

# The Petroleum Geoscience Vision of the University of Calgary

Helen Isaac

University of Calgary, Calgary, Canada

In December 2005, Larry Lines (Head of the Geology and Geophysics department at the University of Calgary) and Ron Burke (Director of Development in the Faculty of Science, UofC) met some CSEG representatives to present the department's new Petroleum Geoscience Vision. In attendance for the CSEG were Oliver Kuhn (VP), Rob Vestrum (Director of Educational Services), Helen Isaac (RECORDER/Outreach) and Jim Racette (Managing Director). The Vision is the outcome of a major external review in 2005 and over 100 discussions with industry and alumni in the last two years.

The department of Geology & Geophysics at the University of Calgary (G&G) is the largest geoscience department in Canada and currently has 435 undergraduate and graduate students, which is 15% of the Canadian total. It is the largest source of new petroleum geoscientists and all its graduate students have obtained jobs. The only program in Canada to offer a B.Sc. in Petroleum Geology was launched in September, 2005.

The Vision of G&G is to become "Canada's top petroleum geoscience program and top-tier globally", encompassing the following objectives:

- to offer Canada's best teaching and research in petroleum geoscience in Canada's energy capital
- enhance Canadian petroleum exploration and production
- produce the most highly qualified and sought-after graduates
- be the program of choice for high-calibre scholars
- increase student and staff/faculty numbers by 40% while improving the quality of education
- integrate the geoscience community into the program plans and developments.

The benefits of this enhanced geoscience program will be to

- strengthen Canada's capacity to compete and thrive in the global market
- enhance the sustainable success of Alberta's energy sector
- offer improved educational opportunities for students to gain employment in the energy industry
- produce graduates who are highly qualified for attractive career opportunities
- help address the critical need of the energy sector for highly qualified personnel
- provide the next generation of leaders and innovators in the energy industry
- help diversify the energy sector and the Alberta economy through expertise in unconventional resources, such as heavy oil, coal bed methane and shale gas
- mitigate the environmental impact of energy activity.

This Vision is based on three key themes that emerged from the external review and discussions:

- a commitment to a soft rock focus, with 70-80% of programs related to petroleum geoscience
- providing specialized programs for those students who want to prepare for careers in industry (but based on strong fundamentals of geoscience), e.g. the new B.Sc. in Petroleum Geology (a specialization within the Geology major program) and M.Sc. in Reservoir Characterization (a collaboration between Geology, Geophysics and Petroleum Engineering)
- developing more interaction with industry, alumni and professional societies to share information and build relationships in anticipation of seeking opportunities for collaboration (including funding support).

Some of the requirements for achieving this vision are new faculty positions, extra support staff, scholarships and bursaries, new equipment, expanded field schools, additional space and funding for outreach and recruitment. New chairs are planned in oilsands reservoir geoscience, exploration geology, unconventional resources and possibly sequence stratigraphy, applied sedimentology, petrophysics, advanced technologies or water resources for oilsands exploration.

After the presentation of the Vision, there was a discussion between the people present. In the following review the views expressed by "CSEG" are those of Oliver, Rob, Helen or Jim.

The geophysics program at the UofC has grown notably in the last decade. The initial strength was developed within the graduate program and now the undergraduate program has to develop. The CSEG opined that the geophysics undergraduate program could use more fundamentals in mathematics and physics. It is already industry-oriented, with good results, but does not need to go further, i.e. any shift in focus or emphasis should be back towards the theory of geophysics. G&G stated that the feedback received about the geophysics program seems to fall generally into two camps. The service companies like students to have a strong theoretical focus in their university courses, while the oil companies like to see more emphasis on seismic data interpretation or petroleum exploration. Maybe they should offer an option of two different streams within the department so that students could choose a specialization?

CSEG questioned whether the university should be training students for jobs in industry or giving them the basic education they need. CSEG would like to see students well-grounded in the basics. The danger of a program that is too applied is that students leave university only knowing applications and are unable to make decisions on matters such as migration algorithms because they don't know the theory.

*Continued on Page 51*

## Grapevine

*Continued from Page 50*

based in Calgary, Alberta and its division, Capital Archives, based in Edmonton, Alberta. This major announcement gives RECALL a solid footprint to expand its document management and data protection services into Western Canada.

"We are very excited about the opportunities that this acquisition presents," says Russell Skinner, VP of Business Integration for RECALL. "Kestrel has a proven history of success in records and information management in the Alberta market. We are extremely impressed with the quality of their operation, and are looking forward to being able to offer our clients a wider expansion of services in addition to our secure destruction services."

"Our sale to RECALL is a natural progression of our corporate objectives to increase our scope of products and services, and to expand outside of the Calgary market," says Kestrel President Peter McCann. "RECALL not only allows us to offer secure destruction services to our current clients, but gives us the opportunity to service clients on a national basis. We are extremely excited to be joining forces with a global leader in document management, and look forward to leveraging RECALL's expertise and resources to continue our tradition of service excellence."

Recall Corporation is a leading provider of world-class information management solutions, addressing the need for outsourcing the management, storage and retrieval of business information. For additional information on Recall, please visit the website at [www.recall.com](http://www.recall.com). Recall is a wholly owned division of Brambles.



## The Petroleum Geoscience Vision of...

*Continued from Page 40*


G&G reported that the external reviewers said that a strong fundamental undergraduate program is needed to prepare graduates not only for industry but also for graduate studies, especially at other universities and in other related fields, such as oceanography. To encourage the best students to attend the University of Calgary the number of awards for undergraduates in the geosciences should be raised from 43 to 200. The second year is especially tough financially and many students work part-time.

CSEG asked why all this growth is planned and G&G responded that there is a huge demand and all demographic studies of the petroleum industry show a shortage of young people. CSEG agreed that companies find it hard to get Canadian graduate students.

G&G asked CSEG if there were to be two areas of geophysics in which it should specialize, what should they be? This was hard to answer. CSEG likes Gary Margrave's work and said that it would be useful for companies involved in data processing and development of processing algorithms to have students with a mathematical background. Also, it is important for students to understand uncertainty and error analysis.

G&G agreed that strengthening the undergraduate program merits further attention so that UofC BSc geophysics graduates would become the top applicants to the MSc geophysics program.

Any growth in enrolment in G&G must be based on maintaining or enhancing the quality of education.

Overall the CSEG liked the new vision, especially the heightened emphasis on external consultation with industry, alumni and professional organizations. It suggested that G&G offers a risk assessment course and/or incorporating seismic data interpretation into the current hydrocarbon play assessment course. 

## Junior Geophysicists Forum (formerly Young Geophysicists Forum)

We have a new name! We have changed the name of the Young Geophysicists Forum to the Junior Geophysicists Forum. The purpose of the forum is for students and junior geophysicists to network with established geophysicists within the geophysical community. The next JGF will be held Wednesday, May 10th. This will enable students and juniors to make valuable contacts before the 2006 CSEG/CSPG/CWLS Joint convention. Stay tuned to the CSEG website ([www.cseg.ca](http://www.cseg.ca)) and the RECORDER for more details. You can contact the JGF committee at [jgf@cseg.ca](mailto:jgf@cseg.ca).

## VGS Database International Inc.

VGS Database International is pleased to announce the recent acquisition of Intercontinental Seismic Surveys Ltd. ("ISS"), and has renamed the company to VGS Services, a Division of VGS Database International Inc. VGS Services will continue to offer seismic support and services as previously provided by ISS. Personnel include Mary Condit, Diane Dawson, Bernie Delorme, Carole Joudrey, Wendy Landsiedel, and Hiley Thompson. VGS Services office has been relocated to Suite 1420, 840 – 7th Avenue SW, Calgary, Alberta, T2P 3W2. The phone and fax numbers remain the same at phone (403) 233-8262 fax (403) 233-7290. 