Seminar Outline

• What would you like to talk about?
• Background – fast and furious:
  – Brief bio and personal job experience
  – Jobs in the “Oil Patch” through a Chevron lense
• Q&A
Paul Henshaw: Short Bio

- **Education:**
  - BA Geology (UCB, 69), MS Oceanography (UW, ’75), PhD Oceanography (UW, ’78)

- **US Navy:** Active Duty ’69-’72, Reserve ’72-’94, Retired ’07!!
  - Oceanography, ASW
  - Communications, Engineering, Control of Shipping
  - ONR: Satellite Oceanography, Project Management

- **Chevron:** Exploration & Production, Technology ’77-’06
  - Geology/Geochem R&D
  - Geology/Geophysics E&P
  - Technology Supervisor: Tech Co and OPCO
  - E&P Asset Manager/Tech Manager
  - Technology and Research Manager

- **FUN:** K-12, University, Life
  - K-12 programs: Denver, Calgary, Bakersfield, SF Bay Area; AAPG/AGU
  - Geology & Physical Science Instructor: Cal Poly Pomona, CSUF, CSUB, USC
  - Coach & Referee: Soccer, Baseball
  - Marriage, Family, hiking, swimming, diving, tennis, skiing, reading, …
  - Retirement: consulting – PetroSkills, Chevron
Where in the World has Paul worked?
Reservoir Characterization focuses on data integration to model reservoir architecture and flow properties.
What is R&D in Industry?

**Upstream Growth Focus Areas**
- Exploration
- Deep Water Development

**Base Asset Focus Areas**
- Gas
- Heavy Oil*
- Reservoir Management
- Well Systems
- Facilities, Operations & Reliability
- Health, Environ. & Safety

**Transformational Focus Areas**
- HC Optimization
- Transformational Technologies
  - Information Technology
  - Molecular Transformations
  - Advanced Energy
  - Emerging & White Space
  - Measurements & Chemistry*
So, what was important for me?

TEAMWORK

• College:
  – Good friends, know some professors (should have done more)
  – Develop a good foundation in math/science, language, history
  – Geology - everything you can cram in - Geol/Geophys
  – Learn to think

• Grad School
  – Good friends, extracurricular activities
  – Know some professors well, develop mentors
  – Focus on specialty, but broaden fundamentals (math, physics, chemistry, languages/computers??)

• Job
  – Figure out what you like and do it!!!
  – Develop mentors
  – Manage own career: vocation / career / job
Lay of the Land in the Oil Patch

History

Future

SPE Age Demographics
Demographic Projection
Earth Scientists similar trend

So what is in it for you?

Good Times!
A World-Class Global Energy Company

Sixth Largest Global Company (Revenues $204.9 Billion)

- **180** countries
- **62,000** employees
- **12 billion** BOE net proved oil and gas reserves
- **2.6 million** BOE daily net production
- **19** refineries
- **3** retail brands
- **26,500** retail outlets

- Exploration & Production
- Refining
- Chemicals
What Do We Do as Earth Scientists?

• North America and International Operations
  - Regional trend mapping and exploration prospect identification
  - Exploration prospect maturation and well planning
  - Discovery appraisal and development planning
  - Reservoir characterization, prospect maturation and well planning in new and mature fields
  - Specialized geological and geophysical technical support for exploration and production operations
  - Economic evaluations and business planning
What Do We Do as Earth Scientists?

• Upstream Operations
  – Chevron International Exploration & Production (CIEP)
  – Chevron North America Exploration & Production (CNAEP)
  – Energy Technology Company

Geologist

Geophysicist

Petrophysicist

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What Do We Do as Earth Scientists?

- Energy Technology Company
  - Seismic imaging, acquisition and processing
  - Exploration geology and basin analysis & geochemistry
  - Reservoir geology, geochemistry
  - Formation evaluation
  - Rock & Fluid analyses
  - Subsurface properties from seismic
  - Integrated interpretation and modeling
Interns: Your Career Starts Here

• Intern employment - what can you expect to be doing?
  – Work as Earth Scientist in a CNAEP exploration or asset team… real-world projects with significant business impact
  – Work as Research Earth Scientist for ETC project
  – Work as Earth Science supporting a CIEP business unit
Chevron’s Earth Science Possible Career “Paths”

Several career paths available within large corporations

Numerous opportunities for future advancement

- Upstream Geologist
- Upstream Geophysicist
- Technology Company Geologist
- Technology Company Geophysicist

- Exploration Management
- Research and Development
- Asset Team Leader
- Technical Support

Senior Technical Positions

- Senior Earth Science Management Positions
- Senior Non-Earth Science Management Positions

Henshaw Career
# PetroSkills

## Geology Progression Matrix

<table>
<thead>
<tr>
<th>Geophysics</th>
<th>Geology</th>
<th>Petrophysics</th>
<th>Reservoir, Production &amp; Drilling</th>
<th>Petroleum Business</th>
<th>Health, Safety, Environment</th>
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<tbody>
<tr>
<td>Stratigraphy/Structure</td>
<td>Geochemistry</td>
<td>Reservoir Characterization</td>
<td>Basin Analysis</td>
<td>Development Geology</td>
<td>Mapping</td>
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<tr>
<td>Advanced Seismic Stratigraphy</td>
<td>Geochronology Techniques for Solving Reservoir Mont &amp; Field Development Problems</td>
<td>Basin Analysis Workshop</td>
<td>Prospect and Play Assessment</td>
<td>Development Geology Operations Geology</td>
<td>Integration of Rocks, Log and Test Data</td>
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<td>Introduction to Seismic Stratigraphy</td>
<td>Inversion &amp; Attributes</td>
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<td>Foundation</td>
<td>Seismic Interpretation</td>
<td>Sequence Stratigraphy</td>
<td>Petroleum Geochronology</td>
<td>Turbidite Sandstones</td>
<td>Production Geology for Other Disciplines</td>
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<td>Compressional and Tectonic Structural Styles</td>
<td>Structural Styles</td>
<td>Structural Styles in Petroleum Exploration</td>
<td>Carbonate Reservoirs</td>
<td>Sandstone Reservoirs</td>
<td>Mapping Subsurface Structures</td>
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<td>Basic Geophysics</td>
<td>Basic Petroleum Geology</td>
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Q & A