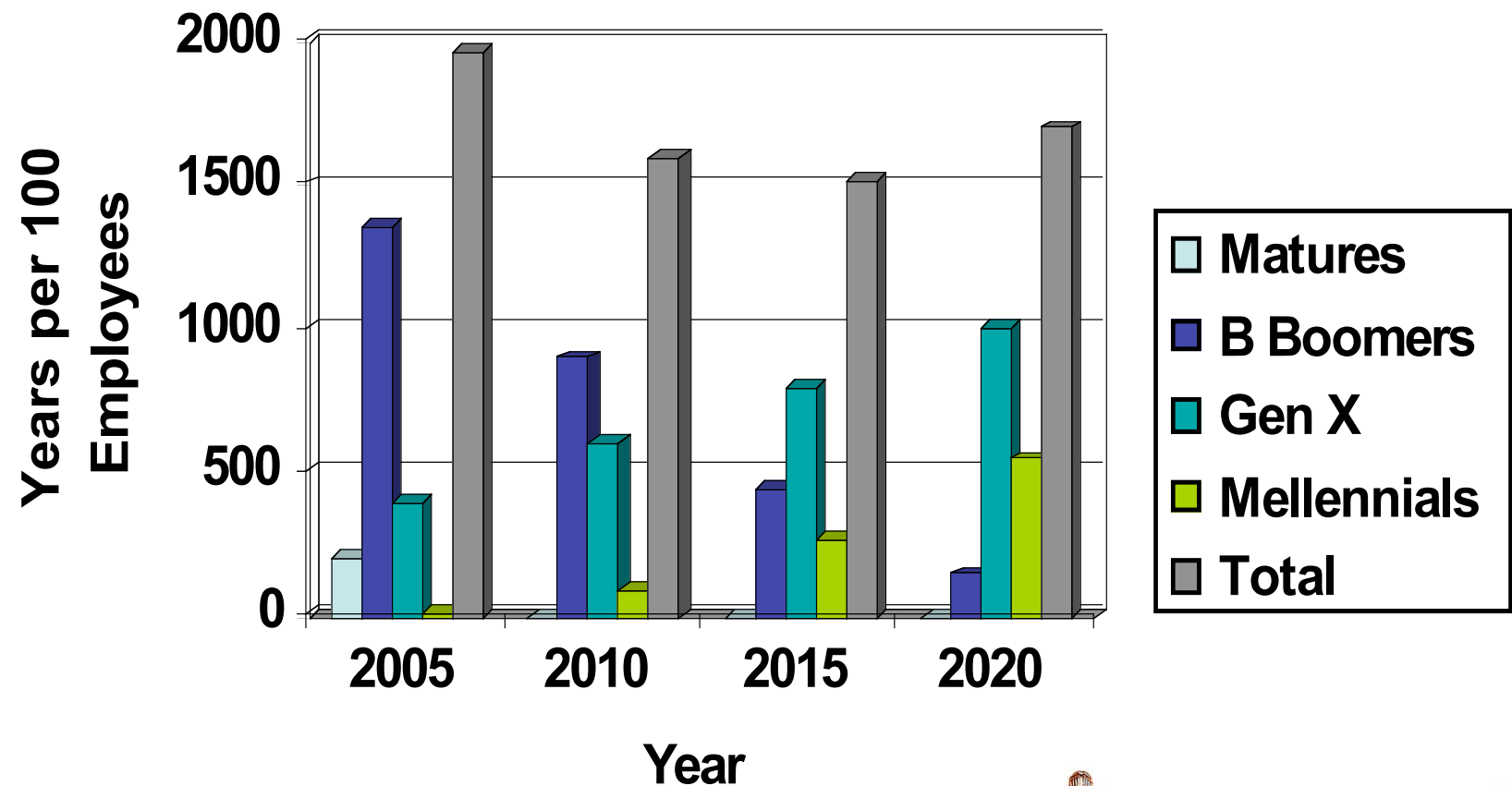




Generational Differences

- **Mellennials technologically savvy**
- **50% of Mellennials believe that their older work associates do not respect them**
- **70% of the older work associates believe that the Mellennials do not listen to them**
- **1 out of 3 Mellennials is a minority**
- **Express Yourself**

Experience Attrition





Well what is the Solution?



There is no Silver Bullet

The amount of training over the next decade for the petroleum industry will overtax the training resources of the industry and the training providers



Trend: Certification/Credentialing

- **Skills assessment is critical**
- **Mathematics does not add up-remediation is needed**
- **Certification is not a one time event**
- **Certification is an outsourced activity**



Trend: Learning Technologies

- **Just-in-time, on-demand training--a biggie!**
- **Instant Messaging**
- **Online courses and Rapid E-Learning (REL)**
- **Rich Site Summary (RSS)**
- **Wireless access**



Distributed Training

- **Training will occur close to the operating site**
- **More collaboration between training providers**
- **Modularization of training**
- **Standardization of training (please not the government)**



Trend: Outsourcing for on-site, hands-on training

- **Case study 1**
- **Case study 2**
- **Case study 3**