Applied Depositional Geosystems
Advisory Council Meeting
February 5, 2010

- 9:40  Posters and Coffee
- 10:30 Informal Student Presentations
- 11:30 Lunch and Informal Discussion
- 12:00 Introduction of New Students
- 12:15 Informal Student Presentations
- 1:15  Break
- 1:30  ADG Graduates (Where are they now?)
- 1:45  Overview of Program/Future Plans
- 2:00  Round Table Discussion

In attendance (Tentative):
- Jared Bosch - Chevron
- Angela Thomas - Shell
- Mike Liebelt - Marathon
- Angela Pell – Devon
- David Pocknall – Hess
- Jeff Nunn – LSU Geology
- Stacey Halphen – LSU Geology
- Emi Gilbert – BASC/LSU Foundation
Informal Presentations, Part 1

- Jake DeHamer – Salinity Variations as a Proxy for Fluid Flow in the Lower Ellesmerian Sequence: North Slope Alaska
- Erin Elliott* - Growth faults and relay ramps: a high resolution seismic survey in Livingston Parish, LA
- Adam D’Aquin – Geothermal Energy Potential of Bossier Parish, Northwestern Louisiana
- Amy Cone – New age control on a mid-shelf grounding zone wedge in the Eastern Basin, Ross Sea
New Students

- **Hongjiao Yu** - Kinematic evolution of the Lesser Himalayan Sequence, Western India
- **Sandra Garzon** - Palynomorphs from Upper Cretaceous Sequences in Central Columbia: a correlation tool for oil exploration
- **Timmon Drumm** - Subsurface site characterization and evaluation for carbon dioxide sequestration
- **Bolu Owolana** – Structure and Petroleum Geology
- **Laurie Richards** – Petroleum Seismology
Informal Presentations, Part 2

- Kyle Metz – Metamorphic rocks in the Sawtooth Mountains, Idaho, USA: A Window into the Precambrian Basement of Southwest Laurentia
- Andrew Steen – Spatial Variations of Temperature, Pressure, Salinity, Offshore Louisiana Salt Dome: Implications for Fluid Flow
- Ruben Cisneros – Determining the Provenance and Origin of Beach Ridge and Modern Beach Sands from the Costa de Nayarit, Western Mexico
- Andrew Sampson* – Hot Dry Rock Geothermal Potential in the Cooper-Eromanga Basin, South Australia
LSU’s Program in Applied Depositional Geosystems

2009
Student Demographics

- Calvin College, MI
- Centenary College, LA
- College of Charleston, SC
- Colby College, ME
- Dillard U.
- Louisiana State
- Michigan State
- Millsaps College, MS
- N. Arizona
- Neumann College, PA
- Peking U.
- Penn State
- Smith College, MA
- SMU
- Spring Hill College, AL
- Texas Tech
- U. Industrial de Santander
- U. New Orleans
- U. Tennessee
- U. Tulsa
- **10 Graduates/2 Departures**
- **26 Students**
- **Average UG GPA > 3.5**
- **20 Colleges/Universities**
- **12 States**
- **14 men**
- **12 women**
- **3 minority**
- **3 foreign nationals**
ADG Student Thesis Topics

- Chad Phillips - Analysis of Hydrocarbon Migration in Southern Sabine Uplift
- Kyle Metz – Metamorphic and tectonic evolution of Precambrian roof pendants in the Sawtooth Mountains, central Idaho, U.S.A.
- Andrew Steen – Spatial Variations of Temperature, Pressure, Salinity, Offshore Louisiana Salt Dome: Implications for Fluid Flow
- Ruben Cisneros – Determining the Provenance and Origin of Beach Ridge and Modern Beach Sands from the Costa de Nayarit, Western Mexico
- Jake DeHamer – Salinity Variations as a Proxy for Fluid Flow in the Lower Ellesmerian Sequence: North Slope Alaska
- Amy Cone – New age control on a mid-shelf grounding zone wedge in the Eastern Basin, Ross Sea
- Erin Elliott* - Growth faults and relay ramps: a high resolution seismic survey in Livingston Parish, LA
- Andrew Sampson* – Hot Dry Rock Geothermal Potential in the Cooper-Eromanga Basin, South Australia
- Adam D’Aquin – Enhanced Geothermal Energy Potential of Northwestern Louisiana
- Sandra Garzon - Palynomorphs from Upper Cretaceous Sequences in Central Columbia: a correlation tool for oil exploration
- Timmon Drumm - Subsurface site characterization and evaluation for carbon dioxide sequestration
- Hongjiao Yu - Kinematic evolution of the Lesser Himalayan Sequence, Western India
- Bolu Owolana – Structure and Petroleum Geology
- Laurie Richards – Petroleum Seismology

* Supported by ADG funds in 2009
Prior Graduates

- Jill Womack* - Modeling Late Quaternary conditions to estimate fluvial sediment supply to shelf-margin deltas along the northern Gulf of Mexico (Marathon)
- Angela Pell* - Evolution of an allochthonous salt system, Mars-Ursa Basin, northern Gulf of Mexico (Devon Energy)
- Sam Gray - The Middle Miocene Climate Shift on the Ross Sea Continental Shelf: A First Order Test of the Marine Oxygen Isotope Record (Environmental Firm in Oregon)
- Anna Marie Belanger – Regional Fluid Flow of the Central North Slope Foreland Basin, Alaska (ConocoPhillips)
- Clint Edrington - Long-term subsidence and compaction rates: a new model for the Michoud area, South Louisiana (Ph.D. program in Coastal Studies with Harry Roberts)
- Matthew Garvin* - Late Quaternary Geochronologic, Sedimentologic, and Stratigraphic Framework of the Trinity River Incised Valley: Lower Coastal Plain, Texas (ExxonMobil)

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2009 Graduates

- Vincent Adams - Do deep-sea sedimentary cycles at ODP Leg 178 drift sites record Antarctic Peninsula Ice Sheet grounding events? (Devon)
- Rhonika Robinson* - Numerical modeling of West Antarctic Ice Sheet grounding-line stability/response under the influence of changing ocean temperature and shelf morphology. (Chevron)
- Corine Armstrong – Tectonic evolution of the San Luis Basin, CO-NM, USA as determined through provenance studies. (Chevron)
- Eric Prokocki - Holocene Mississippi River Avulsion History: Yazoo Basin, Mississippi. (Ph.D. Program, University of Illinois)

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Left Program

- Robin Murray* - Quaternary Sea Level Change in the Northern Gulf of Mexico (Bass Energy)
- Catherine Sutera* - Sedimentation in the northern Gulf of Mexico (LSU Museum)

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Recruiting Efforts

Recruiting poster distributed to 250 schools

Information on ADG available on our website, Department Recruiting Poster and Department Booth at AAPG and GSA Meetings

New in 2009

Ph.D. Recruiting Thrust

100% Yield

For more information on this program logon to www.geol.lsu.edu or contact the Graduate Coordinator at 225-578-3353, heather@lsu.edu
Recruiting Site Visit

- 3-4 ADG applicants are brought in each spring for a 2 day group visit with 3-4 other top candidates. Each visitor is assigned a student host.

Day One
- Overview of Department/Program
- Tour of Laboratories
- 10 short presentations by faculty on research topics
- Individual interviews with 3 faculty members
- Graduate Student Forum on Careers/Recent Graduates
- TGIF/Dinner with Graduate Students

Day Two
- Crawfish Boil
- St. Patrick’s Day Parade
Faculty Participation

- **Major Professors**
  - Phil Bart
  - Mike Blum
  - Jeff Hanor
  - Darrell Henry
  - Jeff Nunn
  - Barb Dutrow
  - Juan Lorenzo
  - Sophie Warny
  - Alex Webb

- **Taught in Curriculum**
  - Brooks Ellwood
  - Zaki Bassinoui, PE
  - Steve Sears, PE
  - Chris White, PE
  - Alan Brown
ADG Curriculum

Section 1 - Common Courses (12 hours). Courses address (a) fundamentals of petroleum geology, and (b) quantitative geophysical and geochemical skills required in the industry.

- Formation Evaluation (taught by PE)
- Geochemistry of Natural Waters & Sediments OR Physical Hydrogeology
- Exploration and Environmental Geophysics
- Seismic/Sequence Stratigraphy or Subsurface Geology
ADG Curriculum

Section 2 - Specialized Courses (12 hours). Courses selected by student and advisor based on research interests and thesis topic. Examples of appropriate courses are listed below. Other courses can be substituted as appropriate. New classes are in bold face.

- Petroleum Geology
- Plate Tectonics
- **Stratigraphy**
- Reflection Seismology
- Advanced Structural Geology
- Deltaic Processes and Products
- Deepwater Depositional Environments
- **Fluvial Processes and Systems**
- Numerical Methods in the Geological Sciences
- Dynamics of Sedimentation
- **Sedimentary Provenance**
- Geodynamics
- Carbonate Systems
- **Reservoir Characterization**
- Clay Mineralogy
- Sequence Stratigraphy
ADG Curriculum

- Section 3 - Seminars (4 hours)
- Section 4 - Thesis (6 hours)
Graduate Classes 2009-2010

**Fall Semester**
- Petrologic Mineralogy
- Intro. Micropaleontology
- Geoarchaeology
- Reflection Seismology
- Geomicrobiology
- Physical Hydrogeology
- Isotope Geochemistry
- Clay Mineralogy
- Antarctic Sedimentology (SEM)
- Geochemistry of Petroleum Reservoirs (SEM)

**Spring Semester**
- Earth Materials & Environment
- Stratigraphy
- Exploration & Environmental Geophysics
- Plate Tectonics
- Geochemistry of Sediments & Natural Waters
- Subsurface Geology
- Sequence Stratigraphy
- Paleoecology
- Petroleum Seismology
- Advanced Methods in Aqueous Geochemistry
- Mesozoic Sedimentary Record (SEM)
- Antarctic Sedimentology (SEM)
- Himalayan Tectonics (SEM)
- Imperial Barrel Award (SEM)
Support Received in 2009

- Shell - $25,000
- Chevron - $30,000
- Marathon - $60,000
- Hess - $15,000
Other Sources of Support

- 12 out of 14 students supported by non-ADG funds (e.g., TA/RA)
- LSU pays tuition for all ADG students
- LSU Alumnus has pledged $225,000 to support a subsurface lab technician for 3 years
- 7 Petrel Licenses from Schlumberger (Devon paid 3rd party royalties for 3 years)
- $10K from BP to buy computers to run Petrel
- BP also donated 30 Sun Boxes
- ConocoPhillips Fellowship (Drumm)
- Marathon/Chevron/Encana Scholarships
Pledged Support

- Marathon - $30,000 (final year of 5 year pledge)
Future Recruiting Options

- Recruiting visits to other schools via GeoDE (currently too costly for ADG/Dept.)
- Other curriculum (physics, chemistry, biology or Honors College) – Honors/GAEMP/GeoDE Scholarships
- More involvement with SEG/SPE
- Department booth at the American Geophysical Union meeting (currently too costly for ADG/Dept.)
Future Faculty Hires

- **2009 Hires**
  - Department Chair (Carol Wicks)
  - Structural Geologist (Alex Webb)
  - Palynologist (Sophie Wary)

- **Funded Positions**
  - Harrison Chair in Sedimentology (offer declined)
  - McCord Chair in Petroleum Geology
  - John Franks Chair (Discipline Open)
  - AASP Chair in Palynology (interviewing)
Pending/Planned Proposals

- ConocoPhillips (did not interview at LSU in 2009)
- Newfield
- ExxonMobil Match (2 retires)
- Encana
- Devon
- BP
Other Funding Options

- Smaller companies provide a project specific Research Assistantship in the second year of the MS program
- ADG Endowment