

# LSU's Program in Applied Depositional Geosystems

2007-2008

# Student Demographics

- U. Tennessee
- Kansas State
- Michigan State
- Louisiana State
- U. New Orleans
- Penn State
- Texas Tech
- Dillard U.
- Texas A & M
- Spring Hill College, AL
- Calvin College, MI
- 4 Graduates/1 Departure
- 14 Students
- Average UG GPA > 3.5
- 11 Colleges/Universities
- 8 States
- 11 men
- 3 women
- 2 minority
- 1 foreign national

# ADG Student Thesis Topics

- Chad Phillips - Analysis of Hydrocarbon Migration in Southern Sabine Uplift
- Clint Edrington - Subsidence in South Louisiana
- Matt Garvin\* - Stratigraphic and sedimentologic architecture of the Trinity River Incised Valley Fill
- Vincent Adams - Do deep-sea sedimentary cycles at ODP Leg 178 drift sites record Antarctic Peninsula Ice Sheet grounding events?
- Rhonika Robinson\* - Numerical modeling of West Antarctic Ice Sheet grounding-line stability/response under the influence of changing ocean temperature and shelf morphology.
- Corine Armstrong – Tectonic Evolution of the San Luis Basin, CO-NM, USA as Determined Through Provenance Studies
- Eric Prokocki - Holocene Mississippi River Avulsion History: Yazoo Basin, Mississippi
- Catherine Sutera\* - a field oriented project on sedimentation in the northern Gulf of Mexico
- Kyle Metz\* – Structural and tectonic evolution of roof pendants in the Sawtooth Mountains, Idaho, USA
- Andrew Steen – 3D/4D seismic analysis
- Taylor Gray – subsurface well analysis with Jeff Nunn
- Kody Kramer – fluid flow with Bill Blanford
- Ruben Cisneros – seismic/well analysis with Jeff Nunn
- Jake DeHamer – well log analysis North Slope of Alaska with Jeff Nunn and Jeff Hanor

\* Supported by ADG funds in 2007-2008

# Graduates/Left Program

- 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 (**Undecided**)
- Anna Marie Belanger – Regional Fluid Flow of the Central North Slope Foreland Basin, Alaska (**ConocoPhillips**)
- Robin Murray\* - Quaternary Sea Level Change in the Northern Gulf of Mexico (**Bass Energy**) – left program last fall

\* supported by ADG Funds



## APPLIED DEPOSITIONAL GEOSYSTEMS



### ADG, one of a kind Graduate School Program...

This special program provides a focused curriculum of classes, cross-training with petroleum engineers, and thesis research projects pertinent to oil exploration and production



**ADG Specific Courses:**  
Reservoir Characterization  
Exploration & Environmental Geophysics  
Sequence Stratigraphy  
Seminar in Petroleum Geosystems  
A Specialized Course in Stratigraphy  
Formation Evaluation  
...and more



#### Did U Know??

- The LSU ADG program is supported by industry leaders, such as Shell, Marathon Oil Corporation, Chevron, Dominion, and Devon Energy
  - 17 Oil Companies recruited at LSU in fall 2007
- The LSU ADG program offers training in Landmark and Petrel software

\$25,000 stipends + tuition are available to well qualified students interested in the Oil & Gas Industry

For more information on this program logon to [www.geol.lsu.edu](http://www.geol.lsu.edu) or contact the Graduate Coordinator at 225-578-3353, [heather@lsu.edu](mailto:heather@lsu.edu)

# Recruiting Efforts 2007-2008

Recruiting poster distributed to  
250 schools

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

3 new students in January

August Applications look good

# 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
- Bill Blanford

## ■ Taught in Curriculum

- Brooks Ellwood
- Zaki Bassinoui, PE
- Steve Sears, PE
- Chris White, PE

# 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 2006-2007

## Fall Semester

- Earth Systems
- Plate Tectonics
- Geomicrobiology
- Geochemistry of Sediments & Natural Waters
- Basin Analysis
- Carbonate Systems
- Formation Evaluation (PE)

## Spring Semester

- Chemical Oceanography
- Earth Materials & Environment
- Physical Stratigraphy
- Vertebrate Paleontology
- Subsurface Geology
- Physical Hydrogeology
- Fluvial Processes & Systems
- Clay Mineralogy
- Special Topics:  
Biogeochemistry methods

# Graduate Classes 2007-2008

## Fall Semester

- Geomicrobiology
- Advanced Hydrogeology
- Reflection Seismology
- Geochemistry of Sediments & Natural Waters
- Isotope Geochemistry

## Spring Semester

- Exploration & Environmental Geophysics
- Geoarchaeology
- Coastal & Shallow Marine Deposition
- Subsurface Geology
- Sequence Stratigraphy
- Clay Mineralogy
- Reservoir Characterization
- Adv. Methods Aq. Geochem.
- Microscopy

# Outside Speakers/Short Courses

- Rebecca Latimer, Chevron
- Peter Flemings, PSU (and now UT Austin)
- Landmark and Petrel (Al Brown) training

# Support Received in 2007

- Shell - \$15,000
- Chevron - \$30,000
- Marathon - \$30,000
- Dominion - \$50,000
- Devon - \$30,000

# Other Sources of Support

- 10 out of 14 students supported by non-ADG funds (e.g., TA/RA)
- LSU pays tuition for all ADG students

# Pledged Support

- Marathon - \$120,000 (over 4 years)
- Dominion - \$100,000 (over 2 years)
- Shell - \$25,000

# Future Recruiting Options

- Other countries (e.g., UK or Norway)
- Recruiting visits to other schools
- Other curriculum (physics, chemistry, biology or Honors College) – Honors/GAEMP/GeoDE Scholarships
- More involvement with SEG/SPE
- Add a Department booth at the American Geophysical Union meeting – tried in 12/07
  - 14,500 attendees last month
  - all abstracts accepted (large student attendance)

# Future Faculty Hires

- Funded Positions
  - Harrison Chair in Sedimentology
  - Geodynamics/Geophysics
  - McCord Chair in Petroleum Geology
  - John Franks Chair (Discipline Open)
  - Structural Geology
  - Department Chair
  - Palynology
- Unfunded Positions
  - AASP Chair in Palynology
  - Isotope Geochemistry

# Pending/Planned Proposals

- BP - pending
- ConocoPhillips - pending
- EnCana – not funded
- Hess – pending
- Newfield - pending
- ExxonMobil Match (2 retires) - pending

# Other Funding Options

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

# Managed Growth

- Our Undergraduate and Graduate Enrollments will go up in the next 5 years
  - More hires
  - Higher salaries
- LSU G&G in 1981
  - 90+ graduate students
  - 350+ majors
- How do we increase our enrollments while maintaining or even increasing quality of students and quality of training?