THE ANOMALY

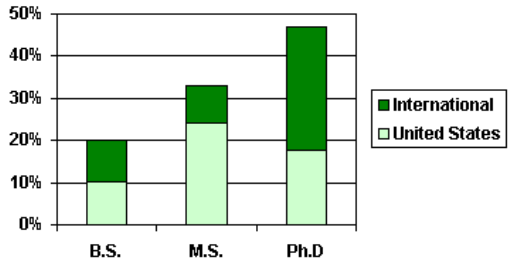
Volume 3, Issue 1

Winter/Spring 2001

"Survey Says…"

The SEG received over 80 responses to our Career Survey from a variety of students from 19 countries around the globe. The purpose of this survey was to give the SEG a better picture of our student demographic in respect to your current job-hunting proces ses and the industries you're most interested in. Finally, we wanted to get some ideas as to how the SEG can help you in your career planning, from initial discipline selection through job placement.

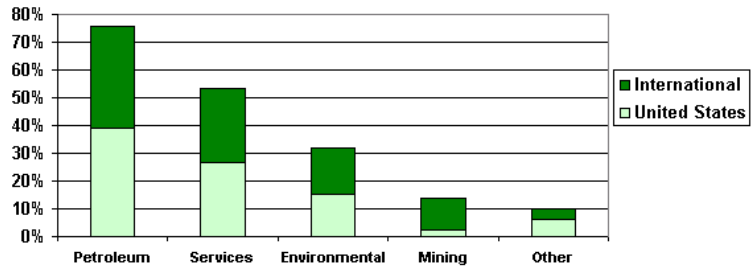
Student Demographic



Of the students who responded, 47% were currently getting their Ph.D's, 33% their Master's, and 20% are in the process of getting their B.S. degrees. Out of these, 75% were getting their degree in Geophysics, 19% in Geology/ Geological Engineering, and 6% were in fields such as Applied Mathematics, Geochemistry and Petroleum Engineering.

After obtaining their current degree, the majority of students who responded (68%) will be seeking industry-related positions, with 20% planning on careers in academia and 12% going on for an advanced degree.

Job Hunting



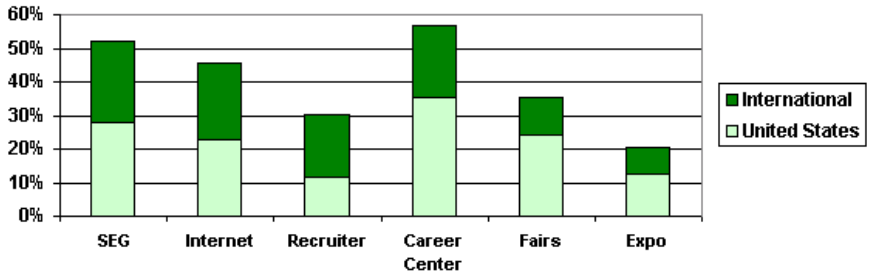
This spring will find most of you (55%) looking for a full time position, and the rest for a summer job or co-op. We found that the main two areas you'll be searching in will be in the petroleum and services industries, which wasn't a surprise. It was interesting, however, to note how many of you are also looking at the possibility of an environmental career. We also found that, with the exception of the Mining industry, geographic location did little to impact your areas of interest.

(Continued on page 2)

students.seg.org

(Continued from page 1)

Most of you used a variety of job search tools in conjunction with one another. What we did learn from this part of the survey, was that the SEG could be doing more for you. With only half of the respondents using the current employment service offered, we're either not advertising the service well enough... or not making it robust enough for it to be of service to students.



What can we do to better serve you?

Finally, we asked you to give us some suggestions as to how we could serve you better, in your job search and continuing education. The most responses dealt with the need for an improved and comprehensive careers site within the SEG web pages. You recommended that this site should:

- ?????give up-to-date information on a variety of companies, not only in the petroleum industry
- ?????list a salary survey for new hires
- ?????have an online, searchable resume posting system that is free to users and companies
- ?????send email notifications to students when a new job is listed
- ?????advertise it's services better to both the users and hiring companies.

You also gave us ideas on providing more workshops available to students for resume writing, interviewing, etc. possibly at the SEG Annual Meeting. Remote education available through the internet was also a hot topic. To aid in our overseas members, one respondent asked that we make the membership dues more affordable in light of the current strong US dollar and exchange rates.

All of your suggestions will be carefully considered and many implemented. Thank you to all the students that took the time to complete this survey and offer feedback… remember, we're here to serve you!

Countries Represented:

Australia
Brazil
Canada
China
Denmark
UK
France
Germany
Ireland
Italy
Libya
Mexico
Norway
Russia
South Africa
Sweden
Turkey
USA
Venezuela

SEG Student Newsletter

Want to see your school highlighted?

Have an issue you'd like to raise?

Want to know about employment opportunities?

This is YOUR newsletter, tell us what you'd like to see!

Contact Information

Editor:
Alison Begeman abegeman@lgc.com
7409 S. Alton Ct.
Englewood, CO 80112
(303) 779-8080

SS/AL Chairman:
Kay Dautenhahn Wyatt kdw@ppco.com
560 Plaza Office Building
Bartlesville, OK 74004
(918) 661-9710

SEG Student Affairs Coordinator
Leslie Eames leames@seg.org
8801 S. Yale
Tulsa, OK 74137
(918) 497-5538

Karaoke Fun at the Annual Meeting!

The SEG Student Reception has come to be one of the Annual Meeting's most fun and talked about social events. It provides students an opportunity to become more acquainted with distinguished members at the meeting in a relaxed atmosphere complete with incredible entertainment, food, and fun.

This year's winners of the Karaoke Competition were:

1st place—Universidad Simon Bolivar of Venezuela
"Suavemente" performed by Laura Montes, Daniel Rosales, Felix Doante, Carmen Mora, Catalina Aevna, Ludmila Adam, Juan Ramon Jimenez, Carlos Nieto, Henry Compos, Hector Klie, Ezo Aconcha, Adrian Sanchez, Alghys de Los Rios, Pablo Buena-famo, and Gweude Michand.
(receiving a plaque and an unrestricted $300 award for their section)

2nd place—University of Saskatchewan
"These Boots Are Made for Walkin'" performed by Tyler Mathieson and Joel Grunenund
(receiving an unrestricted $200 award for their section)

3rd place—Michigan Tech
"American Pie" performed by Angela Matelski, Steve Chittick, and Anastasia Minaeva
(receiving an unrestricted $100 award for their section)

Introducing...

Leslie Eames
SEG Student Affairs Coordinator

Welcome to Leslie, our new Student Affairs Coordinator!

Leslie is a native of Tulsa, Oklahoma and has spent the majority of her life in the city. She graduated from the University of Oklahoma with a BA in Communication and a minor in Business. Leslie is getting married this June and her future husband shares her passion for water skiing and horses.

Leslie enjoys working with university students and is looking forward to her varied and interesting projects with them. She hopes to meet many of you at the Student Reception this September and at the Student Expo in October.

Graduating this year?

Don't forget to update your membership information with the SEG! Change in address data can be sent to:

Leslie Eames
leames@seg.org

Need to upgrade to Associate status?

Download the application from the SEG website:

seg.org/services/membership

A recurring column designed to bring you information on graduate schools providing a curriculum in geophysics.

Where to Go?

Geophysics at the University of Wyoming

(*submitted by Donna Shillington*)

This is an exciting time for geophysics at the University of Wyoming. The Department of Geology and Geophysics hired four new faculty members last year, including two geophysicists. Many varieties of exciting geophysical research are in progress: controlled-source and passive seismology, rock physics, modeling of such different phenomena as glaciers and magma generation and migration, shallow geophysics and potential fields research. A long list of courses in geophysics and geology and exceptional research facilities are available to graduate students in geophysics. Currently, there are eight faculty members, five post-docs and thirteen graduate students working in geophysics. Together, these people represent a broad range of expertise and give students plenty of opportunities to bounce ideas off other people who share their interests.

Research

Controlled-source seismology

Current active seismology projects target interesting geologic problems in both oceanic and continental settings. Dr. Scott Smithson and his students are working on part of the multi-channel seismic reflection (MCS) data set collected for Continental Dynamics of the Rocky Mountains Project (CD-ROM), a huge multi-disciplinary effort involving many institutions. The MCS data set collected here in the Rocky Mountains in 1999 crosses the Cheyenne Suture, a suture between Proterozoic and Archaen terrains. Further information about the structure and location of this suture can shed light on Precambrian tectonics. Dr. Smithson is involved in other projects including a seismic data set collected in and around the Kola Borehole in Russia, the deepest borehole in the world, and data recorded on stations positioned across Eurasia during peaceful nuclear testing.

On the marine end of the spectrum, Dr. W. Steven Holbrook uses multi-channel seismic reflection and wide-angle refraction data to investigate interesting problems in the realm of marine geology. These projects include both crustal-scale investigations of continental margins and more focused imaging of gas hydrate deposits. He recently led a group of post-doctoral, graduate and undergraduate students from the University of Wyoming on two research cruises in the Atlantic Ocean; the first cruise took them off the coast of Newfoundland, the second off the coast of South Carolina and Georgia. The Newfoundland cruise acquired data that imaged the Newfoundland Basin, a non-volcanic margin that rifted from Iberia over 100 m.y. ago. The second cruise targeted Blake Ridge, one of the world's most studied gas hydrate deposits. Gas hydrates form when methane crystallizes in an ice-matrix; gas hydrates are found in deep-sea sediments and permafrost areas, and they are estimated to house over half of the world's organic carbon. Other recent projects include seismic studies of East Greenland, a volcanic rifted margin, the South Island of New Zealand, a transpressional plate boundary, and the Aleutian Trench and Island Arc.

Dr. Micheal Cheadle, a new member of our department, works with both marine and continental seismic reflection data to investigate a wide range of geologic problems. Recently, he has studied the seismic response of layered intrusions by examining a seismic reflection data set from the Bushveld intrusion. Dr. Cheadle also studies detachment faulting at mid-ocean ridges and other phenomena using reflection data.

Passive Seismology

Dr. Ken Dueker is another new addition to our department, and he uses recordings of earthquakes on dense arrays of broadband seismometers to image the upper and lower mantle below the western United States. In the last year, Dr. Dueker and his students have deployed seismometers in several hot areas of research across the west. Most recently, his group has studied arrivals recorded on the Laramie array and Lodore array to image the Cheyenne suture (mentioned above), and arrivals recorded on instruments deployed around Yellowstone to determine the nature of the Yellowstone Hotspot. These seismic and teleseismic recordings can provide information about the character of the Mohoveric, 410-km and 660-km discontinuities, constrain estimates of temperature and composition variations within the mantle, and provide clues on the nature of mantle processes, like convection, rising plumes, and subducting slabs. Dr. Dueker and his students also analyze data recorded on the Global Seismic Network (GSN) to obtain tomographic models of the entire planet

Rock Physics

On a very different scale, Dr. David Fountain examines the physical properties of lower crustal rocks recovered by drilling or brought to the surface in orogenic belts. By measuring the sonic velocities, thermal conductivity, radiogenic heat production and other characteristics of these rocks at a range of pressures, Dr. Fountain provides constraints on geologic interpretations made from crustal-scale seismic studies like those discussed above. The lower crust remains one of the most enigmatic components of the lithosphere, and studies of rocks thought to reside in this region at one time can improve our understanding of continental

tectonics. Dr. Fountain has worked on samples taken from the Bergen arc in Norway, Ruby Mountains in Nevada, Kettle Dome in Washington, the Newberry Caldera, just to name a few.

Potential Fields

In the realm of potential fields, Dr. Maureen Steiner and her students use the paleomagnetic signatures stored in rocks to solve various geologic puzzles, including plate motion reconstructions, dating and more. Her recent projects include an investigation of the Jurassic Quiet Zone, old oceanic crust that lacks the magnetic signature ("stripes") associated with seafloor spreading, dating of the Manson impact crater using magnetic characteristics of rocks in the vicinity of the impact, and plate motion studies of the Colorado Plateau and the Mojave Desert Shear Zone.

Modeling

Several scientists in our department work towards an understanding of physical processes using models. Dr. Neil Humphrey primarily studies cold regions, and he and his students model rock glacier movement, ice rheology, and the impact of rivers on the geomorphology of various regions. This work complements field measurements taken in such far-reaching places as Alaska, Nepal, Colorado and here in Wyoming. Dr. Michael Cheadle also uses models, but he applies them to the generation, migration and emplacement of magmas, the physico-chemical interaction of reactive fluids, and detachment faulting at mid-ocean ridges.

Shallow Geophysics

Geophysical investigations of the shallow subsurface using Ground Penetrating Radar (GPR) are also in progress at the University of Wyoming. John Bradford, a research scientist in our department, uses GPR to image the ebb and flow of pollutants at sites including the Hanford Site and at several National Environmental Technology Test Sites. Light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL), toxic liquids that do not dissolve in groundwater, are an environmental problem at the sites above. Dr. Bradford uses techniques traditionally applied to seismic data, like AVO and attenuation analysis, to glean information about the electric properties of subsurface materials from GPR data. The electric properties of LNAPL and DNAPL make them particularly suited to this kind of study. Dr. Neil Humphrey and his students use GPR to image glaciers.

The research projects described in this section are funded by a host of agencies, including the National Science Foundation and the Department of Energy. This is only a brief synopsis of the many investigations in progress in the Department of Geology and Geophysics. For more complete descriptions of these and other research projects, go to http://home.gg.uwyo.edu and click on "Research."

Facilities

All of the exciting research discussed above would not be possible without top-notch facilities. The Department of Geology and Geophysics inhabits a set of concatenated buildings, including the Hall of Science Building, the S.H. Knight Hall and, the most recent addition (1996), the Earth Sciences Building, which contains 35,000 square feet of lab, office and classroom space by itself. Several computer labs with UNIX workstations, Macintosh, and PC's are available to students, and one of these is a dedicated seismology lab. Some UNIX workstations in the seismology lab run Landmark's PROMAX, Paradigm Geophysical's FOCUS 2D/3D and Power 2D. An entire shop filled with seismic acquisition equipment, including vibroseis trucks, seismometers, geophones, and other geophysical equipment is run by Scott Smithson. A surficial processes cold lab, high-pressure rock physics lab, a paleomagnetics lab, and more are also located on our premises. For more detailed descriptions of our labs, go to http://home.gg.uwyo.edu and click on "Facilities." The Brinkerhoff Earth Resources Information Center, a university library dedicated to geosciences, is also located in the geology building.

Course work

The Department of Geology and Geophysics has flexible course requirements, allowing students and advisors to design a course plan that meets a student's needs. A broad spectrum of courses and seminars are offered regularly on both geologic and geophysical topics including Reflection Seismology, Inverse Theory, Plate Tectonics, Digital Filtering, Hot Spots, just to name a few. A slew of courses in sequence stratigraphy, geochemisty and other fields are also available. A complete course listing as well as course requirements for graduate students can be found on our web site, http://home.gg.uwyo.edu by clicking on "Academics."

Industry Connections

The Department of Geology and Geophysics also maintains close ties with the petroleum industry and environmental industry. Each fall, recruiters from oil companies visit our department, and interview students for internships

(Continued on page 6)

Check it out:
http://home.gg.uwyo.edu

Spotlight Section: SAGE 2001

SAGE 2001 PROGRAM INVITES STUDENT APPLICATIONS

SAGE (Summer of Applied Geophysical Experience), a unique blend of hands-on, modern geophysics education in a field environment, is planning their 19th year of operation in Northern New Mexico. Students from the geosciences and related fields are encouraged to join the SAGE faculty and industrial affiliates for a true immersion in geophysics this summer.

The National Science Foundation (NSF) will again fund about 15 Research Experiences for Undergraduate (REU) students at SAGE 2001. All expenses including travel will be covered. A small stipend will also be provided to each REU student. The term "undergraduate" includes students who are currently enrolled as undergraduates and those who received their undergraduate degrees within the past year and have not been attending a graduate program. REU students must be U.S. citizens or permanent residents of the U. S. or its possessions. Foreign undergraduates and graduate students are not eligible for the NSF REU support but they are encouraged to apply for the SAGE core program.

The SAGE 2001 program will be held in Santa Fe, New Mexico where participants will stay at the College of Santa Fe. The program for REU students will begin at 10:00 am on Monday, June 18 so most REU students will arrive on Sunday, June 17. Other students attending SAGE (e.g., graduate students, foreign students, and professionals) will arrive on Wednesday, June 20 for the SAGE core program that begins at 9:00 am on Thursday, June 21. The core program will end in the late afternoon on Thursday, July 12.

SAGE 2001 for REU students will end in the early afternoon on Friday, July 13.

A total of approximately 25-30 SAGE 2001 students will be accepted. SAGE 2001 application and reference forms are available on the SAGE web page listed below. The application deadline for all participants is April 1, 2001.

Updated information on SAGE 2001 and answers to most questions about the SAGE can be found on the SAGE Web page:

http://geont1.lanl.gov/SAGE/sage.htm

Application and reference forms are also available from most university geoscience departments. Applicants may call or e-mail the Los Alamos National Laboratory, Institute of Geophysics and Planetary Physics (IGPP) office at (505) 667-0920, srr@kokopelli.lanl.gov regarding any questions. A current overview of the SAGE program can be found in the September 2000, vol. 19, no. 9, issue of the SEG's *The Leading Edge*, pages 986-990.

(Continued from page 5)

and full-time jobs. This is an excellent opportunity to meet industry contacts and be exposed to industry technology. Seismic processing companies also visit the University of Wyoming campus each year.

Living in Laramie, Wyoming

All of the exciting academic opportunities aside, there are other fringe benefits to living in Laramie. Outdoor activities abound. World-class cross-country skiing in the Laramie Mountains is only a ten-minute drive from town. Downhill skiing is also very close; a small local ski resort sits 30 miles west of Laramie in the Snowy Mountains, and big Rocky Mountain resorts such as Steamboat Springs and all of the Summit Country resorts are only a 2-3 hour drive from Laramie. Snowshoeing is also a popular local sport. In the warmer months, mountain biking, rock-climbing, hiking, fly-fishing and hunting destinations sit in our backyard. Laramie has a population of 26,000 and sits at an elevation of 7,200 feet. Laramie culture is a mix between a western crossroads and a college town; we have steak houses and cowboy bars or vegetarian restaurants and coffee houses, depending on your mood. While maintaining the secluded, safe feel of a small Wyoming town, Laramie is only a 2-hour drive from Denver International Airport.

2000 AAPG/SEG Student Expo

The AAPG/SEG Second Annual Student Expo was the best ever. Students and company sponsors both agreed that this year was above and beyond what was expected! The Expo is designed to benefit geoscience students interested in pursuing a career in the petroleum industry. This three-day event recruits big-name sponsorship to fund and to set up booths and interview prospective employees.

Kickoff speakers included Dale Sawyer, Rice University Department of Geology and Geophysics assistant chairman; Pat Gratton, AAPG Visiting Geologist Program Committee chairman; Craig Moore, Houston Geological Society president; Larry Bartell, Gulf Coast Association of Geological Societies 2000 Meeting general chairman; Deborah Sacrey, Gulf Coast Association of Geological Societies treasurer; Bob Shoup, AAPG Mentoring Committee vice chairman; Chuck Noll, AAPG secretary; and Rick Fritz, AAPG executive director.

Starting with the Icebreaker on Sunday, students had the opportunity to meet with their peers in a relaxed setting, featuring a Southwest buffet, drinks, and music. This year 140 students from 50 universities were in attendance. Poster set-up began at 7:00 Monday morning. Students gave poster presentation with 14 company representatives, and 59 industry guests conducting interviews of potential candidates. Workshops were held after the Expo and poster teardown. Sally Zinke, SEG President, started off the dinner/workshop on Monday evening with a brief introduction. After the dinner James White, chairman of the AAPG/SEG Student Expo handed out awards for Best Poster. The prizes consisted of cash and AAPG/SEG vouchers to be remitted at the appropriate bookstore (AAPG or SEG).

First Place, Nate Kaleta, Penn State University
Second Place, Catherine Snelson, University of Texas, El Paso
Third Place, William Tedesco, University of Mississippi

The workshops brought in over 70 students compared to last year's 20. Last (day) but not least, students signed-up for tours to Core Lab & Veritas.

Theodore Stieglitz, Rice University graduate student commented, "***I found the AAPG/SEG Student Expo to be an excellent opportunity for me to network for future employment. There was solid representation from all corners of the petroleum industry from major and independent oil and gas companies to contractors.***"

Student Expo Sponsors provided a total of $10,000. Companies who participated this year include: ExxonMobil, Kerr-McGee, Anadarko, bp, Petroleum Geo-Services, Marathon, Apache, Phillips Petroleum, Veritas, Dan Smith, Energy Careers, Just Geo, Seneca, and Fairfield Industries.

SEG Student Newsletter
P.O. Box 702740
Tulsa, OK 74170-2740

The Anomaly

Interested in starting an SEG Student Section at YOUR school?

You just need 10 members to become an official SEG Student Section! Log on to the student webpage at:

http://students.seg.org

Here you'll find everything you need, from guidelines and requirements to an example Student Section Constitution.

Don't miss out on the many benefits the SEG offers Student Sections… create yours today!