



# Annual Report

---

2013

---

SOCIETY OF EXPLORATION GEOPHYSICISTS

THE INTERNATIONAL SOCIETY OF APPLIED GEOPHYSICS

# 2013 ANNUAL REPORT OF THE SOCIETY OF EXPLORATION GEOPHYSICISTS

## REPORTS OF THE OFFICERS

3	President.....	David Monk
4	President-elect.....	Don Steeples
4	First vice president.....	Rick Miller
4	Second vice president.....	Dennis Cooke
5	Past president.....	Bob A. Hardage
6	Treasurer.....	Gary Servos
6	Director at large.....	Samir Abdelmoaty
6	Director at large.....	Peter Annan
7	Director at large.....	Elsa J. Jaimes
7	Director at large.....	Chris Krohn
8	Director at large.....	Alfred L. Liaw
8	Director at large.....	Edith Miller
9	Editor.....	Tamas Nemeth

## REPORTS OF THE STANDING COMMITTEE CHAIRS

13	AAPG-SEG Cooperation.....	William N. (Bill) Barkhouse
13	Advisory.....	Klaas Koster
13	AGU-SEG Collaboration.....	Remke Van Dam
14	Annual Meeting Exhibitors.....	Matthew Padon
14	Annual Meeting Steering.....	Lee Bell
15	Annual Meeting Technical Program.....	James S. Schuelke
15	Audit.....	Peter Annan
16	Bylaws.....	Louise Pellerin
16	Committee on University and Student Programs.....	Aaron Girard
17	Continuing Education.....	Deyan Draganov
17	Development and Production.....	Martin Terrell
18	DISC 2013.....	Baishali Roy
18	Distinguished Lecture.....	Susan Webb
19	Finance.....	Nancy J. House
21	Global Affairs.....	Jill Lewis
21	Gravity and Magnetism.....	Tim Grow
21	Historical Preservation.....	Bob Wyckoff
22	Honors and Awards.....	Fred Aminzadeh
23	Inter-Society Relations.....	Brad Birkelo
23	INTERPRETATION Editorial Board .....	Yonghe Sun
25	IQ Earth.....	Rocco Detomo
26	SEG-ISEF Subcommittee.....	Richard Nolen-Hoeksema
27	Meetings Review and Planning.....	Mark Houston
27	Membership.....	Wafik B. Beydoun
28	Mining and Geothermal.....	Mark Shore

## REPORTS OF THE STANDING COMMITTEE CHAIRS

28	Nominations.....	Peter Annan
29	Oil and Gas Reserves.....	Pierre-Louis Pichon
30	Online Technical Content Board.....	Kris Innanen
30	SEG Online.....	Matt Hall
31	Publications Policy.....	Kees Wapenaar
31	Publications.....	Vladimir Grechka
32	SEG Research.....	Cengiz Esmer soy
32	Reviews.....	David C. Bartel
33	SEG-EEGS Collaboration.....	Rick Miller
33	SEG-SPE Collaboration.....	Brad Birkelo
33	Technical Standards.....	Rune Hagelund
34	Tellers.....	Kim Guyer
34	<i>The Leading Edge</i> Editorial Board.....	Bill Goodway
35	Translations.....	Long Jin
35	SEG Women's Network.....	Nancy House
36	Youth Education.....	Gary Robinson

## REPORTS OF THE REPRESENTATIVES

37	AGI Environmental Geoscience Advisory.....	Azra Tutuncu
37	American Geosciences Institute (AGI).....	Louise Pellerin
38	Arctic Technology Conference.....	Bill Goodway
39	IPTC Management.....	Joseph Reilly, Philippe Doyen
40	Joint Committee On Reserves Evaluator Training.....	Fred Aminzadeh, Andy Clifford, Don Caldwell
40	NAPE Advisory.....	Allen Gilmer
41	OTC Board of Directors.....	Wafik B. Beydoun
43	OTC Technical Program.....	Charles Knobloch

## SEG FOUNDATION

45	Foundation Board of Directors.....	Tom Smith
----	------------------------------------	-----------

## SEG SUBSIDIARIES

47	SEAM.....	Manik Talwani
48	SEG Global, Inc. ....	Ricardo Rosa Fernandez
48	SEG Real Estate Corporation.....	Bob Wyckoff

## FINANCIAL STATEMENTS

51	SEG Consolidated Financial Statements
67	SEG Foundation Financial Statements

# REPORTS OF THE OFFICERS

## David Monk, president

**M**y term as president has been short. With the Annual Meeting of 2012 being in November and the 2013 meeting being in September, I have found myself as president for only nine months. Much shorter than my predecessor, Bob Hardage, who passed on to me a Society with new bylaws, and a reinvigorated Council as well as a Board of Directors much bigger than the previous Executive Committees. Bob continued to serve on the Board, as past president, and I have been glad of his advice and guidance during the year.

This has been a year of adapting to these changes and facing challenges that we have not faced before. I believe the Society has fared well, although it has become clear that many of the major changes under way will take longer to implement than the term of a single president. I came into the year with the objective of increasing the diversity of a society which is becoming increasingly more diverse! Nearly 65% of our members now live and work outside North America, and this trend is continuing. The Society is changing, and we need to change with it.

Foremost among the changes yet to be implemented is a proposal which I hope will be presented at the Council meeting in Houston, which addresses the barriers to becoming an Active member. When the Society started more than 80 years ago, I have no doubt that the checks and balances needed to ensure that applicants for membership were indeed geophysicists were a necessity. Three references and eight years of experience ensured that someone was qualified. Today, it's possible to examine almost any aspect of someone's background in geophysics almost instantly on the Web, and the necessities of old have become the burdens of today. We need to remove the barriers to Active membership and open the Society to anyone who actively practices geophysics. I hope the Council has an opportunity to pass the resolution and the many practicing geophysicists who simply want to participate and benefit from what the Society can offer will be able to join without the current hurdles.

Looking forward, it would appear that the Annual Meeting in Houston, which will mark the end of my term, will be one of the largest SEG meetings. It will certainly be the largest technical program that we have ever attempted, in part because of the introduction of new electronic presentations called e-Posters. These were an experiment in 2012 and this year offer the author the opportunity to deliver a presentation in a format similar to an oral presentation (PowerPoint), but to a small audience, and interact more directly (almost like a mini-workshop). Addition-

ally, and for the first time, unassigned e-Poster stations will then allow attendees to view the presentations at a different time if they were not able to attend the one-on-one session. This is one of the first steps to a truly electronic meeting where all presentations will be streamed live and can be watched from anywhere, by anyone registered.

The SEG Annual Meeting is not the only large meeting that SEG has a hand in each year, but the others are often partnerships with sister organizations. SEG partners with SPE, AAPG, and EAGE to operate IPTC, which this year was held in Beijing. This was a successful event and gave me the opportunity to meet with some of our many members and section representatives in China, as well as get a better understanding about our regional office in Beijing. Gary Liu and his staff are doing an excellent job of developing SEG in China, and our membership there is growing as a result of the services we are able to provide. This year I should make particular mention of Board member Alfred Liaw, who conducted a special lecture tour on behalf of SEG and will have visited all student sections in China by the time it is completed. Events such as IPTC, OTC, NAPE and other conventions operated jointly by SEG and sister societies are important to the Society, and this year we have continued to improve our cooperation with other groups. We completed the execution of an MOU with EAGE which will lead to a series of joint workshops conducted by the societies. The first will be held in November in Portugal. We have continued to discuss several opportunities to work more closely with other societies and have signed an MOU with CSEG, which will hopefully lead us to closer cooperation. As I mentioned at the beginning of this report, some things take longer than the tenure of a single president, and at the time of writing, I am hopeful that we will be able to announce a more substantive merger of societies at the Annual Meeting, which has been in negotiation throughout my tenure.

As the Society has become more global, the demands of international travel have grown on both staff and volunteers. One of the most important legacy actions from the 2012 Executive Committee was that SEG should implement a travel safety policy. This year, Honorary and Distinguished Lecturers gave 106 presentations, including many at universities, and drew attendees from around the world. With volunteers traveling to nearly every part of the world, it is critical that SEG is able to ensure their safety in case of emergency. I am pleased to report that SEG has partnered with FrontierMEDEX to provide 24/7 emergency medical and travel assistance services for volunteers and employees traveling outside their home country. The program

also provides emergency security assistance services. Having the services in place provides the base to further develop SEG's International Travel Policy and Procedures and ensure that our staff and volunteers travel safely and are insured.

While the Society continues to spread across the world, our head office has remained in Tulsa. Another critical action during the year was to establish a new subsidiary corporation, SEG Real Estate, which will be responsible for the management and running of the SEG business office building in Tulsa. However, the main reason for establishing this entity was to examine the potential for SEG to diversify its revenue source, by becoming a larger property owner. The Society already owns the office and campus in Tulsa, and the property has plenty of space for construction of another grade "A" office building. At the time of writing, the Board of Directors has approved expenditure toward construction of a new facility. Tulsa is a ready market for commercial real estate, and the intent is that SEG will move its staff into a new building when constructed, and lease the remaining space, as well as the space vacated in the existing building. Planning permission and permits have been obtained, and final tenders for construction are currently being received. I hope to be able to lay a cornerstone to this building while still president of the Society.

While the presidential term has been short, it is important to look forward and plan strategically for the future of the Society. In the early part of the year, the Board met specifically to look at long-term objectives and the vision of what the Society should look like in the future. This strategic planning exercise has been conducted previously, but as the world changes we need to make sure that the vision is still relevant. A Strategic Planning Task Force was established, and I believe that this will set a path that those who come after me will be able to use to guide them into the future.

The new governance model that was introduced at the beginning of my term saw an expanded Board of Directors, members of which will serve longer terms than members of previous Executive Committees; many will remain on the Board next year. I was privileged to work with some of the most passionate, gifted, and involved members of the Society. They have served the Society well, and I described their qualifications and diversity in a *TLE* article published early in my term. I will hand over the presidency to Don Steeples in September, and I have over my term come to appreciate the skills and dedication that he will bring to the Society. I am confident that SEG is in good hands.

### **Don Steeples, president-elect**

---

The governing body of SEG changed when the 2012–2013 Board of Directors took office in November 2012. The elected leadership team is nearly twice as large as the previous Executive Committee was because of the addition of new directors and a chair of the Council. At the time of writing, the elections for the new Board of Directors have not been completed, so I do not know with whom I will be working next year, but

the continuity of several holdover members of this year's Board will allow us to continue SEG programmatic activities without interruption.

This year, I've had an opportunity to observe the running of the SEG Foundation and SEAM Corporation as well as SEG Global, Inc., which helps oversee offices in China and in Dubai. The new SEG Real Estate Corporation is overseeing the current office building in Tulsa and is in the latter stages of planning for an expansion of office space in Tulsa.

I was able to represent SEG at several venues and functions, including the AAPG convention in Pittsburgh. Our cooperation and collaboration with AAPG has increased, including partnering in the new *INTERPRETATION* journal.

One of my goals as SEG President next year is to ensure that we develop a registry of volunteers so that our committees and other activities can include a wider geographic and geoscientific range of SEG members.

### **Rick Miller, first vice president**

---

Serving SEG across the historical governance crevasse has been a positive and for the most part surprisingly painless experience. The segue from the old seven-member Executive Committee to a new 14-member Board of Directors has been relatively smooth, with SEG staff adapting well to the increased number of voices at the table and requests for programmatic enhancements. Clearly, representation of the membership and direct involvement of the Council has increased, not to mention the enrichment of member services that is possible only through diversity of options and styles within the leadership.

As first vice president on the 2012–2013 Board, I had the privilege of serving this year as part of a leadership team that promoted international growth, enhanced cooperation throughout the geoscience and engineering communities, and is reaching out to underserved members of our profession with growth and collaboration opportunities. Being the largest international society of applied geophysicists, and now with a more diverse leadership, SEG can offer communities of applied geoscientists and engineers benefits of its resources, such as connecting with like-minded but diverse professionals. And finally I, personally, am glad to be given the chance, as someone with a relatively short track record in our industry and in our Society, to fruitfully work with a group of such respected, experienced, and pleasant fellow Board members.

### **Dennis Cooke, second vice president**

---

It has been an honor to serve over the past year as second vice president. In that capacity, I am the liaison between the SEG Board of Directors and a number of SEG committees. One of the strengths of SEG comes from its volunteers, and I would like to acknowledge and thank all of them.

Over the past year, the SEG Board has dealt with a few items that are not business as usual, and I would like to highlight those items here.

Gary Servos and the SEG Real Estate Corporation have defined and brought to the SEG Board of Directors an opportunity to build a second office building on SEG's property in Tulsa. More details about this investment can be found in the SEG Real Estate Corporation's report, but I want to highlight that the SEG Board has had numerous discussions and reviews on this important investment and the Board unanimously agrees to proceed.

An item of much concern to the SEG Board is the recent and significantly larger than normal nonrenewal among our Associate members. This loss of members is large enough to impact our operating budget. This is an evolving item, and the Board is reacting with the reactive and proactive actions items described below.

A reactive item: SEG Board did not approve the budget brought to it for approval because that first-pass budget included a moderate deficit. While SEG's cash reserves are sufficiently large to fund this level of deficit spending for a few years, the Board was uncomfortable with projected (or suspected) future trends of income and spending. This view was accentuated by the above-mentioned loss of Associate members and associated dues income. As I write this report, the second-pass, and balanced, budget is being brought to the Board for approval.

A proactive item: President Monk has asked Chris Krohn, Peter Annan (both are SEG Board members) and me to update SEG's strategic plan. Our planning group is focused on understanding and correcting the above-mentioned Associate member-retention problem, and a similar anticipated member-retention problem driven by the large percentage of working geoscientists in the 55+ age group that are likely to retire (from work and SEG) in the next few years. Our efforts are still in progress and will need to be reviewed and endorsed by the entire SEG Board, but our preliminary position is that:

- We are at risk of losing members because of age demographics. We do not yet understand the impact of this in terms of member numbers or dues income.
- These retiring geophysicists will open up job opportunities for younger geophysicists. This corresponds to membership opportunities for SEG.
- SEG needs to do a better job of providing "value for membership" to early-career geophysicists. We can do this with more basic- and mid-level training courses.
- SEG needs to use its Web site to connect to and engage members, especially volunteers, of all ages.
- SEG needs to improve its financial and accounting practices so that we can monitor and quickly understand which programs are working and to correct those that are not.

I will return next year as the first vice president and am looking forward to the challenge!

### **Bob A. Hardage, past president**

This past year, I had the honor of being the first past president in SEG's new Board of Directors governance structure. As I now step away from presidential service, my observation is that SEG's new governance principle, in which most Board members serve three-year terms, is a wiser and more logical governance concept than our previous model where most members of the Executive Committee served only one year. Certainly, our new terms are more beneficial and more useful for those who will be future presidents-elect.

This latter conclusion was enforced in my mind by the weekly conference calls the president, president-elect, and past president had with Executive Director Steven Davis throughout the past year. It was encouraging to discover how similarly the three of us currently in SEG presidential offices thought about almost every issue that was discussed in these weekly conferences. When such unity of thought and purpose spans a three-year period of presidential experience and is re-enforced on a weekly basis, long-term SEG programs and initiatives should rarely languish or become derailed. Some people used the term "the three Ps" to refer to our group of three and our weekly communications. That terminology should probably be adjusted to the three peas because we came to be like the proverbial peas in a pod in our consensus on issues. My hope is that this three-year period in which all future presidents-elect go through a year of training, followed by a year of action, and then by a year of counseling and advising those who follow them, will ensure continuity of thought and purpose at the SEG presidential level.

I liaised with five committees during the year: Advisory, By-laws, Tellers, Historical Preservation, and IQ Earth. Reports from the chairs of these committees appear elsewhere in this Annual Report. These chairs and their committee members were invaluable for maintaining SEG services and organizational structure. They deserve recognition and thanks from our full membership for their society service.

I also liaised with SEG representatives that served on five joint-society committees: International Petroleum Technology Conference (IPTC), North American Prospect Expo (NAPE), Offshore Technology Conference (OTC) Board of Directors, OTC Program Committee, and Joint Committee on Reserves Evaluator Training (JCRET). The people who represented SEG on these joint-society committees played major roles in creating and organizing meetings where valuable technology was shared among SEG and sister societies, and also generated significant income for SEG through the revenues generated by these meetings. I thank all of those who served on these joint-society boards and committees for their dedication to SEG, their efforts to spread applications of applied geophysics, and the significant revenue their work brought to SEG.

## **Gary Servos, treasurer**

---

How many of you noticed that the term secretary is no longer in the title? This of course is the first year for the new Board of Directors and my title is solely treasurer. Treasurer is a two-year position, so I will be writing this report again next year. I believe it was a wise decision to elect the treasurer for two years. I only now feel that I am starting to understand the overall financial aspects of our Society.

Past treasurers have shown numbers from the official audited financial reports. I cannot report any specific numbers at this point because, because of the early timing of our Annual Meeting, the audited financial report will not be completed until after the meeting. The Audit Committee, staff, and Council representatives have worked out a procedure whereby the Council will approve the complete final annual report when it is available. Please keep in mind that this is caused by the early date of the Annual Meeting and will not be the process in most years.

Several significant items have occurred in the past eight months. First, an in-depth evaluation of the accounting operations had been previously conducted by the Grant Thornton firm which suggested several areas where adjustments could improve the overall efficiencies of the Accounting Department. Some ideas are already starting to show improvements, such as reduced time to close the monthly books and report to the Finance Committee (and then on to the Board). A streamlined budgeting process was initiated and used for the 2013–2014 budget. This process will continue to be tweaked and improved. Business office staff are also getting close to being able to provide the Board and senior staff with a variety of reports on a timely basis when requested. These may not seem like major efforts, but they are.

The hiring of Dana Falletti as director of finance earlier this year appears to have been an outstanding decision. Dana has immersed herself into the job and has demonstrated superb accounting knowledge as well as operational skills that are already starting to show up in daily procedures and efficiencies. Expect continued improvements in these areas.

Is SEG financially sound? Yes, without question. Along with a qualified staff, your Board of Directors is blessed with an outstanding Finance Committee composed of the past three treasurers—Nancy House (chair), John Eastwood, and Anna Shaughnessy. This committee reviews all major financial matters of the Society, and its members' input and advice has been extremely important for your Board in its decision-making. My gratitude and thanks go to Nancy, John, and Anna for their time and contributions to SEG.

Let me conclude with saying that I am enjoying my term as treasurer, and I expect to be able to write a glowing and more-detailed report at the conclusion of my second year.

## **Samir Abdelmoaty, director at large**

---

I have had the pleasure to be part of this exceptional year for ISEG under the new governance; it took some time to get there but many colleagues and I are looking forward to improved services for the membership all over the world. I was fortunate to participate in the planning, execution, and implementation of the new governance and now I'm enjoying being a Board member helping to achieve the goals of SEG.

I was the liaison to SEG Global, Inc. and the Global Affairs Committee (GAC). SEG Global, Inc. has had another wonderful year; activities in both China and the Middle East have increased significantly to meet the growing membership expectations in those two regions. Membership in the Middle East has increased by almost one-third, and the region now includes a large number of student sections. The China and Middle East advisory committees have worked closely with SEG Global, Inc. Board and SEG staff to develop an outstanding program tailored to specific issues related to these regions. For details, please see the SEG Global, Inc. report by Ricardo Fernandes.

Both SEG Global, Inc. and the GAC are working with the business office to assess how best to serve members in Africa, Eurasia, Latin America, and Southeast Asia. In addition, the teams are working with members from Latin America who have formed an advisory committee to look for opportunities, to assess the demand of the membership, and to formulate a regional plan.

In addition to these challenges and achievements, the GAC is looking for ways to better engage global members at the SEG Annual Meeting, not only in the global special session but in another forum that will be available to all attendees.

Thank you for giving me the opportunity to serve on the new SEG Board and be part of this great success.

## **Peter Annan, director at large**

---

Director at large is a new SEG role resulting from the governance overhaul and bylaw changes carried out in the last 2–3 years. Historically, the members elected the SEG Executive Committee which acted in the dual role of Board of Directors and also as officers of the SEG Corporation. The director-at-large role provides the Board of Directors with a group of “independent” directors who are not officers of the corporation; having independent directors is important in modern corporate governance and provides a resource that can be tapped when officers might be perceived to be conflicted and as nonindependent.

This is all new to SEG, and we are all finding our way forward. Because I have had a good deal of board experience, it has been an interesting time to see the Board take shape. Certainly we have a lot to learn to make more effective use of our Board,

but substantive progress has been made and, although probably uninteresting to most SEG members, our governance process is changing for the better.

Personally, I have been deeply immersed in SEG activities this year, much more so than I had anticipated when I agreed to run for the position. It seems that not a day goes by when there is not some demand on my time for SEG activity. Chairing the Committee on Nominations and initiating and chairing the first board-driven Audit Committee involved many challenges in both learning the details of how SEG really works and understanding the relationships among the various SEG corporate entities of which there are now four and likely to be a fifth soon.

On top of this I have been heavily engaged in the NSGS-EEGS merger discussions as a member of the Near-Surface Merger Task Force and in SEG strategic planning as a member of a special task force established by Dave Monk to pull our thoughts together in a coherent framework. Both activities will have a profound influence on the SEG of the future, and it has been both a privilege and a great opportunity to share my experiences and ideas.

One of the best parts of this year has been the opportunity to work with and get to know SEG staff better. We have a great team of people who are dedicated to advancing SEG. In my committee chair roles, two people have been absolutely indispensable in meeting my commitments, namely, Mandi Duckworth (who seems to be on top of all the things the Board needs to know), and Dana Falletti, our new finance director, who arrived in February. She really has a handle on our financial issues, enabling the Audit Committee to function effectively.

Finally, I have had the pleasure of working with a great group of SEG volunteers who form the current Board. All bring differing and interesting perspectives on what it means to be an applied geophysicist and SEG member. All are passionate about making SEG a great professional home for our members.

### **Elsa J. Jaimes, director at large**

---

Throughout these last 10 months, I have been honored to be an SEG director at large. I truly value this opportunity, because it allowed me to appreciate, even further, SEG's activity and the relevance of being "the international society of applied geophysics" for students and junior and senior professionals. Although I knew about the amount of work behind this great Society, I was impressed by the excellent organization behind it.

Part of my goal as a member of the Board of Directors is to promote activities regarding the Society in Latin America and the search for effective alternatives to carry the benefits to the members in the region. To see how SEG activity in Latin America has grown steadily is worth highlighting. During this term, I attended the first Latin American Geosciences Student Conference in Medellín, Colombia, where SEG made its presence known through several programs and activities. I am current-

ly working, with the committed and dedicated staff at SEG in conjunction with the Latin American Advisory Committee, to establish an agenda for future workshops and forums focused on professionals and students, which shall be organized in cooperation with local sections and associated societies. The venue will alternate each year among the different countries in Latin America. Strengthening such events will allow us, as regional members, to be an active part of the SEG experience.

Much activity that SEG sponsors is accomplished through the committees which are core pieces of SEG's engine. The dedication and commitment of the committee members is remarkable. I had the privilege to be the Board liaison to the Youth Education Committee (YEC) and its International Science and Engineering Fair Subcommittee, and the Women's Network Committee. These committees prepared their own reports, and I encourage everyone to read them to get a flavor of the activities currently under way. The Youth Education Committee keeps on developing activities to carry geophysics to elementary and secondary school students and teachers. I am personally committed to help expand YEC initiatives in Latin America through activities organized with local associations. The Women's Network Committee (WNC) was active in several aspects to promote female engagement in SEG activities through nominations for awards and for candidates to the Board of Directors. The WNC also generated the dual-career survey to compile information regarding issues that affect decisions by women working in this industry.

The opportunity to be an SEG Board member has been rewarding and enriching. I acknowledge the other members of the Board and the SEG staff for this exciting time. I really appreciate having been elected by members. Pleasant experiences and fond memories of this period will remain in my memory.

### **Chris Krohn, director at large**

---

I am completing the first year of my three-year tenure as a director at large. It has been an interesting and productive experience. In my opinion, the Board works together constructively and efficiently with tremendous support from staff.

At the moment, I am working with Dennis Cooke and Peter Annan on our Strategic Plan. We are starting with modifications of the SEG mission statement. The current statement says, "Advance the science and application of geophysics." That is good, but it does not incorporate the unique benefits that give our members a compelling reason to join SEG. The benefit to geophysicists themselves is indirect. Our idea is to better reflect what membership in SEG can do for careers and for people and not be solely about the field of geophysics. We are particularly interested in how we can better meet the needs of our global members and young professionals. This is a work in progress, so stay tuned.

I have been the liaison with the Research Committee and with the newly expanded Meetings Review and Planning Committee

(MRPC) with a particular interest in workshops. There has been a proliferation of workshops and events around the world. A task force was formed last year, chaired by Bob Tatham, to make recommendations on workshop policy, including pricing, and the Board accepted several of its recommendations. The first was to expand MRPC's role for better workshop coordination and conflict prevention. The new MRPC, chaired by Mark Houston, has been busy reviewing the multitude of workshop proposals, and it is providing valuable suggestions and comments. The second recommendation, which was approved, was to price workshops at their fully burdened cost if they are sponsored by standing committees. For other workshops, a profit or market factor can be added as determined by SEG marketing staff. This policy preserves the historic workshop/forum activities of standing committees while providing flexibility for increased revenue in other areas. Some workshops have generated substantial revenue for the Society for use in other programs.

This is the first year in which members of the elected leadership do not leave office immediately after learning the ropes. I am looking forward to serving two more years on the Board. My goal is to enable SEG to become an even more vibrant and dynamic community of people, passionate about geophysics, who call SEG their professional home.

### **Alfred L. Liaw, director at large**

It has been my great honor to serve as an SEG director at large during 2012–2013. I had the pleasure to work closely with the Membership Committee. The committee saw a declining trend of the SEG membership and worked diligently to outline the following strategies in an effort to reverse the trend:

- To increase the retention rate of current professional members (strength of SEG)
- To increase the number of new members (growth of SEG)

A proposal from the committee will be (as of this writing) presented at the July SEG Board meeting to remove the barrier, in the current Active membership validation process, of requiring three references, eight years of professional work history, etc., in favor of self-certification/affirmation by the candidates who indeed qualify as Active members. As stated in the SEG Bylaws, an applicant who has been actively engaged in practicing or teaching geophysics or a related scientific field shall be eligible for admission into Active membership. The streamlined process would help boost visibility of the Society and increase Active membership. The historical statistics have revealed that the Active members have a better retention rate than other categories of SEG memberships. The purpose of this proposal is to increase the retention rate of the current professional members. After careful review by the SEG Bylaws Committee and approval by the SEG Board in July, this proposal will be put on the agenda of the Council meeting.

I have been honored to serve as the first SEG Board of Directors' Special Lecturer in 2013. Thanks to the generous support

of the SEG Foundation and Anadarko Petroleum Corporation as well as the support of the SEG China office staff, the lecture series allowed me to visit 17 SEG student chapters in China, where I delivered a two-hour presentation titled "SEG: Bridging Technology and People." In May 2013, I visited those SEG student chapters in and around Beijing and Qingdao. The chapters included China University of Geosciences (Beijing), Institute of Geology and Geophysics of the Chinese Academy of Sciences, Peking University, China University of Petroleum (Beijing), CNPC Research Institute of Petroleum Exploration and Development (RIPED), and China University of Petroleum (East China). The tour continues in October 2013 with visits to the rest of the student chapters in China. The lecture series encourages geophysics students to actively participate in SEG annual meetings, workshops, and forums. During the tour, student chapters were also inspired to organize geophysical competitions as well as student conferences among SEG student chapters in China. Energizing Student Members to self-promote regional geophysical activities with the support of SEG is another strategy to grow SEG.

### **Edith Miller, director at large**

It has been a pleasure to serve as director at large on the 2012–2013 Board of Directors, the first year of my three-year term. Was it all that I expected it to be? It sure was, and much more. I must start by saying that the Board of Directors and the committees could not be as effective as they are if it weren't for the excellent staff support that they receive. The SEG business office is filled with competent professionals, dedicated to serving our worldwide growing membership.

As a Board member, I have the opportunity to be involved in many facets of the Society, not only by fulfilling the core tasks of governance and oversight of the Society, but also serving as the liaison to a range of committees: the Continuing Education Committee (CE), DISC (Distinguished Instructor Short Course) Committee, Online Committee (OC), Online Technical Content Board (OTCB), and last but not least the Committee on University and Student Programs (CUSP).

All committees have an important task not only in thinking about this year but also preparing ahead. While it is only 2013, the DISC committee is working on all aspects involving the DISC from now out to 2016. The Continuing Education Committee is making great leaps expanding and streamlining the education curriculum, which in addition to the traditional face-to-face format includes more and more new, mostly online, formats. Speaking of which, the Online Committee nowadays is indispensable, ensuring that SEG can make the most out of the opportunities that the Internet offers, serving members worldwide in a growing number of ways. In this realm, the Online Technical Content Board ensures that the technical content that is involved in this effort is abundant, appropriate, and useful. Probably the largest user group of online content is the group represented and served by the Committee on University and Student Programs. CUSP is the great supporting and organizing power behind

SEG's student programs, such as the Student Leadership Symposium, and the Student Education Program, and the relatively new Student Chapter Excellence Program. CUSP also provides the connecting space for faculty members and industry leaders with the next generation.

I can't possibly give a worthy summary of what each of these committees have been up to this year, so please read their reports included in this SEG Annual Report!

One of my further roles on the Board has been to serve as a member of the Audit Committee, which is composed of three nonofficer Board members. The financial health of the organization, and responsible and efficient use of resources, are of fundamental importance to the overall health of SEG. The Audit Committee, led by Peter Annan, has been working hard to make sure that the proper mechanisms are in place to ensure smooth processes and a continuation of a clean audit record.

I also have had the opportunity to contribute as a member of the Women's Network Committee, in particular the committee's effort to instate a new SEG Award: the SEG Educator Award. This award will honor individuals for excellence in geophysics education. The new award fits in well with SEG's goals and is especially relevant in the current environment of crew change and increasing educational needs. The award has been approved by the Board of Directors, and the first Educator Award(s) will be given at the 2014 Annual Meeting.

### **Tamas Nemeth, editor**

This report summarizes the main developments in *GEOPHYSICS* from July 2012 through June 2013, the second and final year of the work of the current Editorial Board. Five new associate editors joined the editorial board this past year, replacing departing associate editors and meeting increased paper submissions in selected categories, such as Seismic Inversion and Borehole Geophysics. All associate editors worked hard to handle the increased number of manuscripts within the deadlines of the established peer-review process. Additionally, we added 13 special editors during the past year to ensure that every paper undergoes a rigorous final proofreading as well. The editorial board includes assistant, associate, special, SWAT, department editors, and guest editors associated with special sections. I thank them and the staff of SEG's Publications Department for making the work of the outgoing editorial board enjoyable and a resounding success.

Incoming SEG Editor Evert Slob is forming the new editorial board for the next two years. I am sure the new editorial board will build upon and exceed the work of the outgoing and previous boards and wish the new team a successful tenure.

### **Performance of the 2011–2013 *GEOPHYSICS* Editorial Board.**

The tremendous dedication of the outgoing editorial board has resulted in favorable performance numbers. Chief among them is the highest ever impact factor (1.723) that will make our journal even more attractive for manuscript submissions. Also,

best-ever performances were achieved in (a) average time required for first review (52 days); (b) the average time between acceptance and publication (78 days); (c) the highest ever number of submitted manuscripts (524); and (d) largest number of digital article downloads (close to 600,000).

**GEOPHYSICS Reviewer of the Year Award.** The *GEOPHYSICS* Editorial Board established a new award in 2012: the *GEOPHYSICS* Reviewer of the Year Award. The award honors a dedicated, constructive, and prolific reviewer and will be presented annually. The first winner of the award is Jan Thorbecke of Delft University. Jan has consistently provided high-quality reviews; he returned six recommendations in the award-consideration period with an average review time of 12 days. Any editor would love to get a high-quality review in 12 days, and consistently! Associate Editor Ian Moore stated that Jan Thorbecke was "knowledgeable about the subject matter, able to assess the paper based on its value to readers of *GEOPHYSICS*, and provided thorough, constructive reviews, often for several revisions." Congratulations Jan, for the job well done and hopefully you will maintain this pace and effort in the future.

**GEOPHYSICS Digital Access.** The number of *GEOPHYSICS* article downloads for the July 2012–June 2013 time period has reached about 600,000, in contrast with approximately 2700 individual and institutional subscribers for hard-copy journal delivery. Recognizing this shifting preference for digital delivery, a new semantic-enrichment tool is in preparation that will allow more complete knowledge discovery in the digital experience.

**Supplements and Special Sections.** In the past several years, *GEOPHYSICS* produced a number of supplements and special sections dedicated to various geophysical categories. A supplement differs from a special section mainly in the format and the number of papers. According to the adopted definition, a supplement is a separately bound collection of more than 20 papers subdivided into different sections, whereas a special section, which typically contains about 20 or fewer papers, appears in a regular issue of *GEOPHYSICS*. The special sections have proven useful in providing timely and comprehensive overviews of the state of the art of a specific geophysics subject area and fostering wider industry participation. The following is an overview of recently published and planned supplements and special sections.

The Near-Surface Electromagnetic Induction special section was proposed by Associate Editors Colin Farquharson and Mark Everett, and they were so dedicated that they volunteered to be special section editors. The special section resonated with authors, and 22 papers were published in the July–August 2012 issue of *GEOPHYSICS*. The papers provide an excellent overview of this rapidly evolving discipline with some good case studies.

The Seismic Methods in Mineral Exploration and Mine Planning special section summarizes the current status of applying seismic methods to crystalline subsurface problems. A total of 20 papers were published in the September–October 2012 issue, with many excellent case studies. The special section was

proposed by Alireza Malehmir, and Christopher Juhlin, Bernd Milkereit, Milovan Urosevic, and Gilles Bellefleur joined Malehmir and Colin Farquharson as guest editors. A paper in this special section, “3D edge detection of seismic attributes used to map potential conduits for water and methane in deep gold mines in the Witwatersrand basin, South Africa” by Musa S. D. Manzi, Raymond J. Durrheim, Kim A. A. Hein, and Nick King, won the 2012 GEOPHYSICS Best Paper Award.

The Broadband Seismology in Oil and Gas Exploration and Production special section was published in the March-April 2013 issue and edited by Johan Robertsson, Shuki Ronen, Satish Singh, and Roald van Borselen. A total of 14 excellent papers demonstrated the recent significant advances in data acquisition by filling ghost notches, recording ever lower frequencies and fuller bandwidth enabling better imaging and inversion. Especially interesting are the articles that advance the methodologies for providing low-frequency data.

The Assessing Uncertainty in Geophysical Problems special section was published in the May-June 2013 issue. Luis Tenorio, Malcolm Sambridge, Klaus Mosegaard, Aime Fournier, and Henning Omre were the guest editors. The objective was to highlight current developments in uncertainty quantification in applications related to the computation, visualization, and analysis of uncertainties. Ten interesting papers were published to cover these aspects. Hopefully, uncertainty quantification will become a more common practice in the near future.

Studies presented at the 15th International Workshop on Seismic Anisotropy last year are going to be published in the Seismic Anisotropy in Oil and Gas Exploration and Development special section in September-October 2013, and edited by Abdulfattah Aldajani, Dirk Gajewski, Andrey Bakulin, and Claudia Vanelle.

Several special sections and supplements are in preparation. The Advances in Finite-Frequency Seismic Imaging and Inversion special section is planned for May-June 2014, edited by Andreas Fichtner, Rene-Edouard Plessix, Clement Fleury, and Biondo Biondi. A 4D Time-lapse Monitoring special section is in advance preparation by David Lumley and Martin Landrø, and a potential GPR special section is being planned by Jan van der Kruk.

Up-to-date information about GEOPHYSICS supplements and special sections can be found on <http://seg.org/geophysics/specialsections>.

**Statistics.** The number of papers submitted to GEOPHYSICS has increased from 427 (1 July 2008–30 June 2009) via 411 (1 July 2009–30 June 2010), 441 (1 July 2010–30 June 2011), and 514 (1 July 2011–30 June 2012) to 524 (1 July 2012–30 June 2013). This substantial uptick is due mostly to increased international submissions and submissions based on recent SEG abstracts. Approximately 71% of the contributions last year came from non-U.S.-based authors. The broad geographical distribution of

the papers reflects the international character of SEG and GEOPHYSICS (Table 1). The contributions from oil and service companies continue to be relatively moderate at approximately 13% (Table 2), although this is up from 10% last year.

Manuscript turnaround times have been substantially reduced last year, mostly because of a vendor change and the resulting platform efficiencies. The average time required for first review is 52 days, the best ever performance (Table 3). The average time between acceptance and publication is at 78 days, also the best ever performance in this category (Table 4).

Thomson’s ISI Web of Knowledge defines the impact factor of a journal in a specific year as the number of citations in that year to articles published in the journal in two preceding years, divided by the total number of articles in those years. According to the Science Edition of Thomson Reuters’ Journal Citation Reports released in June 2013, GEOPHYSICS’ impact factor is 1.723, the highest ever in the journal’s history. GEOPHYSICS’ impact factor has increased steadily during the past several years as the journal has sharply reduced its average time from submission to publication from nearly two years to approximately 10 months. The impact factors were 1.228 in 2006, 1.167 in 2007, 1.349 in 2008, 1.662 in 2009, 1.404 in 2010 and 1.418 in 2011. Table 5 presents the impact factors for GEOPHYSICS from 1975 to 2012.

**Table 1. Origin of papers submitted for publication in GEOPHYSICS by country**

1 July 2012–30 June 2013

United States .....	151
China .....	96
Canada.....	42
Norway.....	33
United Kingdom.....	26
Australia.....	20
Germany.....	16
Brazil.....	12
India .....	12
Iran, Islamic Republic of.....	12
Saudi Arabia.....	12
Korea, Republic of .....	10
Japan .....	9
Netherlands .....	9
Czech Republic .....	8
France.....	7
Italy .....	6
Switzerland .....	6
Denmark.....	4
Sweden.....	4
Russian Federation.....	3
Argentina.....	2
Egypt.....	2
Malaysia.....	2
Mexico .....	2
Portugal .....	2
Turkey .....	2

Vietnam .....	2
Greece .....	1
Hong Kong .....	1
Ireland .....	1
New Zealand .....	1
Nigeria.....	1
Poland .....	1
Slovakia.....	1
South Africa .....	1
Spain .....	1
Sudan.....	1
Taiwan.....	1
United Arab Emirates.....	1
<b>Total.....</b>	<b>524</b>

**Table 2. Origin of papers submitted for publication in GEOPHYSICS by employer**

1 July 2012–30 June 2013

Universities .....	365
Research Institutes .....	59
Service Companies and Manufacturers .....	37
Oil Companies .....	32
Governments .....	16
Retired.....	6
Consultants.....	4
Instrument Companies .....	3
Mining Companies.....	2
<b>Total.....</b>	<b>524</b>

**Table 3. Manuscript-handling statistics**

Year submitted 1 July–30 June	Average number of days required for first review
1991–92.....	172
1992–93.....	157
1993–94.....	184
1994–95.....	182
1995–96.....	211
1996–97.....	186
1997–98.....	205
1998–99.....	214
1999–00.....	212
2000–01.....	211
2001–02.....	178
2002–03.....	133
2003–04.....	141
2004–05.....	105
2005–06.....	66
2006–07.....	53
2007–08.....	57
2008–09.....	55
2009–10.....	66
2010–11.....	61
2011–12.....	66
*2012–13.....	52

\* First reviews have not been returned for all papers.

**Table 4. Manuscript-handling statistics**

Year published 1 July–30 June	Average number of days between acceptance and publication
1991–92.....	176
1992–93.....	181
1993–94.....	178
1994–95.....	210
1995–96.....	N/A
1997–98.....	180
1998–99.....	177
1999–00.....	202
2000–01.....	208
2001–02.....	213
2002–03.....	195
2003–04.....	161
2004–05.....	158
2005–06.....	181
2006–07.....	143
2007–08.....	82
2008–09.....	111
2009–10.....	122
2010–11.....	135
2011–12.....	126
2012–13.....	78

**Table 5. Impact factor**

Year	Impact factor
1975.....	0.629
1976.....	1.095
1977.....	0.773
1978.....	0.591
1979.....	0.918
1980.....	0.895
1981.....	1.087
1982.....	1.100
1983.....	1.461
1984.....	1.193
1985.....	1.206
1986.....	0.968
1987.....	1.084
1988.....	0.931
1989.....	1.017
1990.....	0.905
1991.....	1.166
1992.....	0.697
1993.....	0.919
1994.....	0.824
1995.....	0.877
1996.....	0.867
1997.....	0.824
1998.....	0.687
1999.....	0.818
2000.....	0.861
2001.....	0.649

2002.....	0.834
*2003.....	0.589
2004.....	1.087
2005.....	1.030
2006.....	1.228
2007.....	1.167
2008.....	1.349
2009.....	1.662
2010.....	1.404
2011.....	1.418
2012.....	1.723

*\* The impact factor for 2003 is based on a single issue.  
A recalculation based on all issues in 2003 gives 0.862.*

# REPORTS OF THE STANDING COMMITTEE CHAIRS

## **AAPG–SEG Cooperation**

### **William N. (Bill) Barkhouse, chair**

2013 was the second year of the AAPG-SEG Cooperation Committee Leadership Summit. It took place during the annual spring North American Prospect Expo (NAPE) in Houston.

The 2013 meeting took a focused strategic approach, relative to Summit I (2012), in framing the question of whether there are topics or common interests that AAPG and SEG can agree upon going forward, thus resulting in rapid-action execution (less than a calendar year) and creating value to both AAPG and SEG resulting from collaboration.

- Summit II resulted in new information and understanding by leadership that AAPG and SEG share the same strategic goals, including their respective views that both organizations are global in nature, both emphasize growth strategies and business models in a global context, that the greatest value to each society is joint value creation through collaboration, and that the best success collaboration to date has been the joint AAPG-SEG Middle East office which provides a convenient template for evaluation and assessment of any current and future AAPG and SEG projects, initiatives, and activities.
- Lastly, specific areas—student activities, young professionals, publications, meetings (including regional and local meetings)—were identified as priority for evaluation and assessment in joint integrated activities going forward.

Summit II was led by committee chair and former SEG President Bill Barkhouse. Summit I (2012) was led by committee chair and former AAPG President Lee Billingsley. Summit I was a joint AAPG-SEG leadership meeting that included both executive committees, senior volunteer leaders, executive directors, and senior directors. A Summit I deliverable was the AAPG-SEG Collaborative Activity Table which is used by the executive directors for joint project implementation and execution.

## **Advisory**

### **Klaas Koster, chair**

According to the Bylaws, the Advisory Committee consists of the five most recent SEG presidents and meets at the sitting president's request to develop and deliver advice on specifically requested topics. This year's members were Klaas Koster, Larry R. Lines, Fred Aminzadeh, Leon Thomsen, and Bob Hardage. Steven H. Davis is the staff liaison.

David Monk is liaison with the Board of Directors.

No advice was requested by President David Monk.

## **AGU-SEG Collaboration**

### **Remke Van Dam, cochair**

The AGU-SEG Collaboration Committee (ASCC) was established as part of the SEG-AGU Alliance MOU signed in 2010. In that MOU, the ASCC was “charged with considering and making recommendations to the respective organizations regarding areas of cooperation, such as joint workshops or programs and continuing-education courses.” AGU and SEG provide complementary support for geophysical sciences with SEG focusing on methodology development in applied geophysics whereas AGU primarily supports geophysics as applied to broader scientific questions. ASCC identified the following areas of overlap between the two communities: active and passive seismology, gravity and magnetics, electrical and electromagnetic methods, near-surface geophysics, geothermal exploration, and basin analysis.

The ASCC meets four times per year, of which two meetings are in person at the major annual meetings of each organization. The members of the 2012–2013 ASCC are: George Tsoflias (University of Kansas), AGU cochair; Remke Van Dam (Michigan State University), SEG cochair; Ludmila Adam (University of Auckland); Rick Blakely (U.S. Geological Survey); John Bradford (Boise State University); John Hole (Virginia Tech); and Louise Pellerin (Green Engineering).

In 2011, SEG and AGU leaderships approved an MOU that provides a framework for joint meetings and workshops to be held by the two organizations. The first cooperative workshop on hydrogeophysics was held in July 2012. The second workshop, on cryosphere geophysics, was held in January 2013. We are currently working to organize a joint workshop titled “Advances in Active/Passive Full Wavefield Seismic Imaging and Monitoring Techniques,” which we hope will take place in 2014. In all these meetings, SEG has been/is the lead organizer. A future 2015 meeting should have AGU as lead organizer so as to follow the rotation mechanism in the MOU.

The committee has discussed several options for future meetings, including, agricultural geophysics, NMR, direct push technologies, visualization, multichannel GPR, and basin analysis. Another possibility for a future meeting that can have a presence of both AGU and SEG is the 2015 Pan-Pacific near-

surface geophysics meeting in Hawaii (2015). Discussion of a possible biannual spring AGU-SEG meeting has been put on hold pending results of the possible SEG-EEGS merger (EEGS has a well-established spring convention).

The ASCC has as a goal to hold joint sessions at the major annual meetings of each organization. A special session on hydrogeophysics will be held for the second time at the SEG Annual Meeting. At the 2013 AGU Fall meeting, SEG-NS Honorary Lecturer Valentina Socco will speak at the AGU Near-Surface Group luncheon. We hope that this will be the start of a permanent presence at this meeting. Also, ASCC member Ludmila Adam is convener of a session, "Geology, geophysics and flow modeling of hydrothermal alteration in geothermal and volcanic systems."

ASCC has discussed various avenues for improved collaboration in student programs of which SEG has many and AGU fewer. Student program coordinators at both organizations (Elsa Velasco at SEG and Kara Smedley at AGU) have joined us on our regular conference calls and face-to-face meetings to discuss progress in this area.

## **Annual Meeting Exhibitors**

### **Matthew Padon, chair**

The 2013 SEG Annual Meeting is shaping up to be the second-largest exhibition in SEG history. Approximately 40 companies are exhibiting for the first time. They represent a mixture of equipment and instrument manufacturers, computer equipment providers, and smaller geophysical survey companies. There will be two new additions related to the exposition this year. At the request of exhibitors, we will add exhibitor booth presentations to the mobile phone app. Also, we are working with the Society of High Performance Computing Professionals to have a High-Performance Computing Theater in the exhibition hall. This will bring some new exhibitors to SEG.

The initial numbers for Houston 2013 are 350 exhibiting companies and a total of 1380 booth spaces. Significant time has been spent contacting companies that have exhibited in the last three years but have not signed up for 2013. This has been a successful exercise. There will be enough exhibit space such that there will be no risk of selling out.

## **Annual Meeting Steering**

### **Lee Bell, chair**

The Steering Committee for the 2013 SEG Annual Meeting started work on 19 January 2012 and began to accrete members from that point on. Our first organizational meeting was with the 2012 Steering Committee in Las Vegas on 9 November. This was useful to all who attended, as the previous committee had a lot of experience and advice to communicate about their successful convention. We first met on our own on 12 March 2013 and by then the planning was well on its way. By

30 May, our theme, Expanding Geophysical Frontiers, had been selected, a budget had been finalized, the technical papers had been reviewed and selected, and the conference was taking final form. This will be the 11th time Houston has had the honor of hosting the convention.

Jim Schuelke, the Technical Program chair, and his band of intrepid reviewers evaluated 1415 abstract submissions, the second-highest number on record. This year will feature the largest technical program ever assembled, with nearly 1000 presentations. Jim's committee has been working overtime to organize the oral, poster, and electronic poster sessions. The e-Posters will be located on the level 3 foyer just outside of the oral session and poster session rooms. Twenty workshops will follow the technical sessions beginning Thursday afternoon. As usual, the Continuing Education courses will be held the Saturday and Sunday before the conference begins.

The SEG app for smartphones will be expanded to not only allow the technical papers and SEG events to be displayed but also to include exhibitor presentation schedules as well.

At least 322 company and university booths, about 40 of them new participants, will be in the exhibition hall as reported by Matthew Padon, the exhibition chair. He has worked to bring in companies that supply goods and services to the geophysical industry that don't normally exhibit at the SEG Annual Meeting.

The Sponsorship chair, Gary Crouse, has done a magnificent job in contacting companies to support some programs. By our May meeting, we had nearly met our goal of \$578,000 and expect to comfortably exceed this.

The Applied Science Program, headed by Wulf Massell, promises to be one of the best programs ever in this event. Christina Massell Symons will inspire hundreds of Houston high-school students with her presentation "The DEEPSEA CHALLENGE Expedition: Reaching for the Stars from the Bottom of the Ocean." In addition, a select group of students will be able to participate in a hands-on activity led by Rob Stewart of the University of Houston and then tour the exhibit hall to visit various companies.

The SEG Forum will be replaced this year by an Opening Ceremony and Presidential Address.

Rocky Detomo, the Global Affairs chair, has put together an international reception with an African flavor at the Student Pavilion on Tuesday afternoon. In addition, he has organized committee luncheons and a special technical session.

The Wednesday night event, chaired by the indefatigable Leon Thomsen, will be held at the House of Blues. Playing will be the Stevie Ray Vaughan performers and the Spasmatics.

The Spouse Program, chaired by Susan Bell, includes an exciting and entertaining series of events. The program consists

of an intriguing seminar schedule in the spouse suite and great entertainment from past presidents at the Spouse Program Luncheon. Two exciting optional tours are also available. One will visit the historic painted churches outside Houston. The second tour will visit the Bayou Bend Collection and Gardens and the historic River Oaks neighborhood.

Sofia Campbell, the Volunteer chair, has begun to gather the 125 volunteers for the technical sessions and other events. She is working with the Geophysical Society of Houston and the Chevron-sponsored and ExxonMobil-sponsored student programs.

The annual golf tournament will be held at Redstone Country Club, home of the Shell Open. Redstone has been the recipient of numerous awards, such as the 2013 “Golf Course of the Year” by the National Golf Course Owners Association, and 2012 “Best Overall Public Course” by Avid Golfer. The tournament, 22 September, is organized by Golf Chair Clive Hurst.

As always, this event would never happen if it weren’t for the fantastic SEG staff. The 2013 Steering Committee is ever grateful to Steve Emery, Kristi Smith, Cassidy Coleman, Amy Watson, Kristi Wann, Peggy Pryor, Cassie Turley, and Elise Cunningham.

## **Annual Meeting Technical Program**

### **James S. Schuelke, chair**

The 2013 technical program attracted 1415 submissions, the second-largest total in history. As a result, we increased both the number of oral presentation sessions and e-Poster sessions to accommodate the increase. The total number of presentations including oral, poster, and e-Poster was an all-time record of 992. The Houston venue was large enough to allow an increase in the technical program. Our rejection rate for submissions was 30%, which is typical.

In addition to the almost 1000 technical presentations, there are 20 postconvention workshops covering a wide range of topics from new research and development to interpretation methods.

The Technical Program Committee was a seasoned veteran group with more than 80% of them having performed those duties previously. The result was an efficient organizational, review, and selection process. I was pleased with the amount of coordination and sharing among the 25 topic leaders and their 882 reviewers. It is an immense task in a compressed time frame. I sincerely thank all involved and especially the SEG staff for their support and guidance.

## **Audit**

### **Peter Annan, chair**

A formal Audit Committee of the Board of Directors was formed in November 2012. The audit function had been

carried out in the past by a volunteer committee; the expansion of the Board this year led to creation of a Board committee with a defined formal charter, which requires the committee consist of three nonexecutive board members. The committee consisted of Edith Miller, Alfred Liaw, and Peter Annan; this year we focused on establishing the overall audit process workflow for the committee as related to the operational processes of SEG and the needs of the Board for decision making.

The audit process divides into two parts. The most familiar one is the finalization and approval of the financial statements for the previous fiscal year. The other part of the audit process enables the Board to have continuous insight on the direction and efficacy of operations. The former is the rear-view mirror look at finances while the latter is the look-ahead view.

The good news is that SEG is in solid financial shape. From the process side, SEG has a number of weaknesses; an extensive review was undertaken by the accounting firm Grant Thornton last year, and the findings were confirmed by the Audit Committee independently. Action is now under way to improve the process to bring SEG into alignment with the appropriate practices for a corporation of its size and complexity. The hiring of a new finance director in February 2013 was a major step along the path.

In addition to the SEG Corporation itself, the Audit Committee has had to review the status and governance of the subsidiary corporations. The SEG financial statements presented to members are consolidated financial statements which incorporate the activities of the subsidiaries (SEAM, SEG Global, Inc., and now SEG Real Estate). Because the subsidiary corporations have independent boards of directors providing fiduciary oversight, the SEG Board must clearly understand the consolidated financials as well as the individual corporate financial statements at the audit stage. (While associated, the SEG Foundation is a separate corporation which presents separate audited financial statements to the members, with fiduciary responsibility attached to the Foundation Board.) The financial activities are solid, but the processes and transparency of interactions need improvement.

Overall, the committee has had a challenging year coming to grips with all of the diversity SEG practices and then defining how to bring the SEG audit process into alignment with current corporate audit expectations. While considerable progress has been made this year, substantial work remains, and transition to the full Audit Committee function will take at least another year. The look-back audit function is in good shape. Operational processes (which include developing the culture of building annual operating plans with coupled calendarized budgeting) need to be enhanced substantially to achieve the look-ahead audit function.

## **Bylaws**

### **Louise Pellerin, chair**

After substantial Bylaws changes and activities in the past few years, this has been a quiet year for the committee. Observations of the Bylaws Committee have been provided to the Council, the Membership Committee, and the Audit Committee with respect to motions to the Board. The committee is addressing several small discrepancies in the Bylaws revision passed at the September 2011 Annual Meeting.

The Bylaws Committee reviewed the proposed Bylaws of Port Harcourt (PHC) Geophysical Society and verified there are no conflicts with the SEG Bylaws as part of PHC's application to become an SEG Section/Associated Society.

### **Committee on University and Student Programs**

#### **Aaron Girard, chair**

In 2012, the Committee on University and Student Programs (CUSP) continued its efforts in growing both committee scope and participation. The current committee has 13 students, 5 faculty, and 12 industry members. This year, CUSP focused on streamlining the products and services offered to students and young professionals while providing a connection for faculty members and industry leaders with the next generation. The committee also continued with the 2011 focus on extending the opportunities for recruitment and interconnectivity of universities to a larger spread of students worldwide.

The Student Chapter Excellence Program (SCEP) finished its first year successfully with an improvement of the impact of student chapters in the work of CUSP by giving them greater opportunity to lead student activities at their university, in their community, and in their region. Three recognition tiers have been established: Base, Ridge, and Summit. Two-hundred sixty-four student chapters were ranked as Base (213), Ridge (48), and Summit (3). The rankings of the student chapters were announced at the 2012 Annual Meeting, with the student chapters from University of Bucharest, AGH University of Science and Technology, and University of Texas–Austin achieving the Summit level. CUSP expects more applications for SCEP in 2013, with the rankings and Best Student Chapter award to be announced at the Annual Meeting.

One deciding factor in the Student Chapter program enhancement ratings is the organization of geosciences events such as the International Geosciences Student Conferences (IGSC) in their local regions. In 2012, the Third IGSC took place in Belgrade, Serbia, with 220 students from 40 different universities and 43 countries. For 2013, student geosciences conferences were planned for Medellín, Colombia; Berlin, Germany; and Lagos, Nigeria. All occurred in the spring and had a great turnout of more than 900 students. The locations for 2014 are being planned and are expected to be equally, if not more, successful. The collaboration of these student chapters to continue the IGSC

idea has been outstanding, and we look forward to the continued expansion of the program.

The sixth SEG/Chevron Student Leadership Symposium (SLS) took place at the 2012 Annual Meeting with 50 students from 22 countries. The students participated in discussions with the Executive Committee and on options to improve collaboration and communication in the SEG student community. Part of the program's redesign included Chevron volunteers leading the lectures and team-building activities as well as the presence of Best Practices Posters from 50 chapters in the SLS room and later in the Student Pavilion.

The SEG/ExxonMobil Student Education Program (SEP) continued to add success stories in 2012 with five courses taking place in four geographic regions, allowing 88 students to participate in industry-related problems. SEP had sessions in Europe (31 participants), Latin America in conjunction with the 13th International Congress of the Brazilian Geophysical Society and EXPOGEF, and the North American session in Houston during the Annual Meeting.

Challenge Bowl program continued to grow in 2012, with 10 competitions in eight countries. The diversity of the program has expanded to include more students from more nationalities and universities than ever before; we expect that trend to continue into the future. In 2013, a new system for the Challenge Bowl was implemented, which is expected to improve the way that the competitions run, and minimizing many of the small problems we have had with the system in the past. This improvement is expected to allow a more entertaining and educational experience for participants and viewers. In 2012, the winners were Darragh O'Connor (Dalhousie University) and Adrian Smith (University of Calgary) from Canada.

New developments for the 2012 Annual Meeting were anchored by the new Student Pavilion in the exhibition hall. The Student Pavilion was conceived as a 360 ft<sup>2</sup> location for students, industry, and faculty members to access focused career advancement, learn the student chapters' best practices, and be part of unique networking opportunities while learning about the new programs and products offered by SEG. The Pavilion was a great success, with many activities and even more participants, and we look forward to the same success in 2013.

CUSP continues to look for opportunities to cooperate with other organizations and professional associations for the advancement of geosciences worldwide. Good examples are the ongoing SEG career advancement workshops held during AGU's Fall Meeting that focus on career advancement tactics for students and young professionals; joint educational and outreach projects with the American Geosciences Institute (AGI); and joint student conferences with AAPG and EAGE.

## **Continuing Education**

### **Deyan Draganov, chair**

The Continuing Education (CE) Committee works to provide a curriculum of high-quality professional courses, given by skilled instructors, to the exploration-geophysics community. To ensure that the current needs and standards of the community are met, constant oversight of the curriculum and of the way the courses are presented is essential.

#### **Course offerings 2012–2013**

Twenty public courses were given during the 2012 SEG Annual Meeting; five were new. The attendance was good with a record number of 399 students. SEG held two public courses in February 2013 in Houston with a total of 34 participants. Courses taught in April 2013 had 61 attendees. For the first time, SEG held courses (two) at an educational event of the Dhahran Geoscience Society. The courses were taught in April 2013 and had a total of 61 attendees. SEG held the course “3D Seismic Attributes for Prospect Identification and Reservoir Characterization” by Kurt Marfurt in conjunction with AAPG as part of the post-course offerings, with a total of 32 participants.

Five in-house contract courses were held from August 2012 until May 2013, with more than 100 attendees. Contract courses remain on the rise for 2013.

#### **New courses**

Four new courses were added to the curriculum. The topics are seismic diffractions, full-waveform inversion for GPR, surface-wave methods, and horizontal-to-vertical spectral ratio method for near-surface characterization. These new courses aim at filling a gap in the curriculum that would appeal to the near-surface part of the exploration community. A new course (Characterization of Heavy Oil Reservoirs) was added to the Exploration and Production Geophysics subjects and will be taught for the first time at the SEG Annual Meeting in 2013.

#### **eLearning**

SEG has offered virtual courses since August 2011—live online seminars of 90 minutes. These have proven successful. Four different virtual courses were held in the past year—in August and December 2012 and in March and April 2013. The August and December courses were presented twice. One virtual class was a joint course by SEG/SPE and had 72 attendees. All virtual courses are available for online purchase.

Since April 2013, individual presentations from the Technical Program have been available for online purchasing. The 20-minute recordings are available in a format similar to iTunes, where the customer can purchase individual presentations at a low price. In addition, the Distinguished Lecturer and the Honorary Lecturer recordings are available online.

#### **Others**

To make it easier for potential students to decide which CE course is best suited for them, each course has labels for the intended audience (entry, intermediate, or advanced level of the

course) and prerequisites (required knowledge, experience, and education).

As the CE curriculum is expanded with new courses, it was necessary to create clear rules and a procedure for sunsetting CE courses no longer in demand. A task force proposed rules, subsequently accepted by the CE committee as an official procedure to follow for sunsetting courses.

#### **SEG staff**

All the work was made possible because of the excellent work of SEG’s Professional Development department. The committee is thankful for their hard work.

## **Development and Production**

### **Martin Terrell, chair**

The Development and Production (D&P) committee continued to provide means to discuss and disseminate the latest technologies related to integrated reservoir understanding. At the Annual Meeting, we held our committee meeting, hosted a D&P Luncheon, and organized a workshop. The committee has organized the 2013 D&P Forum to be held in Krakow, Poland, on unconventional resources, and has begun planning the 2014 forum.

The D&P committee meeting was attended by approximately 30 members. Martin Terrell was installed as the new chair, the 2013 and 2014 D&P forums plans were discussed, and the possibility of generating 4D standards was introduced. The D&P Luncheon was attended by more than 100 people who listened to Eric von Lunen of Nexen provide an excellent talk on an integrated approach (“Challenges and Solutions in Estimating Reserves in Unconventional Resource Plays”). The key message in the talk was to focus on resource producibility rather than resource presence. The committee hosted a workshop on the Best of the D&P Forum which was held earlier in the year in Banff, Canada. The Forum addressed “Multiscale, Multidisciplinary Integration of Data.”

The 2013 D&P Forum was held in Krakow, Poland, in July; the theme was “Integrated Geophysics for Unconventional Resources.” It included more than 40 speakers and 75 participants. While technology has helped unlock this key resource, there are still challenges to fully optimizing production and issues of public perception. The forum brought together scientists from industry, government, and academia to discuss key challenges in dealing with unconventional reservoirs. Topics ranged from rock physics to monitoring to public perception. A half-day follow-up workshop featuring some of the top presentations will be held at the SEG Annual Meeting.

The D&P Committee Luncheon, to be held during the 2013 SEG Annual Meeting, will bring together more than 100 geoscientists to discuss geophysical technologies specific to developing and producing hydrocarbons. This year’s speaker, Martin Landrø from the Norwegian University of Science and Technology,

will present “Marine seismic acquisition—recent developments and implications for reservoir characterization.” The Annual Meeting will once again feature the D&P committee meeting and a workshop on the Best of the D&P Forum in Krakow.

## **DISC 2013**

### **Baishali Roy, chair**

2012 is the first year for SEG to organize and administer the global DISC lecture without the partnership of EAGE. Congratulations to SEG staff for a wonderful job in their first year.

The 2012 DISC instructor was Chris Liner from the University of Houston. His DISC, “Elements of Seismic Dispersion: A somewhat practical guide to frequency-dependent phenomena,” was held in 30 locations reaching approximately 1332 professionals and students.

The 2013 DISC instructor is David Johnston from ExxonMobil. He will visit 36 locations worldwide and has already had a successful start. His DISC is titled “Making a Difference with 4D: Practical Applications of Time-lapse Seismic Data.” A summary of his course outline:

Time-lapse (4D) seismic technology is a key enabler for improved hydrocarbon recovery and more cost-effective field operations. By analyzing differences of multiple seismic surveys acquired over a producing reservoir and by integrating with conventional reservoir monitoring data, 4D seismic data provides valuable insight on dynamic reservoir properties such as fluid saturation, pressure, and temperature. Changes in these reservoir properties that occur during hydrocarbon production are identified and quantified by 4D analysis and used to identify areas of bypassed and undrained pay and to improve geologic and engineering models. The purpose of this course is to provide an overview of the fundamentals of 4D seismic technology, starting from its role in field lifecycle planning and then through seismic acquisition, processing, and analysis. However, a primary focus of the course is interpretation and data integration. Case-study examples will be used to demonstrate key concepts and will be drawn upon to demonstrate the range of interpretation methods currently employed by the industry and the diversity of geological settings and production scenarios where 4D is making a difference.

The 2014 DISC instructor will be Shawn Maxwell from Schlumberger, and his topic will be “Microseismic Imaging of Hydraulic Fracturing: Improved Engineering of Unconventional Shale Reservoirs.” His course is currently in preparation. The DISC committee along with the staff has finalized 30 locations for the 2014 DISC.

The 2015 DISC instructor will be John Anderson from ExxonMobil, and the topic will be “Extracting Images and Earth Parameters from the Wave Equation: Extending RTM and FWI from Acoustic Physics to Anisotropic Viscoelastic Physics.”

The committee is currently working on 2016 DISC nominations. The Finance Committee has approved a DISC registration fee increase beginning in January 2014.

## **Distinguished Lecture**

### **Susan Webb, chair**

The Distinguished and Honorary lecture tours are two very successful SEG programs. These tours bring high-quality lectures to sections, societies, and student sections throughout the world. In many locations, these tours are the most direct contact that members have with SEG and serve as excellent platforms to recruit new members. The Distinguished Lecture (DL) program is designed to recognize outstanding individuals for the high quality of their contributions to geophysics at an international level. These are people who are outstanding communicators of ideas and concepts.

Through the SEG Foundation, the DL program is supported by CGG and Paradigm, and we sincerely appreciate their support! The Honorary Lecture program, a companion to the DL program, now encompasses six regional lectures and one global topic (Near-Surface Geophysics). The regional HL program is fully supported by Shell through the SEG Foundation. The newest of these, the Near-Surface Geophysics Honorary Lecture, is still looking for a long-term sponsor(s). Demand for the inaugural near-surface lecture has been high. The committee accepts nominations twice a year; please contact us with suggestions for speakers.

Sam Gray, the 2012 Spring DL, spoke on “A brief history of depth ... and time seismic imaging” in 36 locations reaching 2206 geoscientists. The feedback was excellent as illustrated by Gary Mercado of BP/ADMA-OPCO in Abu Dhabi: “Good combination of basic and advanced technical slides on migration and its development. Thought provoking presentation as witnessed from the number of questions following the presentation.”

Manika Prasad, 2012 Fall SEG/AAPG DL, presented “Shales and imposters: Understanding shales, organics, and self-resourcing rocks” at 30 locations reaching 1930 geoscientists and students. John Hole of Virginia Tech provides an example of the positive feedback we received: “It was great to have a full day prior to the seminar to meet the speaker. Highly interesting and pleasant to talk with. I heard numerous positive comments about the meeting, both scientific and personal.”

Gerard Schuster served as the 2013 Spring DL. His lecture “Seismic interferometry and beyond—Harvesting signal from coherent noise” has been presented at 50 locations.

Carl Regone will serve as the 2013 Fall DL tour. His DL titled “Acquisition modeling: Expect the unexpected” is in the planning stage.

The tour of 2013 Fall AAPG/SEG DL Joe Stefani tour will be organized by the AAPG; his tour is in the planning stages.

The 2012 HLs were:

- Central and South America, Eduardo Filpo: “Image ray time-to-depth conversion and model ray applications” reached 641 geoscientists in 15 locations. “Dr. Filpo was a good speaker, and we all learned a lot from his talk, especially the students. He is a very nice person and we shared good moments,” noted Danilo Velis, professor at the Universidad Nacional de La Plata, Argentina.
- Europe, Ian Jones: “From imaging to inversion” reached 1679 geoscientists in 30 locations. “Very good presentation for the students (because showing the possibilities of an industry career) as well as for the faculty (showing state-of-the-art in the subject); also, Ian is a pleasant person!” commented Stefan Buske, TU Bergakademie Freiberg, in Freiberg, Germany.
- Middle East and Africa, Rocco Detomo: “4D time-lapse seismic reservoir monitoring of African reservoirs” reached 1058 geoscientists in 24 locations. Mark Prempeh, of the Ghana National Petroleum Corporation, Accra, Ghana said, “The lecture was useful and insightful. Thank you for bringing Dr. Detomo to share with us this interesting topic as we prepare to use 4D seismic in our producing field.”
- North America, Shuki Ronen: “Ocean-bottom acquisition and processing: Past, present, and future” reached 865 geoscientists in 19 locations. “It was an excellent presentation, which provided an up-to-date look at the state of the art in acquisition” shared Phil Schultz, Chevron, Houston.
- Pacific South, Peter Hatherly: “A role for geophysical methods in meeting the resource requirements of the 21st century” reached 654 geoscientists in 12 locations. “He delivered his lecture excellently, his slides were well organized. He was so kind and nice to chat with so the students could ask questions. For me, I felt amazed by his lecture and understand more about energy and coal exploration as did other students here,” revealed Melania Seta Dhesti Wijayaningsih, Gadjah Mada University, Yogyakarta, Indonesia.
- South and East Asia, Sam Zandong Sun: “The cheapest elastic information: How rock physics models and amplitude processing affect prestack PP inversion” reached 1651 geoscientists in 22 locations. “Kyoto University SEG Student Chapter was honored to invite such an enthusiastic lecture in Kyoto. We appreciate Dr. Sun for his visit to Kyoto University for SEG Honorary Lecture. We are grateful to SEG for giving us such a nice chance to have the HL and for financial support to realize his visits,” said Yukihiro Kida, Kyoto University, Kyoto, Japan.
- Near Surface, Rick Miller: “Near-surface seismic: More than a problem of scale” reached 1118 geoscientists in 22 locations. “Miller provided a talk about a complex topic in an understandable way. According to what I heard from others in the audience, his presentation was accessible also

for nonexperts. Well done,” stated Lennart Brüning, Student Geoscientific Society Berlin and Potsdam, Berlin, Germany.

Overall the HL program has been attended by approximately 7666 geoscientists (many of them students) through 142 lectures. The feedback has been overwhelmingly positive. To view SEG lectures online, visit the following Web sites: <http://www.seg.org/education/misc/dllibrary> and <http://www.seg.org/education/misc/hllibrary>.

Encourage your friends, colleagues, and students to explore this valuable resource! I’ve viewed several that I couldn’t attend!

The 2013 HL program is:

- Central and South America, Marco Polo Buonora: “The use of mCSEM for deep-water hydrocarbon exploration in Brazil.”
- Europe, Marion D. Jegen: “Joint inversion: The way forward to a comprehensive Earth model.”
- Middle East and Africa, George Smith: “AVO in exploration and development.”
- North America, Nick Moldoveanu: “Evolution of marine acquisition technology after wide azimuth.”
- Pacific South, David Isles: “Aeromagnetism—A driver for discovery and development of Earth resources.”
- South and East Asia, D. P. Sinha: “Earth velocity estimation—Bridge the gap of interdependency between geology and geophysics.”
- Near-surface, Valentina Socco: “Surface wave analysis for near-surface characterization: Introduction, theme, and variations.”
- None of these lectures would happen without the diligent work of the SEG business staff in Tulsa. Judy Wall, Jenny Cole, and Karline Threadgill have been wonderful resources, with all the contacts and planning and keeping us all on schedule. All lecturers have expressed nothing but praise for the organization of their tours, and this is all to the credit of the Tulsa team.

## Finance

### Nancy J. House, chair

SEG finance has undergone major changes over fiscal year 2012–2013. We welcomed a new finance director, Dana Falletti, and the Finance Committee (FC) suggested a number of additional processes to increase fiscal discipline and requested that alternate budgets be provided to incorporate scenarios that don’t rely on ever-increasing revenues from limited sources. The members can feel confident that the FC is active and engaged in ensuring that SEG is fiscally secure to carry out an increased level of programs going forward.

The FC met in Denver on 2–3 April to review the 2013–2014 budget at more than \$23 million (including budgets of subsidiary corporations—SEG Global, Inc., SEG Real Estate, and SEAM).

There was a projected net loss of \$331,000 because of a projected loss from SEG Global, Inc. of \$775,000 offset partially by a projected overage from SEG Real Estate Corporation of \$434,000. SEG alone had a projected total budget of nearly \$19 million with a projected net income of \$10,000.

The proposed budget was reviewed prior to the arrival of the finance director. The FC sent specific recommendations to the SEG Board for further consideration that resulted in several motions from the Board to accept the budget in May, subject to a number of the recommendations and further modifications. Further modifications in revenue and projected losses of SEG resulted in a revised net income of \$443,000, with a revised net income of the consolidated corporations and SEG of \$111,000.

Additionally, motions were passed that called for operating plans to accompany the budgets of FY2015 and beyond, to create metrics on SEG staffing levels and compensation compared to similar nonprofits, and for clear project cost accounting to support operating plans.

An important part of management of the cash on hand is recommending how to invest it. SEG moved its investment of some of the cash reserves to Ameriprise Financial in 2012. The recommended investment strategy for \$7.5 million in cash is to split investments into three categories (operating 40%, intermediate-term 35%, and long-term 25%) to maximize the value to SEG while minimizing the risk. Proposed modifications to the travel policy were reviewed by the FC and approved by the Board. In addition, there are ongoing discussions and financial analysis regarding construction of a new building on the land owned in Tulsa.

Committee members include Anna Shaughnessy, John Eastwood, and Nancy House (chair).

#### Finance Committee Comments and Recommendations During FY13:

1. Finance Committee commends SEG staff with stewardship of 2013 budget, which is projected to be within 1.5% of forecast (with minor deficit).
2. Program/fiscal prioritization needs to be a focus for both new initiatives and legacy projects. FC is concerned with continuous growth mode exhibited by SEG in staff, travel, training, and programs.
  - Prepare contingency budget plan for reduction in revenue and investigate more sustainable revenue streams.
  - In addition to the prepared FY14 budget, build a 2014 budget flat to 2013 budget showing explicitly what activities are deferred or removed from program (these should not be just the “new initiatives”). This will demonstrate a “what if” you don’t have the revenue increases. Present to FC, then to the Board.
  - Develop continuous reporting tool to provide Board and FC with better reporting to alert Board and committee of status of projects (such as how do current financial reports compare to original business plans prepared for various ini-

tiatives). FC sees growth in staff, travel, training, etc. with no sunsetting.

- Staff develops initial prioritized project/program list based on strategic plan developed by Board and documentation (includes proposal, five-year business plan, and any subsequent financial analysis) for the FC, then to the Board for reviews.
3. SEG Global, Inc. and SEG Global Relations (China and Middle East offices) represent single largest deficit item with a deficit range of \$770K–\$1760K (including SEG Tulsa incurred costs) projected for 2014.
    - Need to revisit historical financial assumptions and business plan for these offices and update projections for next 3–5 years (as well as past three-year performance).
    - Need to understand revenue streams to date (tangibles and intangibles) SEG vs. SEG Global, Inc. Where is revenue from meetings and membership being booked?
    - Review with FC prior to presentation to Board.
  4. Build three-year budget forecast including all meetings (Level V-SEG operated, Level IV-cosponsored, and Annual Meeting) and major assumptions (Annual Meeting location, known strategic initiatives) and inflate other budget items with CPI.
    - Build chart showing financial impact of Houston vs. other locations; recommend strong bias to venues that provide strong revenue in 2013, 2014, 2015.
    - Build similar charts for Level IV, Level V meetings.
    - 2014 budget very dependent on forecast Houston Annual Meeting revenue (2014 ~\$4.5 million forecast profit).
  5. 2014 travel (\$769K) to be capped at 2013 projection (\$609K) + 5% (to \$640K).
  6. 2014 training (\$226K) to be capped at 2013 projection (\$151K) + 20% (to \$181K).
  7. Staff growth over last five years has been significant (staff costs will have doubled in six years). Recommend to arrest staff growth and supplement with internal optimization via prioritization.
    - 2014 staff growth request of seven people (\$560K) is acceptable to FC; however, any further augmentation needs consideration from FC and Board (i.e., impact of EEGS merger).
    - Prepare staff reduction contingency for program reduction in future years. Can some positions be transitioned to cover new duties or eliminated to implement strategies without adding new staff?
  8. Physical book sales represent a significant projected loss for SEG in FY13: ~\$400K (similar unpredicted losses occurred in prior years). Need to have concerted effort to decrease this (2013 missed budget projection revenue by \$275K).
    - FC requires an analysis as to why the department consistently misses the revenue targets.
    - FC recommends Board reconsider the importance of physical book sales.
  9. FC supports the fully burdened workshops with a 20% margin.
  10. Membership revenue projected to be flat. Need to ensure we are maximizing membership— request Membership

Committee to report to FC actions to increase membership revenue.

11. EEGS is not in the FY14 budget. This could have a negative impact of up to \$2,500,000.

## **Global Affairs**

### **Jill Lewis, chair**

The Global Affairs Committee (GAC) met at the 2012 Annual Meeting at which topics such as Eurasian and Africa assessments, committee positions, igniting committee members to action, and committee luncheons were discussed. The four GAC luncheons were all successful.

The committee's midyear meeting was held in June 2013 before the European Association of Geoscientists and Engineers (EAGE) meeting in London. Topics of discussion included the global development of SEG membership and activities, mentorship programs, committee communication, global membership changes, student participation in the committee, and international events at the Annual Meeting. It was also discussed how SEG could present a global forum during the Annual Meeting. The conclusion of this discussion is that there needs to be more than a global special session in the Technical Program because this can be accessed only by full delegates. Within the exhibition area, there needs to be an opportunity for the governments around the world to show opportunities in their region. This could take the form of a poster session or area dedicated to this subject. Not only will this be good for the GAC but also show what types of technologies and areas will be the forthcoming challenges for the industry, such as deep water, shales etc., by the opportunities offered.

The committee is currently collaborating with SEG Global, Inc. on an assessment of the Africa, Eurasia, and Latin American regions for expanded SEG activities.

## **Gravity and Magnetism**

### **Tim Grow, chair**

The Gravity and Magnetism Committee focuses on activities within the Society dealing with gravity and magnetism and promotes the knowledge and use of these potential field methods. Our committee communicates to members throughout the year via Internet and meets this year at the Annual Meeting. There are more than 50 members on this committee. They are instrumental in organizing Annual Meeting sessions and activities, providing input to *The Leading Edge*, advising on technical standards, and overseeing the gravity and magnetism dedicated list server, which includes geophysicists outside SEG.

The 2013 Annual Meeting features technical oral and poster sessions, a luncheon, and a workshop. Chuck Campbell organized the technical oral and poster sessions, with abstract-reviewing assistance from committee members. A postconvention workshop titled "Exploration of Continental

Rifts: From Regional to Prospect Level" is being organized by Neda Bundalo and Vsevolod Egorov. This year's workshop is dedicated to applications of gravity and magnetic methods in exploration of continental rifts. Its focus is on both failed and active rift systems within the continents. The presentations will be scheduled to facilitate maximum interaction and discussions among the participants. There will be both oral and poster presentations. The luncheon, organized by Tim Grow, will feature Colin Reeves of Earthworks BV, as speaker. The title of his talk is "Non-uniqueness on our unique planet."

Our committee is involved in SEG publication activities. A regular editorial column within *The Leading Edge* titled "The Meter Reader" focuses on different issues involving potential fields. The publication of this column is coordinated by Robert Pawlowski. A special section dedicated to gravity and potential fields was published in the August 2013 issue of *The Leading Edge*. This special section was coordinated by guest editors Michal Ruder and Bob Pawlowski.

Continuing-education activities are spearheaded by Ruder who coordinates and teaches the gravity and magnetism methods and interpretation short course several times through the year.

Bimonthly dinner discussions were organized by committee member Alex Blacque through the Potential Fields SIG of the Geophysical Society of Houston.

The chair of the Gravity and Magnetism Committee for 2012–2013 is Tim Grow, and vice chair is Vsevolod Egorov.

## **Historical Preservation**

### **Bob Wyckoff, chair**

The Historical Preservation Committee (HPC) was established to continue the preservation of important artifacts, instruments, and documents that had previously been part of the SEG Geoscience Center which was closed in 2009. Despite its relatively brief existence, HPC has completed several projects, and others are moving forward.

Exhibits detailing various aspects of applied geophysics have been created at various locations. Routine visits were made this past year. The first, at the University of Oklahoma, includes documents by and about John C. Karcher, a graduate of the university. The exhibit is in Sarkey's Energy Center, part of the ConocoPhillips School of Geology and Geophysics, which is also the home of the Oklahoma Geological Survey. The second exhibit is at Oklahoma State University in the Noble Research Center, Boone Pickens School of Geology.

HPC members meet during SEG's Annual Meeting to review progress and plan for the coming year. At the 2012 meeting, Brian Frehner, an associate professor of history at Oklahoma State University, presented his research project depicting the "1920–1930s" history of geophysical exploration and the pivotal

role of geophysicists and the technological advances they have innovated to locate hydrocarbons. Four display panels were assembled from his work: Finding Oil, Exploration, Technology, and Innovation. These panels were on exhibit at the 2012 Annual Meeting and now are at the University of Oklahoma. Duplicate panels will soon be on exhibit at Oklahoma State University. File copies were forwarded to the Geophysical Society of Houston Museum Geoscience Center for poster displays. Frehner completed a road trip to Austin, Houston (visit with Lee Lawyer and Bill Gafford and local exhibits), Scott Petty in San Antonio (Petty archive and Witte Museum), Decker Dawson in Midland, and Dallas museums for his research work.

Activities for 2013 include Frehner continuing his research work. He has completed a voice-over for the four panels which now can be accessed through the SEG Web site, Education—eLearning menu. Tom Agnew, SEG's associate executive director for programs, was instrumental with bringing this exhibit to a virtual presentation. Frehner will be in Europe this summer and has made arrangements to further his research work in Germany and Poland. He will join us in Houston at the SEG Annual Meeting to present his latest work at the HPC committee meeting. Recently, we visited with the Oklahoma Historical Society in Oklahoma City to further investigate providing artifacts and documents for the Oklahoma Oil and Gas exhibit opening late this fall. We will provide a 1950s-vintage 24-channel recording system/exhibit, gravity and magnetometer instruments, a vintage oscilloscope for earthquake demonstration, and various pictures and documents with reference to geophysical operations in Oklahoma in the 1940s–1950s.

## Honors and Awards

### Fred Aminzadeh, chair

The Committee on Honors and Awards consists of past presidents of SEG, one appointed each year by the current president. This year's committee members were Fred Aminzadeh, Larry Lines, Steve Hill, and Klaas Koster. Beginning at the 2012 Annual Meeting in Las Vegas, nominations were solicited from the membership at large to be considered for honors and awards at the next Annual Meeting. These suggestions are gathered early in the next year then augmented by explicit contact with SEG committees, business and academic leaders, and the Committee on Honors and Awards itself. The Technical Program Committee of the 2012 Annual Meeting, the editor of *GEOPHYSICS*, and the Editorial Board of *The Leading Edge* provide nominations for the various awards associated with oral presentations, poster papers, and published articles and papers.

The decision process flows through the Honors and Awards Committee and involves extensive research by each of these groups. Nominations approved by the H&A Committee are submitted to the SEG Board of Directors, which must provide approval. The nominations by the 2013 Honors and Awards Committee were approved by the SEG Board at its meeting on 15 May 2013.

The following Honors and Awards will be conferred by SEG at the 83rd Annual Meeting in Houston, Texas. Full citations for these awards will be published in the program for the Honors and Awards Ceremony and, subsequently, in *The Leading Edge*.

### Maurice Ewing Award

Peter Hubral

### Honorary Membership

Michael Zhdanov and Paul Stoffa

### Virgil Kauffman Gold Medal

Serge Shapiro

### Cecil Green Enterprise Award

Don Robinson

### Reginald Fessenden Award

Dan Kosloff

### J. Clarence Karcher

David Halliday, Sam Kaplan, and Gilles Hennenfent

### Distinguished Achievement

EXPEC Advanced Research Center-Saudi Aramco

### Life Membership

M. Lee Bell, Tim Berge, Arthur Cheng, and Mike Forrest

### Best Paper in GEOPHYSICS

“3D edge detection seismic attributes used to map potential conduits for water and methane in deep gold mines in the Witwatersrand basin, South Africa”

Musa S. D. Manzi, Raymond J. Durrheim, Kim A. A. Hein, and Nick King

### Honorable Mentions

“Imaging condition for nonlinear scattering-based imaging: Estimate of power loss in scattering”

Clement Fleury and Ivan Vasconcelos

“Imaging and quantifying salt-tracer transport in a riparian groundwater system by means of 3D ERT monitoring”

Joseph Doetsch, Niklas Linde, Tobias Vogt, Andrew Binley, and Alan G. Green

“Retrieving 2D structures from surface-wave data by means of space-varying spatial windowing”

Paolo Bergamo, Daniele Boiero, and Laura Valentina Socco

### Best Paper in *The Leading Edge*

“Microseismic interferometry”

Vladimir Grechka and Yang Zhao

### Honorable Mention

“On some controversial issues in rock physics”

Lev Vernik and Mark Kachanov

### Best Oral Paper Presented at SEG's 82<sup>nd</sup> Annual Meeting

“Full wavefield inversion of time-lapse data for improved imaging and reservoir characterization”

Partha Routh, Gopal Palacharla, Ivan Chikichev, and Spyros Lazaratos

### **Oral Paper Honorable Mention at SEG's 82<sup>nd</sup> Annual Meeting**

“On the prediction of repeatability noise in marine time-lapse surveys”

Juan Cantillo

### **Best Poster Paper Presented at SEG's 82<sup>nd</sup> Annual Meeting**

“Postearthquake seismic reflection survey, Christchurch, New Zealand”

Don C. Lawton, Malcolm B. Bertram, Kevin W. Hall, and Kevin L. Bertram

### **Poster Paper Honorable Mention at SEG's 82<sup>nd</sup> Annual Meeting**

“Integrated geophysical archaeological prospection resulting in the discovery of the school of gladiators in the Roman town of Carnuntum in Austria”

Matthias Kucera, Wolfgang Neubauer, Michael Doneus, Immo Trinks, Erich Nau, Geert Verhoeven, Sirri Seren, Alois Hinterleitner, Klaus Locker, L. Michael Pregesbauer, Timothy Saey, Philippe De Smedt, and Marc Van Meirvenne

### **Best Student Oral Paper Presented at SEG's 82<sup>nd</sup> Annual Meeting**

“A new velocity-pressure-compaction model for uncemented sediments”

Matthew Saul and David Lumley

### **Student Oral Paper Award of Merit at SEG's 82<sup>nd</sup> Annual Meeting**

“Adaptive sampling of potential-field data: A direct approach to compressive inversion”

Leon Foks, Richard Krahenbuhl, and Yaoguo Li

### **Best Student Poster Paper Presented at SEG's 82<sup>nd</sup> Annual Meeting**

“A comparison of 5D reconstruction methods”

Aaron Stanton, Nadia Kreimer, David Bonar, Mostafa Naghizadeh, and Mauricio Sacchi

### **Student Poster Paper Award of Merit at SEG's 82<sup>nd</sup> Annual Meeting**

“Enhanced dispersion analysis of borehole array sonic measurements with amplitude and phase estimation method”

Wei Li, Rui Guo, Guo Tao, Hua Wang, Carlos Torres-Verdin, Jun Ma, and Chicheng Xu

## **Inter-Society Relations**

### **Brad Birkelo, chair**

The Inter-Society Relations Committee (ISRC) was formed in 2012 by President Bob Hardage who transformed the Inter-Society Cooperation Task Force into an ad-hoc committee. The ISRC members are the chairs of the four major collaboration committees: Bill Barkhouse (AAPG), Remke van Dam (AGU), Rick Miller (EEGS), and Brad Birkelo (SPE). The group's mission statement is:

The Inter-Society Relations Committee (ISRC) will monitor, evaluate, and coordinate the activities of all SEG Inter-Society

Cooperation Committees to ensure SEG applies appropriate and consistent policies in interactions with all professional societies. ISRC will recommend actions to the Board of Directors that will result in inter-society programs and activities that will benefit SEG, support the global geophysical community, and minimize SEG inter-society conflicts.

The ISRC functions as a resource for the Board of Directors and the various collaboration committees to facilitate discussion and ideas.

## **INTERPRETATION Editorial Board**

### **Yonghe Sun, editor**

SEG and AAPG join hands this year in publishing the new peer-reviewed technical journal INTERPRETATION. This is not just another journal of geosciences. As revealed by its name, the two organizations dedicate the new publication to the art and science of interpretation.

### **A while in the making**

The idea of a new journal to cater to the “underserved” practicing geophysicists in the exploration industry was floated several years ago. The initiative gained momentum in 2010 as SEG adopted a formal procedure for launching new journals and saw a strong potential for synergy between a possible journal on interpretation and SEG's IQ Earth initiative on integrated quantitative interpretation. The Executive Committee approved the creation of INTERPRETATION, and the journal was launched in October 2012. AAPG became copublisher in February 2013. SEG and AAPG will take turns to appoint the editor and the deputy editor, both for three-year terms. Yonghe Sun, appointed by SEG, is the first editor. R. Randy Ray, appointed by AAPG, is the first deputy editor. The Editorial Board consists of William L. Abriel, Alistair R. Brown, Karen Sullivan Glaser, Bob A. Hardage, Bruce S. Hart, Donald A. Herron, David H. Johnston, Kurt J. Marfurt, John J. O'Brien, Juan Carlos Soldo, Stephen A. Sonnenberg, Linda R. Sternbach, and Hongliu H. Zeng.

### **An engaging editorial setup**

If you browse through the current May (as of this writing) issue of AAPG's Bulletin or May-June issue of SEG's GEOPHYSICS, you would perhaps agree that interpretation geoscientists in the resource exploration, production, and service companies do not have a strong tradition of participating in the technical publications of SEG and AAPG, the two premier international associations of exploration geosciences. The editorial processes of their new journal are thus designed to actively engage this “underserved” interpretation community. The journal has standing sections (e.g., one on pitfalls and another on tools, techniques, and tutorials) and welcomes regular technical contributions. The INTERPRETATION Editorial Board identifies, engages, and advises a broad range of technical experts as champions to organize theme-based special sections that supplement regular submissions. When fully ramped up in a few years, the journal may well feature two or more special sections per month, with each section involving 4–5 guest editors. The editorial process

would thus engage more than a hundred editors and more than a thousand authors and expert reviewers per year.

### **A cross-organization publication**

A majority of the interpretation geoscientists are practicing geologists and geophysicists. It is only natural that SEG and AAPG jointly publish the journal with their combined 70,000 members as the primary audience. Subsurface interpretation requires the integration of data and knowledge from multiple geoscience practices and disciplines, and first and foremost among them are geology and geophysics. With easy finds gone, this is more so than ever. Take deep-water GOM as an example. Many prospects are subsalt plays covered by overlapping salt canopies. Subsalt imaging is seriously challenged by complicated salt geometries, steep dips near salt flanks and edges of minibasins, and high-velocity contrasts of sediment-salt and sediment-rift boundaries. Here interpretation and velocity analysis are hindered by inadequate imaging, and imaging, cyclically, is hampered by the inadequate model of salt geometry and sediment velocity. This chicken-egg problem is not without hope. Improved understanding of salt tectonics, incorporation of non-seismic data, and use of other a priori knowledge can help constrain the velocity. An incrementally improved velocity model, and thus, imaging, can help the interpreter refine the definition of salt and raft geometry for better velocity analysis. INTERPRETATION, being a joint publication and an integrated platform, is in a unique position to help facilitate this interactive, multidisciplinary process. It can, for example, feature several special sections (e.g., “Salt tectonics and interpretation,” “Salt basin model building and interpretation,” and “Potential field interpretation”) to stimulate a comprehensive publication on imaging and interpretation of salt-sediment interactions.

### **A constructive peer-review process**

For critical readers and implementers of ideas from conference abstracts and trade-magazine articles, I would be preaching to the choir to emphasize the value of peer review. It is usual for manuscripts to go through revisions, some substantial, before acceptance. Some papers contain fundamental technical flaws. Some technical deficiencies may not be within the authors' normal means to remedy (e.g., numerical results not within the mandate of a funded business project or from a past project now no longer active with accessible data). What course of editorial action would best serve the interpretation community? The journal's editorial processes are designed for the editors and reviewers to help authors develop publication-worthy materials into high-quality contributions. The reviewers and editors are challenged not to throw away the baby with the bathwater. They are asked to annotate all flaws they discover and make specific suggestions to authors on how to correct them. The technical interpretation community has responded exceptionally well to this call of constructive author-reviewer-editor partnership. Initially, when the papers were few, I attempted to take notes of outstanding reviews but have been quickly and happily overwhelmed because in the reviews of almost every paper, I see high-quality reviews and detailed manuscript annotations.

### **The state of the journal**

From 15 October 2012 (the date of launch) to 30 June 2013 (date of this writing), the journal has received 100 manuscript submissions. The first issue features 20 papers. Among them, eight are for the special section on “Interpreting stratigraphy from geophysical data” organized by Hongliu Zeng, Bruce Hart, and Lesli Wood. The special section received 13 submissions in all; this is an impressive result because of the extremely tight schedule.

As you might expect, we are still climbing the steep learning curve of running the journal and are making adjustments as we go. The pace of special section organizations provides a good illustration. The first two special sections were given an unrealistically short three-month submission deadline, not adequate for industry submissions having to meet intellectual property and data-permission requirements. Subsequent special sections have been given five or more months for submissions and five or more months for peer reviews. The month of August, instead of November, for the inaugural issue of the journal, and thus the first special section, was later found to be a bit ambitious. We had only one special section for the first two quarterly issues. The pace has now been picked up and has not yet reached steady state. Here is a summary of the special sections so far:

#### **August 2013 issue: 1 special section**

- Interpreting stratigraphy from geophysical data; editors: Hongliu Zeng, Bruce Hart, and Lesli Wood; submission by 1 March 2013; 13 submissions received, 8 submissions finally included in the section.

#### **November 2013 issue: 1 special section**

- Interpretation for unconventional resources; editors: John O'Brien, John Eastwood, Mitch Pavlovic, and Wayne Camp; submission by 1 March 2013; 23 submissions received; reviews in progress.

#### **February 2014 issue: 2 special sections**

- Seismic attributes; editors: Saleh al-Dossary, Arthur Barnes, Eric Braccini, Satinder Chopra, Dick Dalley, Kurt Marfurt, Marcilio Matos, Ralf Oppermann, and Kui Zhang; submission by 15 June 2013; 25 submissions received; reviews in progress.
- Pore pressure prediction and detection, edited by Dan Ebrom, Philip Heppard, Martin Albertin, and Richard Swarbrick; submission by 30 June 2013; reviews in progress.

#### **May 2014 issue: 2 special sections**

- Interpreting AVO; editors: William Abriel, John Castagna, Douglas Foster, Fred Hilterman, Ron Masters, George Smith, and Chuan Yin; submission by 31 July 2013; reviews in progress.
- Well ties to seismic data, edited by Don Herron, Rachel Newrick, John Sumner, and Bob Wegner; submission by 30 August 2013.

#### **August 2014 issue: 4 special sections**

- Interpretation and integration of CSEM data; editors: Sandeep Kumar, Lucy MacGregor, and James Tomlinson; submission by 1 October 2013.
- Multicomponent seismic interpretation; editors: Michael

DeAngelo, Bob Hardage, Paul Murray, Steve Roche, Diana Sava, James Simmons, Charlotte Sullivan, Donald Wagner, and Ran Zhou; submission by 1 October 2013.

- Microseismic monitoring; editors: Adam Baig, Jean-Pierre Blangy, Carlos Cabarcas, Jingyi Chen, Dave Diller, Leo Eisner, Jamie Rich, and Julie Shemeta; submission by 1 October 2013.
- Karst; editors: Jerome Bellian, Jason Rush, Charlotte Sullivan, Hongliu Zeng, and Kurt Marfurt; submission by 15 November 2013.

**Future issues:** targeting two or more special sections per month, or six or more per quarterly issue, when a steady state is reached.

**First-year funding:** Provided in part by Statoil through the SEG Foundation for the journal's operations.

## **IQ Earth**

### **Rocco Detomo, chair**

At the 2011 Annual Meeting, the IQ Earth Committee set targets for a new IQ Earth Program beginning in 2012. This program then founded a committee to help address the challenge of 21st-century interpretation. This program is funded through a Statoil sustaining investment with the SEG Foundation.

The second annual IQ Earth Summer Forum, in Boston, Massachusetts, was held in August 2013. Modeled on the D&P Forum and building on the success of 2012's initial forum, it addressed the challenge of integrated interpretation. Bob Hardage, past SEG president, delivered a keynote, and more than 25 talks and 7 posters were presented by a broad mix of universities, oil and service companies. This will be followed by a "Best of IQ Earth" workshop at the Annual Meeting.

In addition, the IQ Earth Committee is working with the newly approved SEG-AAPG journal INTERPRETATION to commit to one special section per year focusing on emerging methods of interpretation.

## SEG–ISEF Subcommittee

### Richard Nolen-Hoeksema, chair

The ISEF Subcommittee’s focus is the SEG International Science and Engineering Fair (ISEF), which occurs annually in May. The 2013 ISEF was 12–17 May 2013, in Phoenix, Arizona. Chuck Meeder (Emeritus, Marathon Oil) and I (Oil-field Review, Schlumberger) made up the SEG judging team. The SEG judging team selected the following projects to receive awards or honorable mentions, listed in the table below. An article about the 2013 ISEF will be published in *The Leading Edge*.

Award	Awardee	Project	Title
First	Harrison Pershing	PH043	Geometric Bore Variations and Their Harmonic Nuances In Musical Instruments
Second	Myles Mitchell	PH002	Misbehaving Waves: The SurReal Thing
Third	Harshit Singh	PH016	Electromagnetic Induction Sensor
	Tomohiko Sate, Takahiro Yomono	PH308	“V-shaped Wave”-Generated by a Moving Object: Analyses and Experiments on Capillary Gravity Waves
Team	Sergey Dukanov, Arkadiy Prigojin	CS316	Modeling of Acoustic Waves with Lattice Boltzmann Method
Honorable Mention	Alex Chang	EA011	Surviving Seismically-Induced Liquefaction: Dynamic Centrifugal Modeling of a Novel Hybrid Floating Foundation System
	Graham Gabrielson	PH020	The Effect of Molar Mass of a Gas on the Speed of a Sound Wave
	Ethan Salisbury	PH021	Using Holographic Interferometry for Measuring Magnetic Field Strength
	Justin Skycak	PH057	Making a Matching Layer for Acoustic Sensor
	Charlyn Manuyag, Fely Marie Magaoay	PH312	The Effects of Temperature on the Index of Refraction of Water

## Meetings Review and Planning

### Mark Houston, chair

At the direction of the Executive Committee, the Meetings and Review Committee (MRPC) has expanded its societal representation to better achieve the MRPC objectives:

1. To coordinate scheduling for proposed SEG-affiliated meetings, workshops, forums, and conferences
2. To review and affirm recommended SEG support levels for both domestic and international geoscience meetings; and
3. To approve/reject Level I-III Meeting Requests and recommend approval/rejection of Level IV and V Meeting Requests to the SEG Board.

MRPC membership includes representatives from SEG's regional advisory committees (Latin America, Middle East, and China), from SEG standing committees (IQ Earth, Research, Development and Production, Gravity and Magnetics, Oil and Gas Reserves, and Mining and Geothermal), and from intersocietal/cooperative committees (OTC, Intersocietal Relations, ATC, Global Affairs, and Meetings Pricing and Policy Task Force). A core mission of the MRPC is to ensure that all segments of our Society have visibility in the content, a voice in the approval/rejection, and representation in the scheduling of proposed meetings.

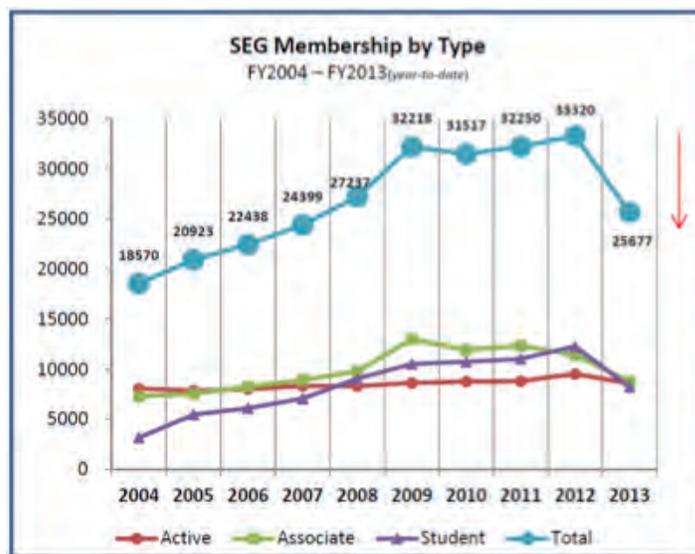
Proposed meetings, which may originate from the standing committees, intersocietal collaborations, SEG regional offices, or directly from the membership, are collated and qualified by the SEG staff in concert with the SEG Global Relations and Meetings departments and the various collaboration Committees. The meeting proposals are submitted to the MRPC for review, comment, and recommendation. The MRPC recommendations are then sent to the SEG Board for final approval and scheduling.

To date, the slate of proposed meetings mirrors the changing face of SEG: 60% of the meetings are international, 50% are intersocietal or jointly sponsored meetings, and nearly 20% are student-focused. While the international geoscience meeting schedule appears ever increasingly crowded, we encourage our membership to submit ideas and proposals to SEG.

## Membership

### Wafik B. Beydoun, chair

SEG's membership dropped by 23% between Q1 2012– Q2 2013 (see figure). A decrease in membership is normal in the third quarter as members in the arrears are dropped. However, this large decrease in membership accompanied by low recruitment numbers (2300) in the third and fourth quarter warns us that we need to revise SEG's strategy in renewing current members or recruiting new members.



Preliminary data analysis indicates that Students and Associate Members are the main categories affected. Zooming in at the numbers, we notice that:

- 61% of those who left are Students, and 29% are Associate Members, totaling 90% of members in these categories who left in the past 17 months. Active Members appear much less prone to leaving.
- 66% of those who left had three years or less membership with SEG, whereas only 25% of those who left belong to the 4–10 year membership range. We observe that membership retention is easier after three years of tenure.

The Membership Committee (MC) is concerned about these data and is working diligently with SEG staff (Carlo Simpaio and Ashley Ash), other SEG committees, and the new SEG Board to further understand what is happening and propose action plans that can reverse this trend. The challenge is twofold. We need to increase:

1. The retention rate of current professional members (to address the strength of SEG).
2. The number of new members (to address the growth of SEG).

What is the SEG Membership Committee doing about this? We highlight in what follows key actions that MC is undertaking, bearing in mind that many other initiatives are currently being investigated and consolidated.

### 1. Increase the retention rate of current professional members (strength of SEG)

The first initiative is to accelerate Associate Members to become Active Members, while ensuring that the benefit of being an Active Member is better advertised/marketed to the geophysical community.

To this effect, Alfred Liaw presented a Membership Committee motion at the May 2013 SEG Board of Directors that allows

an automatic upgrade to Active Membership after four years as an Associate Member. Although a majority of the Board was in favor of the proposal, it was tabled as it involves Bylaws revisions. The Membership Committee is currently assessing the best way to move forward on this motion at the next Board meeting.

The committee is also discussing several other initiatives to retain members, some with the Global Affairs Committee and SEG's Marketing Department, that will end up being proposed as motions at upcoming Board meetings.

## **2. Increase the number of new members (growth of SEG)**

Can we be more selective when we offer free membership to students? Could we in some way target new Student Members who have some motivation in retaining their membership once they graduate and have to pay for it? These are some of the questions the Membership Committee is currently addressing and collecting data to investigate.

At the 2014 Annual Meeting, the committee is planning to organize an event with representative Student Members and their faculty advisors to better understand why so many students are leaving SEG. The committee is looking for ways to incentivize faculty advisors to become more involved with their student sections so that they can provide more feedback about the status of graduating students and current Student Members. One way of receiving feedback from these faculty advisors is by holding a meeting at Annual Meeting to discuss with the faculty advisors how SEG can better provide support. This meeting will serve as a platform for advisors to give their ideas, suggestions, and concerns.

Other initiatives to increase the number of new members are being considered, such as gathering data and attacking this issue from two fronts: academia and industry. Once this information is collected, the Membership Committee will establish a membership strategy in line with SEG's strategic planning, and the committee will propose motions at future Board meetings.

## **Mining and Geothermal**

### **Mark Shore, chair**

**M**ark Shore took over as chair of the committee at the 2012 Annual Meeting. José Arce was nominated to serve as vice chair until the Annual Meeting in 2014. Outgoing chair Bob Lo was thanked for his service over the previous two years.

As has been past practice in even-numbered years, the 2012 Annual Meeting was an active one for the committee and included three technical sessions, a luncheon, two workshops, and a pre-meeting field trip to mines in Utah and Nevada. The workshops were well attended, the field trip sold out, and feedback from the attendees and participants was strongly positive. The committee thanks SEG as well as field-trip sponsors: Barrick Gold Corporation, Newmont Mining Corporation, Kennecott Utah Copper (Rio Tinto), and MMG Ltd. Nearly 30 members

attended the committee meeting, and we thank Geotech Ltd. for sponsoring food and beverages. Teck Resources Ltd., Lundin Mining Corporation, and the SEG Near-Surface Group are thanked for their sponsorship of a students' night during the Annual Meeting.

Sean Walker agreed to act as key contact for the 2013 Annual Meeting technical session. Because this is an inactive year, it is anticipated a single technical session will be offered.

The Mining Committee list server, hosted and sponsored by Geosoft, currently has more than 200 members and is our preferred method of communicating with our global group of committee members and others interested in mining geophysics. The committee also maintains a close relationship with KEGS (an SEG section), which helped to distribute some of our announcements to its own extensive and global e-mail list.

Committee meetings were held at mineral exploration trade shows and conferences, specifically the Cordilleran Roundup in Vancouver in January and the Prospectors and Developers Association of Canada (PDAC) in Toronto in March.

Based on feedback from members in 2012, the committee will explore the possibilities of developing a Web site-hosted repository of information relevant to mining geophysics, including technical methods, physical properties, and exploration case histories.

Over the course of the year, activities were dominated by mining and mineral exploration geophysics, apart from four geothermal-related technical presentations at the Annual Meeting.

## **Nominations**

### **Peter Annan, chair**

**T**he Committee on Nominations is charged with assembling the list of candidates for the Board of Directors and the district representatives. Historically, the committee was made up of three past SEG presidents and selected members of SEG Sections or Associated Societies with the immediate past president as chair. Starting in 2012, the process changed. An outgoing director at large serves as chair, and the committee includes three immediately prior past presidents, the chair of the Council, and four Active members, each of whom represents a Section or Associated Society. Committee members for 2012–13 were Bob Hardage, Klaas Koster, Steve Hill, Toru Mogue, Agnes Jikelo, Joseph Ebeniro, Richard Mongan, and Mike Graul, with Peter Annan serving as chair.

The nominating process is based on identifying key individuals from the membership who have either expressed interest or have been identified by their activities and volunteer commitment to SEG. The committee works through the list of potential candidates and attempts to meet the general criteria established for diversity of representation (academia, industry, discipline, gender, geographic, etc.) as well as addressing specific gaps

identified by the Board of Directors.

This year, the board identified the need for Latin America experience; the committee designated one of the director-at-large positions for such candidates.

We identified the need to get a better process in place for identifying potential candidates. Steve Hill started to formalize the process, and Klaas Koster followed suit. This year, we followed the procedures that had evolved and developed draft working procedures to pass on to the next committee and, thereby, hope to lead to a more structured approach to nominations.

On the positive side, we had an effective nomination process resulting in a solid slate of candidates. On the downside, we were challenged in getting sufficient diversity because the candidate pool was limited and time constrained outreach.

The selection of candidates for district representatives was particularly challenging. The identification of members who are in specific districts but who are not represented by a section or affiliated society proved problematic. This difficulty, combined with the change in SEG governance, plus the desire to stagger the degree of roll-off each year stretched the selection process until the last moment.

The challenge for SEG as a whole is to develop the process of identifying and grooming future Board and Council members. SEG committees and related volunteer forums are the training ground for future board members, and we will be soliciting committee chairs to identify potential board candidates so future committees have a larger and more diverse candidate pool.

The resulting nomination slate for 2013–2014 follows.

## **2013–2014 SEG Board Nominees**

### **President-elect**

Chris Liner

Anna Shaughnessy

### **Second vice president**

Rob Stewart

Sergey Fomel

### **Director at large 1**

Jaime Checa

Gustavo Carstens

### **Director at large 2**

Guillaume Cambois

Jerry Schuster

### **Editor**

Evert Slob

### **District 1**

Paul Singer

### **District 11**

Huazhong Wang

### **District 12**

Koji Kashihara

Kyaw Moe

## **Oil and Gas Reserves**

### **Pierre-Louis Pichon, chair**

**G**eneral: The OGR Committee has 20 members. The committee represents the global geophysical community, including geographic diversity with multinational participation and different facets of the industry with large integrated companies, midsized and small E&Ps, academics, and third-party consulting firms.

OGRC is fully integrated within the dynamic of defining guidelines for reserves/resources evaluation:

- Through the Petroleum Resources Management System (PRMS) endorsed by SEG (the OGRC is observer at the SPE OGRC and SPEE RDC)
- Through exchange with other geophysics and geology societies (CGF, EAGE, and AAPG have observers at the OGRC)

### **PRMS-AG**

Because SEG is a formal sponsor of the Petroleum Resources Management System Application Document (PRMS-AG), OGRC actively supports the rolling out of the PRMS-AG guidance to the broader industry through SEG Reserves Workshops, SPE Applied Technology Workshops (ATW), publications in *The Leading Edge* (TLE, September 2012), presentations at the Geophysical Society of Houston, and in international convention (EAGE London13, Caspian Oil and Gas conference).

An OGRC representative was also present at the April UNFC meeting to support the use of PRMS within this UN classification.

### **SPEE monograph 4 and PRMS update**

The OGRC is invited to review the SPEE monograph 4 when the draft will be available, and is in the loop for future PRMS updates.

### **Special section**

A special section of *The Leading Edge* on the role of geophysics in reserves estimation was published in September 2012. The focus was on PRMS-Application Guidelines roll-out, relevant case studies, and future developments. It is available, free for download, and represents a reference in connection with the PRMS-AG.

The article on the role of geophysics in petroleum resources estimation has been translated into Russian and published in *Geophysics News* in Azerbaijan.

## SEG Reserves Workshops

A half-day workshop was organized by OGRC during the SEG Annual Meeting. After a recall of the PRMS guidance on the use of seismic technology, a quick talk on the status of the geophysical application guidelines for COGEH was given, followed by a presentation on some key learnings from SPE Applied Technology Workshops (Lima, Peru and Mexico).

The workshop attracted more than 60 attendees and featured interesting discussions. Three articles from the *TLE* special section on the role of geophysics in reserves estimation were presented.

The next SEG Reserves workshop is planned for the upcoming SEG Annual Meeting.

## SPE Applied Technology Workshops (ATW)

Within these workshops, OGRC chaired and led the presentation on the seismic chapter of the PRMS-AG. Two workshops were held in 2012 (Lima and Mexico). In August 2013, an SPE workshop on “Petroleum Reserves and Resources Estimation—PRMS Applications Guidelines Document” will be held in Houston, with a specific session on seismic applications and geosciences integration. Further SPE workshops are planned in Dubai (October 2013) and London (March 2014) with more to come!

## Training and JCORET

SEG is a formal sponsor of the Joint Committee on Reserves Evaluator Training. JCORET reviews and approves courses directed to engineers and geoscientists in the areas of recommended evaluation practices, reserves and resources definitions, and ethics training.

JCORET recognized a lack of available courses on the use of seismic methods for reserves evaluation.

As a first step, an educational subcommittee has been created within OGRC to put in place training on the use of seismic technology for reserves estimation. As a result, an SEG webinar was held in March 2013. The event attracted 72 attendees, with positive feedback.

## Joint workshop on reserves estimation for unconventional reservoir

An intersociety joint workshop with SPE and another society may be held in 2014.

## Online Technical Content Board

### Kris Innanen, chair

The SEG Online Technical Content Board (OLTCB) was formed in 2010 by the Online Committee with a mandate to review and solicit online technical content and to ensure that the technical content is abundant, appropriate, and useful. The technical content referred to does not include the SEG books, abstracts, and journals already available online.

The current members of the OLTCB include Kris Innanen, Matt Hall, Bill Dragoset, John Stockwell, Frank Dumanoir, Karl Schleicher, Edith Miller, Kai Zhang, and Brian Frehner, assisted by staff members Isaac Farley, Whitney Emerick, and Ted Bakamjian. Innanen became chair of the Board after Bill Dragoset completed his two-year commitment. Bill will remain a Board member for another year to ensure continuity.

Emerick is the OLTCB’s liaison to the SEG staff, and Rick Miller serves as the OLTCB’s liaison with the SEG Board of Directors. Being an offshoot of the SEG Online Committee, the OLTCB works with that committee in a complementary fashion.

The Board continues its development of the SEG Wiki, an Encyclopedia of Applied Geophysics, progressing our discussion of its final role, which will likely involve a “curatorship” model, and an online repository of historical artifacts. Brian Frehner and Isaac Farley have been closely connected to that effort.

Goals for the coming year include:

- Develop an ad-hoc wiki user group at the SEG 2013 to solicit feedback regarding usability, navigation, and overall experience.
- Explore additional types of functionality (e.g., Open Notebook) led by Matt Hall.
- Develop and solidify the relationship between the SEG Wiki and SEG technical standards’ online presence, in consultation with the Technical Standards Committee.
- Identify Technical Forum manager, discuss methods of publicizing it.
- Arrive at recommendations for best practices for the new open data initiative (led by Karl Schleicher).

## SEG Online

### Matt Hall, chair

The online presence of SEG continues to increase in importance. Through it, the Society can reach a far wider audience than through its traditional activities alone. The Society must continue to share information that maintains its standards of excellence and promotes geophysics. In support of this and per its charter, the Online Committee (OC) solicits, identifies, and selects strategic issues (e.g., new or enhanced SEG Online features, processes, relationships, and content) for assessment and provides planning and implementation information to the SEG Board of Directors that it can use to prioritize accordingly. SEG then evaluates and implements those services that advance its objectives.

The area of greatest potential for the committee this year is building on the SEG Wiki platform, launched last year. Our community has a great opportunity to find and document some valuable resources, for example open geophysical data sets (such as the Penobscot 3D seismic data, and the Bishop grav-mag model), and exhibits, biographies, etc., in the virtual museum.

Goals for the coming year include:

- Explore ways to open the committee up to the membership at large so it can continue to be relevant and impactful.
- Find ways to engage with the membership online and at the Annual Meeting to promote awareness of the SEG Wiki, and solicit feedback.
- Find more best-use cases for the SEG Wiki, and extend its capabilities to support them.
- Establish communication with SPE and AAPG to look at opportunities for more online collaboration.

The OC members for 2013 include Bill Barkhouse, Joe Dellinger, Asma Dokmak, Bill Dragoset, Brian Frehner, Stephan Gelinsky, Matt Hall (chair), Tony Sabatino, Karl Schleicher, Jose Antonio Sierra, John Stockwell, John Sumner, Emilio Torres, and Richard Verm. Edith Miller is the Board of Directors liaison, and Brian Frehner is the Historical Preservation Committee liaison. Kris Innanen connects us to the Online Technical Content Board. Ted Bakamjian, Jennifer Crockett, Dan DeMellier, Whitney Emerick (staff liaison), Isaac Farley, and Chris Posey are the vital connections to SEG staff and systems.

The OC meets three times a year, usually in spring, summer, and at the Annual Meeting. It welcomes and invites input from all SEG members to help SEG make SEG Online an even better platform for applied geophysics collaboration.

## **Publications Policy**

### **Kees Wapenaar, chair**

The Publications Policy Committee (PPC), now in its seventh year, addresses a range of issues that fall outside the purview of other publications-related committees or involve more than one such committee. It focuses on strategic issues such as member publications benefits, intersociety publication initiatives, publication pricing policies, and questions of commercialism and conflicts of interest in publications. The committee recommends actions to the SEG Board of Directors as necessary.

Committee members are Kees Wapenaar, chair; Vladimir Grechka, Publications Committee chair; Bill Goodway, *The Leading Edge* Editorial Board chair; Long Jin, Translations Committee chair; Mauricio Sacchi, *GEOPHYSICS* assistant editor; Kris Innanen, Online Technical Content Board chair; Yonghe Sun, *INTERPRETATION* editor; Sven Treitel, at-large member; Kasper van Wijk, at-large member; Tamas Nemeth, Editor, ex-officio member and SEG Board of Directors liaison; and Ted Bakamjian, publications director and staff liaison.

Committee activities since last year's report was published included the following:

- Since its recommendation to launch *INTERPRETATION* was endorsed by the Executive Committee in May 2012, the PPC has monitored the new journal's progress, in part through gaining Executive Committee approval for a procedure change giving the *INTERPRETATION* editor membership in the PPC. The 2012 Executive Committee endorsed

extending an offer to AAPG to participate in the journal despite the PPC's view that this was unnecessary, yet some PPC members subsequently helped develop details of the offer that led to AAPG's agreement to participate in February 2013.

- The PPC endorsed a framework for negotiating an agreement with the Australian Society of Exploration Geophysicists under which the journal *Exploration Geophysics* and the ASEG Extended Abstracts would become available through the SEG Digital Library. The Executive Committee and the ASEG Federal Executive subsequently endorsed this framework. Negotiation is nearly complete, and at this writing it appears nearly assured that the ASEG publications will join SEG's online.
- In the light of the merger discussions between SEG and the Environmental and Engineering Geophysical Society (EEGS), the PPC discussed how SEG might best approach incorporating EEGS' journal into SEG's near-surface geophysics publications effort. The committee's recommendation is to replace EEGS' journal by starting with an experimental near-surface journal within *GEOPHYSICS* during 2015 and 2016, and start an independent near-surface journal in 2017 only if the experimental journal is successful and sufficiently unique from *GEOPHYSICS*' current coverage. At the time of the writing of this report, the discussion on the merger between SEG and EEGS, including the near-surface publication aspects, is still ongoing. SEG's agreement with EEGS to continue hosting the *Journal of Environmental and Engineering Geophysics* and the *SAGEEP Proceedings* in the SEG Digital Library was extended through 2014 as merger negotiations continue.
- The PPC endorsed a "cafeteria plan" for member publications benefits that subsequently was approved by the SEG Board of Directors. The plan takes effect in 2014. Members will receive *TLE* on the same basis as currently plus online access to one journal, initially either *GEOPHYSICS* or *INTERPRETATION*, with the option to purchase additional journals for delivery online and/or in print. Both *JEEG* and *Exploration Geophysics* are planned for inclusion with member benefits in 2014 but would become optional member subscriptions in 2015. The cafeteria plan is intended to help finance publications growth while expanding access through institutional subscriptions.

## **Publications**

### **Vladimir Grechka, chair**

The SEG Publications Committee is responsible for soliciting book proposals, managing development of books, and approving completed books. Another goal of the committee is to address strategic issues related to book publication and recommend appropriate actions to the Executive Committee.

Current committee members are Vladimir Grechka, Long Jin (Translations Committee chair), Sergey Fomel, Lianjie Huang, Ian F. Jones, Rebecca B. Latimer, Wei Liu, Michael A. Pelissier, and Louise Pellerin. Editor Tamas Nemeth is the Executive

Committee liaison, and Publications Director Ted Bakamjian is the staff liaison.

During fiscal year 2013, SEG published the following five books:

- *Fundamentals of Gravity Exploration*, by Thomas R. LaFehr and Misac N. Nabighian
- *Numerical Modeling of Seismic Wave Propagation: Grid-dered Two-way Wave-equation Methods*, edited by Johan O. A. Robertsson, Joakim O. Blanch, Kurt Nihei, and Jeroen Tromp
- *Seismic Signatures and Analysis of Reflection Data in Anisotropic Media*, third edition, by Ilya Tsvankin
- *3D Seismic Survey Design*, second edition, by Gijs J. O. Vermeer
- *Practical Applications of Time-lapse Seismic Data*, by David H. Johnston

Titles due for publication in the second half of 2013 include the following:

- *Geological Interpretation of Aeromagnetic Data—A Practical Manual*, by David Isles and Leigh Rankin (copublished with ASEG)
- *AVO*, by John P. Castagna and Satinder Chopra
- *Hydrocarbon Seepage: From Source to Surface*, edited by Fred Aminzadeh, Tim Berge, and David Connolly
- *Remote Sensing in Action: The Curious Case of Sherlock Holmes and Albert Einstein*, by Enders A. Robinson and Dean Clark

## SEG Research

### Cengiz Esmersoy, chair

The Research Committee (RC) improves communication among Earth scientists, promotes the advancement of Earth science and technology, and disseminates information on advances in applied geoscience. It does this through workshops and annual meeting special sessions, by forming subcommittees, and by advising the SEG Board. The committee currently has 145 geographically dispersed members from a variety of industry segments and academia.

Historically, primary activity of the committee has been to organize postconvention workshops (PCW) and special sessions for the Annual Meeting, and to organize standalone Summer Research Workshops (SRW). Some of the SRWs are organized together with other societies.

RC activities are organized through e-mail communications and two physical meetings per year: one at the annual meeting and the other typically in January. We have an evolving Web site that we are using increasingly to improve participation in RC activities. Below are the committee contributions during 2012–2013.

### 2012 Annual Meeting Special Sessions

- Recent advances and the road ahead
- Unconventional shale reservoirs

### 2012 Annual Meeting Postconvention Workshops

- Exploiting new technologies for research and careers in geoscience: Past, present, and future
- Integration of seismic and EM: Where do we stand?
- Geo-Informatics: Integrated data mining and fusion of diverse geoscience data sets
- 3D VSP—Recent trends and the road ahead
- Subsea technologies and seafloor property characterization
- Gulf of Mexico imaging challenges: What can full waveform inversion achieve?
- Full wavefield analysis for active+passive 4D seismic reservoir monitoring
- Improving data quality in noisy land areas
- Sub-basalt imaging with a focus on deep water
- Physics of rocks
- Inversion-based high-resolution imaging of reservoirs
- Seismic diffraction methods for fault and fracture detection

### 2014 SEG Summer Research Workshops

- Advances in active/passive full wavefield seismic imaging and monitoring techniques (joint SEG/AAPG)
- Broadband seismic technology (possible joint SEG/EAGE)
- Role of geophysics in integrated reservoir modeling (possible joint SEG/EAGE)

Furthermore, the Research Committee is contributing to the 2013 Annual Meeting a record 14 workshops and two special sessions.

### Other Activities

- The “Hot Topics” initiative that started a few years ago is completed and was presented to the SEG Board of directors.
- The Task Force on Forums and Workshops recommendations have been presented to the Board.

Going forward, there is much interest to better involve the global research community into RC activities. Some ideas are to utilize SEG international offices in Beijing and Dubai, and to use the RC Web site. We will be working on these in coming months.

Finally, the recent workshop pricing decision by the SEG Board is generating comments from RC members. There is a concern that total overhead is high and could further increase already high registration fees. This could put us at a disadvantage against workshops organized by the international research community, independently of any professional society, with significantly lower registration fees.

## Reviews

### David C. Bartel, chair

The Reviews Committee publishes reviews of recently published books of geophysical interest in *The Leading Edge*. Not only do these books help keep SEG membership current with recent geophysical publications, but we also review books in other geoscience disciplines and of more general interest to geoscientists. The monthly editorial feature in *TLE* provides the

committee with a continuing presence to interact with the entire SEG membership. For the 2012–13 year, 21 book reviews were published in *TLE*.

We are a global committee. One-third of our members are from outside the United States. Because the committee operates entirely by e-mail, members from around the globe can easily participate. Members come from all parts of the geophysical industry including service companies, petroleum companies, consultants, government agencies, academia, and research companies.

Book lists are sent to members of the committee several times a year. SEG staff members send the reviewer the selected books, and the reviews are sent by e-mail back to me for forwarding to the SEG office for publication. Many reviewed books are sent to SEG by publishers seeking a review. Members can also suggest books to review. Additionally, we work closely with the SEG Publications Department to provide timely review of new SEG publications.

I would like to thank Merrily Sanzalone of the SEG Publications Department for all her help in handling the logistical side of the review process, mailing out the books to reviewers, and for her efforts in obtaining review copies of new books. Thanks also to Dean Clark and Spring Harris for the quick transition from e-mailed reviews to finished product in *The Leading Edge*. Finally, thanks to all the contributors to the “Reviews” department of *TLE*. Without you, the committee could not fulfill its purpose.

Any member who would like further information or would like to add his or her talents to the committee may e-mail me at [DBartel@chevron.com](mailto:DBartel@chevron.com).

## **SEG-EEGS Collaboration**

### **Rick Miller, chair**

The SEG-EEGS Collaboration Committee has been consumed with merger discussions and negotiations since the SEG Annual Meeting in Las Vegas. To focus on enhancing support for the SEG near-surface (NS) geophysics community, a task force (including many of the members of this committee) was formed by Bob Hardage and reappointed by Dave Monk to explore and negotiate a merger between SEG and EEGS. This Collaboration Committee has been consumed with that activity. With the merger on schedule for completion at the close of this calendar year (2013), the NS community within SEG will grow and the opportunities for professional growth will dramatically expand.

Last year, SEG provided level III support for the EEGS SAGEEP meeting in Denver, with the SEG Near Surface Geophysics Section sponsoring a technical session. With approximately half the members of EEGS also members of SEG, the collaboration between our societies is quite natural and represents a growth area for the future.

## **SEG-SPE Collaboration**

### **Brad Birkelo, cochair**

The SEG-SPE Collaboration Committee, formed out of a 2009 MOU between the two societies, is designed to encourage and promote closer collaboration on topics of mutual interest. The committee formed in 2010 with three SEG representatives and three SPE representatives. SEG representatives are Brad Birkelo, Jamie Rector, and Terry Todd. SPE representatives are Gene Narahara, Sid Smith, and Mark Rubin.

A number of collaborative efforts between SEG and SPE are ongoing or planned. These include a Pore Pressure Workshop (San Antonio), a Reservoir Modeling Workshop (TBD) and an Induced Seismicity Workshop (Calgary). The committee is also working on facilitating a workshop on unconventional reservoir reserves estimation. Other multisociety collaborations that SEG and SPE are involved with include the Unconventional Resources Technology Conference (URTeC, Denver), the International Petroleum Technology Conference (IPTC, Doha and Kuala Lumpur), and several events evolving from the Offshore Technology Conference (OTC, Houston; Arctic Technology Conference, Houston; OTC Brasil, Rio de Janeiro; OTC Asia, Kuala Lumpur).

The SEG-SPE Collaboration Committee will continue to examine other areas of collaboration between the societies and will make recommendations to the SEG Board of Directors.

## **Technical Standards**

### **Rune Hagelund, chair**

#### **Committee members**

Rune Hagelund (chair), Bill Rimmer (vice chair), Stewart A. Levin, Barry D. Barrs, Peter Green, Friedrich Roth, Nils Aatland, and Jill Lewis

#### **OGP liaisons**

Rune Hagelund and Barry D. Barrs

#### **Energistics liaisons**

Rune Hagelund and Jerry Hubbard

No new standards or updates to standards were published by the Technical Standards Committee (TSC) in the last year.

The primary focus of the TSC over the past year has been the startup of the effort to update the SEG-Y format. A subcommittee was officially formed at the 2012 Annual Meeting, and it has generated a lot of interest from the industry. The initial focus of the subcommittee has been to define the scope of the new format. This work is not yet completed, but several proposals have been made, and the discussions have been active. More information on the SEG-Y Rev 2 subcommittee and the ongoing discussions, including some updated standards proposals, can be found at [www.seg.org/tsc](http://www.seg.org/tsc) in the Documents/Standards De-

velopment area and in the SEG-Y discussion forum.

Other ongoing activities include the update of the SPS standard, development of an EM data standard, and two workgroups focused on creating recommendations for seismic data storage and exchange. Those interested in joining any of the teams may submit an application at [www.seg.org/tsc](http://www.seg.org/tsc).

TSC cooperated with the International Association of Oil and Gas Producers (OGP) on the development of the new positioning standards, and the new P1/11, P2/11, and P6/11 positioning standards are now officially ratified and published. The OGP Geomatics Committee held several meetings and courses on the new standards over the last year, and it is now seeing uptake in the industry. The new positioning standards are used as input to the development of the updated SEG-Y and SPS standards to ensure compatibility with the new information.

Energistics launched a new Standards Leadership Council initiative over the last year focused on cooperation and coordination of the standards development in the industry. The primary goal is to avoid duplicate or conflicting standards and identify opportunities for synergies where possible. Jill Lewis represented TSC at several of the meetings. More information on the initiative can be found at [www.energistics.org](http://www.energistics.org).

Two official open Technical Standards Committee meetings were arranged during the past year, one at the 2012 Annual Meeting, and one at the EAGE conference in June 2013. The committee plans to continue with two official meetings next year to speed up format development. The minutes and presentations from these meetings plus information on other committee work are publicly available at [www.seg.org/tsc](http://www.seg.org/tsc).

During the forthcoming year, the work on updating the SEG-Y and SPS formats is expected to be major focus points for the committee.

## Tellers

### **Kim Guyer, chair**

The ballot tabulation for the membership vote on the proposed Bylaws amendment to Article III, Section 4.b. as approved by the SEG Council at its November 2012 meeting was completed in February. Survey & Ballot Systems, Inc. (SBS) was contracted to conduct the ballot mailing and tabulation. Official paper ballots were sent 3 December 2012 to 8261 Active members eligible to vote. All votes were received, tabulated, and verified by SBS and results were submitted to the SEG business office. The vote had a participation rate of 21.2%. The final results include 1753 returned ballots received on or before 31 January 2013. The SEG Tellers Committee verified the count provided by SBS and the Bylaws amendment was approved by a majority vote of the Active SEG membership.

SBS also was contracted to conduct the SEG election for the new Board of Directors. SBS designed and distributed an elec-

tronic ballot and a paper ballot to each voting member. SBS received, tabulated, and verified the votes, and submitted the results to the SEG business office. The SEG Tellers Committee verified the count provided by SBS.

Official ballots were sent out 4 June 2013 to 7853 Active members eligible to vote in this year's election. In addition to receiving a paper ballot, 7636 eligible voters received e-mail from SBS with personalized login information and specific instructions to vote electronically if they preferred.

The annual election had a participation rate of 33.2%. The final results include 2,605 returned ballots received on or before 31 July. Of those ballots, 2120 were submitted via the Worldwide Web voting and 485 paper ballots were returned by mail.

The election results are as follows:

### **2013–2014 SEG Board of Directors**

President-elect: Christopher Liner

Second vice president: Robert Stewart

Editor: Evert Slob

Directors at large: Gustavo Carstens and Guillaume Cambois

### **District Representatives**

District 1: Paul Singer

District 11: Huazhong Wang

District 12: Koji Kashihara

## ***The Leading Edge Editorial Board***

### **Bill Goodway, chair**

*The Leading Edge* continues to be one of the most popular semitechnical publications in geophysics providing an outlet for nonrigorous, educationally enlightening articles with minimal theory emphasizing new practical applications. Due to the high quality of the articles that cover a wide range of geoscience disciplines, *TLE* reaches a large audience, including most of the SEG membership around the world. This success can be attributed primarily to the unmatched efficiency, energy, organization, imagination, and knowledgeable experience of Editor Dean Clark. In addition to Dean, *TLE* would not be possible without the considerable support and assistance from the Tulsa team consisting of Associate Editor Jenny Kucera, Assistant Editor Spring Harris, Publications Director Ted Bakamjian, Graphic Design Manager Kathy Gamble, Senior Graphic Designer Tonia Gist, Graphic Designer Jill Park, and Advertising Coordinator Mel Buckner.

Beyond the support of the SEG staff, *TLE* is managed by a dedicated group of volunteers who form the editorial board on which I currently serve as chair. For 2013 the Editorial Board consists of Chris Liner (Special Editor), Greg Baker, Shuki Ronen, Tad Smith, Carlos Torres-Verdin, and Ezequiel Gonzalez.

The strict, unforgiving, monthly publication deadlines for *TLE* submissions require considerable forward planning and orga-

nization for soliciting, reviewing, editing, and final proofing of articles. I have found that on occasion the timeframe of this process has been nerve-rackingly short, but with the excellent technical support and coordination of the editorial board, my term has been relatively easy, for which I must thank my fellow editors.

However, the possibility of not receiving a sufficient number of high-quality papers for any given special section does bring up the question of how to best choose topics that are novel and of wide interest. This task is decided through a series of face-to-face and Web-based board meetings where our dilemma is to come up with new technical areas of interest with a sufficient critical mass of knowledgeable authors willing to write up their investigations and results. Generally, throughout the past few years of my term, we have managed to successfully balance these conflicting requirements with maybe the exception of the November 2012 edition that was originally slotted for applications of pore pressure but had to be changed to an additional special section on passive seismic and microseismic to accommodate an inundation of papers.

The special sections for 2013 are: Applications and challenges in shear-wave exploration, Chronostratigraphy, Urban geophysics, Marine and offshore technology, Arctic/ATC, Nonreflection seismic and inversion of surface and guided waves, Hydrogeophysics, Gravity and potential fields, Full waveform inversion, Geohazards, Offshore and onshore broadband seismology, and Unconventional resources technology.

The award for Best Paper published in *TLE* in 2012 went to Grechka and Zhao for “Microseismic interferometry.” An Honorable mention was awarded to Vernik and Kachanov for “On some controversial issues in rock physics.”

Despite some minor challenges, *TLE* continues to succeed in its mission to widely disseminate new practical relatively nontechnical popular geophysical knowledge to a broad audience within and outside the SEG membership. I have thoroughly enjoyed and have benefited considerably in my continuing geophysical quest for knowledge and education from my term on the editorial board. For this I thank SEG, my coeditors, and all the SEG staff who have made this possible. What a great team to work with!

## Translations

### Long Jin, chair

The Translations Committee (TC) continued its traditional activity of reviewing and recommending books for translation from foreign languages and subsequent publication by SEG. Committee members are Long Jin (chair), Yunye Li (vice chair), Wei Liu, Sergey Fomel, Ilya Tsvankin, Vladimir Grechka, Chaoshun Hu, Eike Rietsch, Tadeusz J. Ulrych, Edson Sampaio, Gabriel Perez, Louise Pellerin, Sergio Chavez-Perez, Juan C. Soldo, and Toshifumi Matsuoka.

Committee activities since last year’s report was published included the following:

- A team of translators led by Hua-wei Zhou have completed the first version of an English translation of Qing-zhong Li’s book on high-resolution seismic exploration, originally published in Chinese. The committee appointed Timothy Barker and Jeff Mestayer as volume editors. Through close collaboration between volume editors and translators coordinated by TC, this translated book is close to publication.
- A German book (a biography of Ludger Mintrop by Gerhard Keppner) is under review.
- A proposal to translate, from Portuguese to English, a two-volume book on the geology of the state of Bahia (Brazil) is under review.
- The committee is assisting the SEG Beijing Office in translating and reformatting the MOA of the 2014 Beijing Geophysical Conference.

## SEG Women’s Network

### Nancy House, chair

The Women’s Network Committee (WNC) has existed as a standing committee since 2011. Since its inception, there have been two breakfast events at the Annual Meeting, and several women have been nominated for well-deserved SEG awards. As of June 2013, there are three women on the SEG Board and a woman candidate for SEG president.

The mission of the Women’s Network is to:

- promote greater participation and leadership of women in geophysics worldwide
- promote greater female engagement in SEG activities on a local, regional, and global scale
- create a community for mutual support among female SEG members
- enhance recruiting of women to the profession and mentoring of young female professionals
- envision and recommend strategies to retain women in the industry
- elevate awareness of the value a diverse workforce brings to business.

The WNC’s second organized event was a breakfast meeting at the Annual Meeting on 3 November 2012. Marcia McNutt, director of the U.S. Geological Survey, was the speaker. Her talk was well received. Enough sponsorship was received to make the event free to all who registered. After the breakfast presentation, the large student turnout was leveraged to lead discussion groups focusing on (1) those aspects of Earth science (and other sciences) that keep women motivated and (2) work-life balance. At the 2013 Annual Meeting in Houston, Sophie Zurquiyah, senior vice president of geology, geophysics, and reservoir at CGG, will be the guest speaker. She has worked in a variety of positions—as a scientist, manager, and in human resources—and shares a passion for attracting and retaining women in our industry.

The committee holds monthly conference calls and keeps members engaged by submitting nominations for awards, thinking of ways to engage more of the membership, and sharing discussions on provocative books and women. An example was the group collaborating to gather endorsements for the nomination of Alison Malcolm for the J. Clarence Karcher Award in 2012 and nomination of Manika Prasad for Honorary Membership. This year, three women (Chris Krohn, Elsa Jaimes, and Edith Miller) serve as directors at large on the SEG Board of Directors. Anna Shaughnessy was nominated for SEG president with support from WNC.

One goal of the committee is to gather data on the status of women in the industry. In order to learn more about factors that impact career decisions of energy and petroleum industry professionals including work-life balance, the WNC created a list of survey questions. The survey, approved by the SEG Board, was sent to SEG members in May 2013. The results of this type of survey benefit women and dual-career couples because the data can refocus discussions with management about individual group behavior. The WNC continues to promote online presence through social media such as LinkedIn and Facebook; however, the activity needs to be kept alive through continuing additions. Currently, discussions are mostly carried out through e-mail.

Another effort initiated by the WNC is the enstatement of the SEG Educator Award. This award will honor individuals for excellence in geophysics education. The new award fits in well with SEG's goals, and is especially relevant in the current environment of crew change and increasing educational needs. The proposal also was endorsed by the SEG Honors and Awards Committee and has been approved by the SEG Board of Directors, and the first Educator Award(s) will be presented at the 2014 Annual Meeting.

## Youth Education

### Gary Robinson, chair

The Youth Education Committee focuses upon sharing our passion for geosciences with youth and educators, inspiring students to pursue careers in geoscience, and providing resources for geoscientists and educators to use in educating youth about geoscience.

Eight members of the committee met at the 2012 Annual Meeting. Lisa Buckner conducted the meeting, at which committee members described their efforts during the year in youth education and outreach, brainstormed ideas, and decided to concentrate committee efforts on the following activities:

1. Complete work on a "magic suitcase" containing educational materials that could be used for presentations to youth.
2. Draft a letter on youth education and outreach to the SEG membership, to be submitted to *The Leading Edge* and posted on the SEG Web site.

Members participated in the student activities at the 2012 Annual Meeting, acting as chaperones for groups of high-school students.

Items to be included in the "magic suitcase" are the following:

- slinky (to demonstrate wave motion)
- world map showing topography and bathymetry (to show plate boundaries)
- colored paper (with arrows to show motion direction) and table salt (for plate tectonics demonstrations)
- rock samples (sandstone, limestone, shale to show reservoir rock types)
- jars with different sizes of spheres (BB, ball bearing, marble, and golf ball size to demonstrate porosity) and sponge (to demonstrate a "solid" that holds fluids)
- the "Tootsie Pop" Earth model
- AGI "Why Earth Science?" DVD
- *Earth is Calling* video
- geophysics career pamphlets
- SEG Seismic Cube Kit
- Interpreted seismic line
- PDF of old acquisition crew (includes gravity meter, aeromag plane, dynamite)
- geophone (cutaway to show inside how it works)
- geophone with computer plug-in lead to use with laptop "What do Sounds Look Like?" activity (include instructions for downloading free software)
- magnets, iron filings, paper, and a compass (to demonstrate Earth's magnetic field)

Committee members are actively involved in youth education at the local level, making presentations to schools, scout groups, and other youth activities, as well as participating in the judging of the International Science and Engineering Fair. Committee members will again participate in the student activities at the 2013 Annual Meeting.

# REPORTS OF THE REPRESENTATIVES

## **AGI Environmental Geoscience Advisory**

### **Azra Tutuncu, representative**

The Environmental Geoscience Advisory Committee (EGAC) helps to identify and to focus on the highest-priority environmental information needs and issues best addressed by the geosciences community. The activities of the AGI Environmental Affairs Program are guided by the EGAC. EGAC members represent American Geosciences Institute Member Societies and government and academic institutions, and include individual scientists with appropriate expertise and interest. Approximately 35 geoscientists are actively involved in various aspects of environmental research and industrial applications, and the EGAC provides a forum for developing broad consensus concerning the role of geosciences in key environmental issues.

The Environmental Awareness Series, one of the key projects in AGI's Environmental Affairs program, covers significant themes of environmental and social concern and demonstrates the complexity and interrelation of the natural systems. Ten booklets have been published, and several other booklets are in development. The latest book in this series, *Remote Sensing and the Environment*, has been published in partnership with the U.S. Geological Survey, AmericaView, and the Association for Photogrammetry and Remote Sensing. In addition, teachers are provided access to PowerPoint presentations (based on the publication of the Mining, Water, Soils, and Karst Environmental Awareness Series).

Another publication series by AGI is EarthNotes that aims to increase public awareness of the vital role the geosciences play in society's use of resources and interactions with the environment. EarthNotes are stand-alone, short illustrative reports that contain summaries of interesting and timely information about Earth and Earth scientists. The reports are contributed by knowledgeable Earth scientists on a wide range of topics, from understanding the health risks associated with wildfire ash to explaining how deep-water oil drilling is accomplished. The International Medical Geology Association is the first AGI Member Society to summarize its activities in an EarthNote. An EarthNote for the Society of Exploration Geophysicists is being prepared. Since last year's report, in addition to the International Medical Geology Association note, two more EarthNotes have been published on Environmental Issues Related to Coalbed Methane Production and Critical Minerals. SEG members can access EarthNotes at <http://www.agiweb.org/environment/earthnotes/>.

What's New is a monthly newsletter compiling timely environment-related information including legislation status, remediation technology, and in some cases scholarship and job opportunities. It is sent by e-mail to anyone interested and is available online at the Environmental Affairs home page (<http://www.agiweb.org/environment/index.html>).

EGAC Committee members were consulted during the organization of the special session "Environmental Challenges of the Hydraulic Fracturing" at SEG's 2012 Annual Meeting. Moreover, AGI Executive Director Patrick Leahy and SEG AGI EGAC representative Azra N. Tutuncu presented at the 2nd UNGI/ARMA Unconventional Geomechanics Workshop on Geomechanics Solutions for Environmental and Technical Challenges in Unconventional Resources, endorsed by SEG, in June 2012. Tutuncu also spoke at the 3rd Unconventional Geomechanics Workshop on Geomechanics Solutions for Environmental and Technical Challenges in Unconventional Resources in June 2013. Tutuncu is also preparing a booklet and an EarthNote on what is unique about shale reservoirs and the related impact of hydraulic fracturing on the environment.

## **American Geosciences Institute (AGI)**

### **Louise Pellerin, representative**

In 2013, AGI turned 65. The spring member meeting was held in Pittsburgh in conjunction with the AAPG Convention.

The American Geosciences Institute (AGI) is creating a new Center for Geoscience Education and Public Understanding, with initial funding from Royal Dutch Shell. The center will provide a Web-based hub for essential geoscience educational material, current information on critical geoscience issues, and new educational tools. The center will house AGI's new Critical Issues Program (CIP), which will be a conduit for delivering policy-relevant geoscience information on current and critical issues to policymakers and the public; a venue for forums and discussions between geoscientists, policymakers, and the public; and a source for training and administrative support for member societies and geoscientists interacting with the policy process.

The CIP has three major tasks:

- **Information:** provide Web-based access to accurate, topical, and understandable geoscience information on critical issues facing society
- **Communication:** create forums for communication between geoscientists, policymakers, and the public
- **Education and infrastructure:** provide training and per-

manent administrative support for geoscientists engaging with policymakers

Eight issues have been identified in “Critical Needs for the 21st Century: The Role of the Geosciences”:

- **Energy and Climate Change:** Ensure reliable energy supplies in an increasingly carbon-constrained world
- **Water:** Provide sufficient supplies of water
- **Oceans, Atmosphere, and Space:** Sustain ocean, atmosphere, and space resources
- **Waste Treatment and Disposal:** Manage waste to maintain a healthy environment
- **Natural Hazards:** Mitigate risk and build resilience from natural and human-made hazards
- **Infrastructure Modernization:** Improve and build needed infrastructure that couples with and uses Earth resources while integrating new technologies
- **Raw Materials:** Ensure reliable supplies of raw materials
- **Geoscience Workforce and Education:** Inform the public and train the geosciences workforce to understand Earth processes and address these critical needs

The AGI Ad Hoc Academic Classification Committee has examined the overall issue of geoscience accreditation, focusing on classification, not accreditation, with the motivation to provide clarity among students enrolled in geoscience programs in addition to recruiters, employers, and licensing agencies. Classification identifies the nature of any given geoscience degree and its applicability for graduate school or employment.

In an effort to keep SEG members abreast of AGI activities, updates will be posted periodically on the SEG Web site and in *TLE*.

## Arctic Technology Conference

### Bill Goodway, chair

The Arctic oil industry is dominated by multinationals and majors, state-owned oil companies, large engineering and shipping companies, cold ocean research groups, northern native enterprises, and a handful of geophysical and drilling operators with Arctic expertise. Their latest innovations, successes, and challenges are regularly presented at the Arctic Technology Conference (ATC) that takes place in Houston. This is now a biannual OTC event, managed by the AAPG and also sponsored by SEG. The second Arctic Technology Conference (ATC) was held in December 2012 at the George R. Brown Convention Center and assembled more than 1200 attendees from 26 countries for a world-class event under the theme “Challenges for Today, Opportunities for Tomorrow.” Alongside a strong U.S. presence, countries with large representation were, in descending order, Canada, United Kingdom, Norway, Netherlands, Russian Federation, Finland, Japan, France, Sweden, and Denmark. According to the conference Web site: “ATC is a highly focused, international conference that addresses the cutting-edge technologies and innovative practices needed for exploration and production in the Arctic.” While the conference is weighted to-

ward engineering and technology advances in Arctic drilling, naval architecture, logistics, government monitoring, developing and producing oil and gas resources, a significant part of the conference is dedicated to topics in exploration geophysics and Arctic geology.

SEG members and affiliated companies contributed significantly to the 2012 Arctic Technology Conference events with a special “Arctic Geophysics” session, several integrated geology and geophysics posters and papers, two special breakfast presentations, and numerous exhibits by geophysical contractors. The “Arctic geophysics: Seismic acquisition, processing, and interpretation” session included papers on innovative 2D and 3D marine acquisition in cold ocean/ice-infested waters by Cato Rypdal et al. of PGS, Shawn Trice of ION Geophysical, and Phil Fontana of Polarcus. A paper describing land and transitional-zone acquisition in the Cook Inlet was delivered by Mike Yates (coauthored by S. Adiletta) of Apache. Gilles Bellefleur and colleagues from NRCAN presented a paper on imaging and characterizing gas hydrates under the permafrost in the Mackenzie Delta. Allan Châtenay of Explor presented “Arctic onshore seismic data acquisition with complex logistics in a sensitive ecosystem,” and Michael Enachescu (coauthored with Fred Kierulf) presented “Best practice seismic acquisition onshore in the Canadian Arctic.”

In addition, two well-received breakfast talks were presented by Bernard Coakley (Geophysical Institute, University of Alaska) on “Rolling the dice on the ice—Acquiring underway geophysical data in the Arctic Ocean,” and by David C. Mosher (research scientist, Geological Survey of Canada) on “A tale of two icebreakers: Geophysical surveying in the high Arctic.” Both presentations contained examples of seismic, potential fields, and water-bottom methods for mapping the little-known Arctic slope and deep-water basins as well as Arctic areas with disputed territorial claims. Material from these invited papers was also included in the “Arctic frontier basins: Resource potential” session where the two speakers presented “The Chukchi Edges project—Developing geophysical constraints on the history of the Amerasian Basin of the Arctic Ocean (coauthors B. Coakley and I. Ilhan) and “Canada basin revealed” (D. Mosher et al.). Within the same session, Stoupakova et al. showed regional seismic sections used to interpret the tectonic structural and stratigraphic setting of Russia’s Arctic offshore basins. One of the inaugural 2012 “Spotlight on Arctic Technology Awards” was given to ION Geophysical for its under-ice towed marine streamer. This award recognizes innovative new products that provide significant impact for Arctic exploration and production. The award was accepted on behalf of ION by Shawn Rice and Joe Gagliardi.

Without a doubt, the Arctic oil industry is confronted with many challenges in the fragile northern environment, but numerous groups, including the geophysical industry and dedicated SEG members are working to develop environmentally safe exploration technologies adaptable to northern conditions to discover and map new resources. The next Arctic Technology

Conference will be held 10–12 February 2014 in Houston, and once more the International geophysical community will be asked to showcase its activity in the northern onshore and offshore basins.

## **IPTC Management**

**Joseph Reilly, board member**

**Philippe Doyen, board member**

The International Petroleum Technology Conference (IPTC) is a multidisciplinary international oil and gas technical conference and exhibition. The event rotates annually between the Middle East and Asia. IPTC has become one of the world's largest professional-society-based oil and gas conferences with sponsorship from the American Association of Petroleum Geologists (AAPG), the European Association of Geoscientists and Engineers (EAGE), the Society of Exploration Geophysicists (SEG), and the Society of Petroleum Engineers (SPE). The synergies among these four leading professional societies result in the most comprehensive, multidisciplinary technical program among oil and gas conferences worldwide.

The 6th International Petroleum Technology Conference (IPTC), hosted by China National Petroleum Corporation, and cohosted by ExxonMobil, was held 26–28 March 2013 at the Beijing International Convention Center, Beijing, China. This successful event, the first to be held in China, attracted more than 4,100 attendees representing 65 countries and more than 600 organizations.

The opening ceremony featured remarks by Zhou Jiping, president, China National Petroleum Corporation, and vice chairman and president, PetroChina Company Limited; Mark W. Albers, senior vice president, ExxonMobil Corporation; and Mahmoud M. Abdulbaqi, IPTC Board chairman and chairman, Argas. During his remarks, Zhou noted that, "IPTC has already become a highly influential conference in the oil and gas industry, despite its relatively short history." Honored guests included SEG President David Monk.

Under the conference theme, "Challenging Technology and Economic Limits to Meet the Global Energy Demand," the 6th IPTC introduced several new and unique components. The conference featured the largest technical program in the history of the event with more than 550 papers presented in 70 technical sessions with up to 10 sessions held concurrently. 355 papers were presented in 45 interactive e-Poster stations allowing delegates a unique ability to browse the posters at their own time.

The conference also included, for the first time, both a CEO Plenary Session and an Executive Plenary Session. Both focused on the need for sustained interaction between national and international oil companies and service companies, "In the industry's current environment, it is impossible for any company to go it alone," said Peter Coleman, CEO of Woodside Energy. It was also fitting that this is the first IPTC event held in China, home

to 1.6 billion people. "China's growth in oil demand is offsetting the decline in demand from the United States and Europe," said Khalid Al-Falih, CEO and president of Saudi Aramco. In order to meet this shifting demand, partnerships between companies and governments become even more crucial as financial capability and technical expertise must be shared, according to five chief executive officers at the CEO Plenary Session.

A highlight of the conference was the IPTC Excellence in Project Integration Award. This year a record-setting 16 nominations were submitted representing projects in 12 countries. During the Awards Dinner, it was announced that Total's submission for the Pazflor offshore development, a fully integrated project spanning the entire value chain from exploration to production, was given the prestigious award. The Total project team was recognized for having made "significant and unique achievements in managing and directing an integrated oil or gas project from discovery to delivery."

Several programs targeting a younger audience, such as the Young Professionals Workshop and the Education Week, were held in conjunction with IPTC. The highly interactive Young Professionals Workshop, a mix of presentations by industry executives and other young professionals, focused on the future of the industry and provided networking opportunities. Targeting an even younger group, the Education Week is designed to give an insight into the oil and gas industry to the best final-year university students from around the world and to allow them to interact directly with oil and gas professionals. This year, 101 students from 27 countries worked together on joint technical projects which ranged from coalbed methane technology and development to intelligent wells and intelligent fields. This marks the fourth time this activity has been held in conjunction with IPTC, and industry leaders recognize it as an important tool to encourage bright young minds to consider a career in the oil and gas industry.

The exhibition featured 40 exhibitors from 19 countries in 2600 square meters of exhibition space. More than 1700 visitors shared the floor where companies displayed new products, services, and the latest innovations for applications such as unconventional reservoirs, and high-pressure and high-temperature wells and also displayed socially responsible development concepts.

During the course of the year, the IPTC Board of Directors has been working on two important projects:

- Development of a procedures manual which includes both operational matters and conference organization guidelines. This was required to ensure good business practice and that IPTC staff and volunteers had clear instructions regarding the organization of the conference program.
- Ownership distribution: A subcommittee has been working to change the language of the ownership distribution such that "If all sponsoring societies unanimously agree, the IPTC Board will move to not implement a revision to the ownership distribution, as stated in the membership agree-

ment and maintain the current ownership distribution.” This effort was initiated in response to the failure of the geoscience societies to generate the participation levels defined in the membership agreement.

In addition, SEG submitted to the Board proposed changes to the student program which would allow the geoscience societies to be better integrated into the program.

The IPTC Board of Directors meeting was held 29 March 2013 in Hong Kong. All proposed changes were approved and shall be incorporated into future updates of the Procedures Manual and associated agreements.

Planned future IPTC meetings include the following:

*7th IPTC 20–22 January 2014 in Doha, Qatar.* The host for this event is Qatar Petroleum, with cohost ExxonMobil. The program committee met in Doha 29–30 May 2013 to develop a program under the theme “Unlocking Energy through Innovation, Technology, and Capability.” More than 1800 abstracts were received for this conference and all event planning is proceeding well.

*8th IPTC 10–12 December 2014 in Kuala Lumpur, Malaysia.* The host for this event is PETRONAS, with cohosts Shell and Schlumberger.

*9th IPTC December 2015 in Doha, Qatar.* The host for this event is Qatar Petroleum, with cohost Shell.

*10th IPTC 2016 in Bangkok, Thailand.* The host for this event is PTTEP.

*11th IPTC December 2017 in Doha, Qatar.* The host for this event is Qatar Petroleum, with cohost Total (nominated).

Statistics prepared by IPTC indicate that SEG continues to struggle in meeting its target attendance. It is strongly recommended that SEG develop an efficient strategy to attract members to volunteer for the subcommittees, attend, and present papers at future IPTC events.

## **Joint Committee On Reserves Evaluator Training**

**Fred Aminzadeh, representative**

**Andy Clifford, representative**

**Don Caldwell, representative**

On 15–16 October 2010, the SEG Executive Committee voted to accept an invitation for SEG to become a member of the Joint Committee on Reserves Evaluator Training (JCRET). JCRET was started in 2007 by four sponsors: Society of Petroleum Engineers (SPE); American Association of Petroleum Geologists (AAPG); Society of Petroleum Evaluation Engineers (SPEE); and World Petroleum Council (WPC). SEG is now the fifth sponsor.

JCRET was originally formed in response to a belief in the oil and gas industry that reserves evaluators were going to be

required to be licensed or accredited by government entities; hence, there would be a need for formal, certified continuing education courses for which JCRET would be the quality-control group. This licensing/certification requirement by government regulatory agencies has not materialized to date. Consequently, JCRET has evolved to an intersociety group supporting the training of reserves evaluators as a self-directed, voluntary activity rather than as a requirement for government licensing.

Much of the past year has been devoted to discussing the training material from the five societies. The various technical skills required for expert reserves evaluation include knowledge of reserves and resources definitions, recommended geological and engineering evaluation practices, and ethics. SEG representatives to JCRET have assumed the responsibility to prepare training material on geophysical aspects of reserves estimation and certification. The discussion has produced agreement on the following actions:

1. JCRET will peer-review and approve courses related to reserves/resources estimation and reporting and will list the approved courses on its Web site ([www.jcret.org](http://www.jcret.org)).
2. JCRET will serve as a clearinghouse for reserves evaluator training by listing all relevant courses on its Web site regardless of whether the provider of the course is interested in a peer-review by JCRET.
3. JCRET will identify gaps in training where no suitable course is currently offered to evaluators and then encourage the appropriate sponsoring societies to develop a relevant course to overcome the deficiency. In this regard, the SEG representatives have noted that there is no JCRET-approved course on how to use 3D and 4D seismic data and other geophysical data in structured reserves evaluation and have encouraged the SEG Oil and Gas Reserves Committee and SEG Continuing Education Committee to foster the development of a new SEG course on this subject. Another area of concern to SEG is in the use of geophysical methods to evaluate reserves in unconventional reservoirs (i.e., shale gas).
4. If requested by the sponsoring societies, JCRET will provide intersociety feedback on single-organization events (such as workshops on the Petroleum Resources Management System) to maintain joint organizational consistency.

SEG representatives to JCRET will continue their effort to prepare suitable course(s).

## **NAPE Advisory**

**Allen Gilmer, representative**

The first North American Prospect Expo (NAPE) was held in 1993 in a hotel in the Galleria area in Houston. Originally, the American Association of Petroleum Landmen (AAPL) was the sole owner. In 1995 the Independent Petroleum Association of America (IPAA) came in as a partner. NAPE grew, and moved to its location in the George R. Brown Convention

Center in downtown Houston in 1998. The Society of Exploration Geophysicists (SEG) and the American Association of Petroleum Geologists (AAPG) joined as partners in 2004. The first summer NAPE, again at the George R. Brown Convention Center in Houston, was held in 2005. The singular focus of NAPE conferences has been the deal, the prospect, and the business, with advancing technology being a second priority.

Winter NAPE is the hallmark event, with more than 1600 booths and 16,000 attendees. Although Summer NAPE is still significant, attendance is about half that amount. Attendance does fluctuate through the years depending on the state of the oil and gas industry. Through the years, the NAPE format has evolved to a “business” conference preceding the Expo itself. For Winter NAPE, there is also an International Expo preceding the business conference.

NAPE’s recent focus has been on adding regional NAPEs to serve audiences not fully served by Winter and Summer NAPE. The first regional NAPE, NAPE East, occurred during FY13, in Pittsburgh in April 2013. Soon thereafter NAPE announced its commitment to the second regional NAPE, NAPE Rockies, scheduled 11–13 December 2013 in Denver. It should be noted that NAPE already has identified additional potential regional NAPEs.

#### **NAPE Schedule for FY13 and FY14**

- Summer NAPE 2012, 22–24 August 2012, Houston
- Winter NAPE 2013, 5–8 February 2013, Houston
- NAPE East 2013, 10–12 April 2013, Pittsburgh
- Summer NAPE 2013, 14–16 August 2013, Houston
- NAPE Rockies 2013, 11–13 December 2013, Denver
- Winter NAPE 2014, February 2014, Houston
- NAPE East 2014, April 2014, Pittsburgh

#### **NAPE Governance and Management**

NAPE is a limited partnership with AAPL as the general partner. The partnership agreement outlines a nine-person Advisory Committee with each partner appointing members according to its ownership interest. SEG has one appointee. Per the agreement, the Advisory Committee shall (1) review (and later approve) the budget and (2) provide advice. The Advisory Committee’s recent focus has been on attendance and geographic expansion.

Within the last couple of years, AAPL changed the manner in which it manages and operates NAPE. Industry perception is that the change is off to a good start in alleviating both legitimate and less-than-legitimate concerns about how NAPE was handling both exhibitors and attendees.

The Advisory Committee met twice during FY13, preceding Summer NAPE 2012 and during Winter NAPE 2013. The nearly singular focus was on regional expansion, both from a budgetary/financial standpoint and from an overall attendance-growth perspective. In developing the regional NAPEs, NAPE acknowledges that there is a risk that regional NAPEs may

decrease Summer NAPE participation, but NAPE anticipates that the increases from the regional NAPEs will more than make up for any decreases in Summer NAPE. There has been discussion that Summer NAPE could ultimately be rebranded as NAPE Gulf Coast. Since Winter NAPE is the flagship event, there is minimal concern that its participation will be negatively affected by the regional NAPEs.

With the additional NAPE meetings, partners have expressed concern about scheduling proximity to their respective annual meetings and the close coordination required to minimize future conflicts. For now, the primary thrust for all partners is alerting their membership and audience to the presence of the new regional NAPEs. Advisory Committee input will be critical for NAPE as results of the regional NAPEs come in.

#### **OTC Board of Directors**

##### **Wafik B. Beydoun, representative**

**F**ounded in 1969, the Offshore Technology Conference (OTC) is the world’s foremost event for the development of offshore resources in the fields of drilling, exploration, production, and environmental protection. As a sponsoring organization since 1969, SEG is entitled to appoint one of the 13 members to the OTC board of directors. SEG and its members accrue tangible benefits through participation in the OTC events—the end of this report provides a background of OTC and its relationship to SEG.

Starting in 2011, OTC has launched major initiatives to be more global and closer to regional interests. In addition to its annual event held in Houston, it has now expanded with three new events: Arctic Technology Conference (ATC) held every 12–18 months; OTC Brasil (OTCB) held every two years; and OTC Asia (OTCA) also intended to be a biennial event, with the inaugural event in March 2014 in Kuala Lumpur. To fully benefit from these new initiatives, the OTC Board of Directors is currently revisiting the OTC governance and bylaws. Several opportunities are already available for OTC Sponsoring Organizations (such as SEG) to enhance their engagement and involvement in these new OTC events. SEG volunteers can of course attend these events, submit an abstract for presentation, and/or join SEG Program subcommittees enabling them to help shape the technical content of the events. Indeed, for each of these new events, OTC is soliciting its Sponsoring Organizations to provide more volunteers for the Program Committee and a representative on the Standing Committee. The recruitment of an SEG intersociety collaboration manager as of summer 2012 (Lance Cole) has greatly increased SEG’s ability to address such OTC requests and was successful in identifying and providing effective volunteers.

The rest of this report highlights the status of these four OTC conferences (OTC Houston, OTCB, ATC, and OTCA) as of May 2013. Other accounts in this Annual Report provide details on the role of SEG and its members in OTC Houston and ATC, thus helping make OTC the success that it is.

## **OTC Houston**

Experts from the offshore energy industry around the world came together 6–9 May for the 2013 Offshore Technology Conference at Reliant Park in Houston. Attendance at the conference reached a 30-year high of 104,800, the second-highest in show history and up 17% from last year. Attendance surpassed the 2012 total of 89,400 and the sold-out exhibition was the largest in show history at 652,185 ft<sup>2</sup>, up from 641,350 ft<sup>2</sup> in 2012. The event had 2728 companies representing 40 countries, including 244 new exhibitors in 2013. International companies made up 39% of exhibitors.

This year's event featured nine panel sessions, 29 executive keynote presentations at luncheons and breakfasts, and 298 technical papers. Speakers from major IOCs, NOCs, and independent operators presented their views on the current challenges and future directions of the industry. OTC's Spotlight on New Technology recognized 15 technologies for their innovation in allowing the industry to produce offshore resources. Governors (Texas, Alabama, Alaska, Mississippi, North Carolina, and South Carolina) from the Outer Continental Shelf Governors Coalition participated on a panel discussion on offshore energy development and the need for improved cooperation between the states and the U.S. federal government. U.S. Secretary of the Interior Sally Jewell toured the exhibition floor and held a press conference where she discussed her commitment to work with industry leaders to ensure safe and environmentally responsible offshore oil and gas operations. Energy ministers and national oil company senior executives participated on a panel where they shared their perspectives on how the industry and its partnership models should adjust to address future supply challenges and what role companies and governments should play to shape the energy future. Norway's Crown Prince Haakon and his wife, the Crown Princess Mette-Marit, attended the Annual OTC Dinner on Sunday to celebrate the 40th anniversary of Norway's participation in OTC. The royal couple toured the exhibition floor where more than 60 Norwegian companies were part of the Norwegian Pavilion. More than 100 Houston-area classroom teachers and 200 students attended the Energy Education Institute where teachers learned how to teach scientific concepts of energy and its importance in a fun and exciting way. Participating students saw firsthand the exciting opportunities the oil and gas industry can offer.

The Annual OTC Dinner was attended by more than 1000 industry leaders and conference attendees and raised US\$250,000 for the Offshore Energy Center. OTC also presented its 2013 Distinguished Achievement Award to Ken Arnold; OTC Heritage Awards to James Brill and Dendy Sloan; and the Distinguished Achievement Award for Companies, Organizations, or Institutions to Total's Pazflor deep offshore development.

Below is a chronological list of OTC events scheduled through May 2014:

### **29–31 October 2013 in Rio de Janeiro: OTC Brasil**

OTC Brasil (OTCB) is one of the world's foremost events for the development of offshore resources in the fields of drilling, exploration, production, and environmental protection. It is organized by the Offshore Technology Conference and Instituto Brasileiro de Petróleo, Gás e Biocombustíveis (IBP). OTC Brasil offers an excellent venue to tap into Brazil's offshore development program. It will explore developments in offshore drilling and wells systems, floating structures, and advanced subsea production systems. SEG chairs the OTCB Oversight Committee. A package of activities is being organized during OTCB 2013 to facilitate the leadership of OTC sponsoring organizations (presidents and/or executive directors) to meet and discuss with their Brazilian sister societies. Stay tuned by visiting <http://www.otcbrasil.org/2013/>.

### **10–12 February 2014 in Houston: Arctic Technology Conference**

ATC will deliver a multidisciplinary program covering all aspects of Arctic activity.

### **25–28 March 2014 in Kuala Lumpur, Malaysia: OTC Asia**

OTC Asia brings the technologies and networking opportunities of the Offshore Technology Conference to Asia Pacific. The inaugural event will include expert speakers from around the world, cutting-edge tools and solutions, and knowledge sharing.

### **5–8 May 2014 in Houston: OTC Houston**

SEG is a sponsoring organization of the Offshore Technology Conference. The relationship dates to 1969 when SEG accepted an invitation to join with AIME and seven other engineering and scientific societies to establish OTC as an interdisciplinary meeting on technology related to offshore resources. As a sponsoring organization, SEG is entitled to appoint one of the 13 members to the OTC board of directors. To provide an idea of how interdisciplinary the OTC is, a list of the other 11 sponsoring organizations follows: AAPG; American Institute of Chemical Engineers; American Institute of Mining, Metallurgical, and Petroleum Engineers; American Society of Civil Engineers; Institute of Electrical and Electronics Engineers—Oceanic Engineering Society; International Petroleum Technology Institute (formerly ASME-PD); Marine Technology Society; Society for Mining, Metallurgy, and Exploration Inc.; Society of Naval Architects and Marine Engineers; Society of Petroleum Engineers; and The Minerals, Metals and Materials Society.

SEG and its members accrue several benefits through participation in the Offshore Technology Conference. First, it is an event where one can broaden her/his view of the technology and technical advances that are required to make the oil and gas industry what it is. Second, besides the big-time hardware that's on view and being discussed in technical sessions, there are strong reservoir engineering and geosciences technical sessions that are, without question, relevant to what most geoscientists

are working on today. Third, as with almost any well-attended industry meeting, it's a good place to network. Fourth, this meeting alone provides about 5% of SEG's total annual revenue.

## **OTC Technical Program**

### **Charles Knobloch, chair**

**F**ounded in 1969, OTC is the world's foremost event for the development of offshore resources in the fields of drilling, exploration, production, and environmental resources. This year marked the 44th year of OTC.

OTC ranks among the 200 largest trade shows held annually in the United States and is among the 10 largest meetings in terms of attendance. Attendance at the 2013 conference reached a 30-year high of 104,800, the second-highest in show history and up 17% from last year. Attendance surpassed the 2012 total of 89,400 and the sold-out exhibition was the largest in show history at 652,185 ft<sup>2</sup>, up from 641,350 ft<sup>2</sup> in 2012. The event had 2728 companies representing 40 countries, including 244 new exhibitors in 2013. International companies made up 39% of exhibitors.

"We had a terrific conference with deep and broad technical coverage, supported by excellent panels and executive keynote presentations," said Steve Balint, chair of OTC. "Technology is at the heart of the offshore industry, and it was all here on display at OTC 2013."

SEG is one of 12 sponsoring professional societies of the technical program. The technical program features four full days of presentations, in eight concurrent sessions, covering the latest and most important topics, technologies, and innovations in today's exploration and production industry.

The OTC/SEG subcommittee is proud of this year's SEG-sponsored geophysics technical sessions and industry-influencing events.

For 2013, SEG-sponsored geophysics technical panel and sessions included:

#### **"Active arena—China: Energy, technology, and industry"**

- **Moderators: Joseph M. Reilly, ExxonMobil and Board of Directors, IPTC; and Doreen Chin, Shell**

Since the turn of the century, China has clearly emerged as a major participant in the global energy industry—from meeting growing domestic needs to a global operator and provider of services. This Active arena session presented the views of several major Chinese corporations. The session began with introductory remarks from Xu Erwen, China Consul General in Houston. Topics included China's domestic energy needs and transition of energy sources; China as a global explorer and producer of hydrocarbons; China as a major global supplier of energy services and manufacturer of global technologies; and gaps, emerging solutions, and impacts on China. Slated speakers included: Xu Erwen, Shell; Yan Cunzhang, PetroChina; Zhang

Yond Jie, Sinopec International Petroleum Service Corporation; Yang Yun, China Offshore Oil Engineering Company; Dwayne Breaux, Wison Offshore and Marine; Wu Qiang, CSSC; and Muthu Chezhan, Rongsheng Offshore and Marine.

#### **"Fiber optics"**

- **Session chairs: Hani Elshahawi, Shell, and Rocco Detomo, Shell International E&P Company**

This session covered topics such as "In-well distributed fiber optic solutions for reservoir surveillance" by W. Berlang and J. Van Der Horst, Shell Global Solutions International; J. L. Lopez, Shell International E&P Company; and H. Potters, Shell Global Solutions International; "Reducing intervention in subsea wells with fiber optic technology: Deployments and results" by J. R. Lovell, Schlumberger; "Fiber-optic sensing is the technology of choice for permanent reservoir monitoring applications" by F. Eisenhower, P. Nash, J. Langhammer, and E. Austin, TGS; "Real-time subsea fiber-optic monitoring" by L. Forster, Intecsea; and D. E. Dria, Myden Energy Consulting; "Toward the next fiber-optic revolution and decision making in the oil and gas industry" by L. K. Cheng, M. Boering, and R. Braal, TNO; "Interwell communication as a means to detect a thief zone using DTS in Danish offshore well" by J. Davies, H. Van Dongen, Maersk Oil; and A. Oftedal and N. Kalia, Halliburton; and "Photonic sensing for the energy business: An integrated approach" by M. Yousefi, Photonic Sensing Solutions; J. Pozo, TNO; and H. Elshahawi, Shell.

#### **"Advances in subsalt geoscience"**

- **Session chairs: Paul Williamson, Total E&P; Charles Knobloch, Arnold, Knobloch & Saunders**

This session covered topics such as "Kaombo, from exploration toward development: A decade of progress in subsalt imaging" by V. Martin, A. Douillard, L. Lemaistre, V. Clerget, and C. Gereia, Total E&P; "Challenges in seismic imaging and reservoir characterization of presalt oilfields in offshore Brazil" by P. R. Johann, G. Camargo, R. Penna, and R. Dias, Petrobras; "How new data acquisition technique can complement full waveform inversion and lead to improved subsalt imaging" by D. Vigh and N. Moldoveanu, WesternGeco; "Incorporating attenuation in model building and imaging" by J. Bai, IN Geophysical; C. Wang, G. Chen, D. Yingst, M. Dolliazal, Z. Luo, R. Bloor, P. Farmer, and Z. Zhou, ION Geophysical; "Subsalt imaging using tilted orthorhombic reverse time migration" by T. Huang, S. Mothi, and P. McGill, CGGVeritas; "Depth uncertainty estimation for a subsalt development in the lower tertiary, deepwater Gulf of Mexico" by C. Hoelting, B. Almoughraby, M. Amaru, Chevron; R. Medina, J. Chao, Statoil; K. Osypov, and Y. Yang, WesternGeco; and "The Gulf of Mexico subsalt wells atlas: A comprehensive review and lessons learned" by S. T. Saleh, Drill-Sense International; K. Williams, Halliburton; and A. Rizvi, Hess.

### **“Panel: Value creation through global technology”**

- **Moderators: Charles Knobloch, Arnold, Knobloch & Saunders; and Robert Peterson, Roland Berger**

The innovation challenge posed by today’s oil and gas environment is at an all-time high. Ever-increasing pressure is placed on innovation and technical solutions to enable production of the next marginal barrel in technically difficult areas, including oil sands, harsh Arctic environments, and tight formations. This pressure comes from the combination of decreasing amounts of easy-to-extract resources, and the increasing, chronic shortage of skilled and experienced industry talent. Associated with the need for greater levels of innovation is an elevated risk of technology failure arising from inherent project risk, application of untested new methods for accelerating R&D results, and macroeconomic pressures regarding the value of technology. The panelists discussed the value drivers of innovation in the oil and gas space and current trends affecting the innovation landscape. Trends discussed include the changing nature of intellectual property treatment, the increasing role of out-of-industry players, new modes of collaboration, and the increased pursuit of areas of game-changing technology convergence. Panelists concluded with their views on how oil and gas players can best leverage these trends to maximize the rate of innovation and the level of business impact from sources of innovation. Panelists included: David Eyton, BP; Mark Little, General Electric; Gerald Schotman, Royal Dutch Shell; and Mario Ruscev, Baker Hughes.

### **“New frontiers in pore pressure prediction”**

- **Session chairs: Gene Sparkman, Lumina Geophysical, and Alan Huffman, SIGMA<sup>3</sup> Integrated Reservoir Solutions**

This session covered topics such as “Integrated pre-drill pore pressure and borehole stability prediction for prelude development” by K. S. Hansen, G. Wang, O. Adeleye, K. V. McNeil, B. A. Couzens-Schultz, K. Azbel, M. D. Sarfare, and U. A. Tare, Shell; “Recent advances in pore pressure prediction in complex geologic environments” by A. R. Huffman and J. Meyer, SIGMA<sup>3</sup> Integrated Reservoir Solutions; R. Gruenwald, J. Buitrago, J. Suarez, C. Diaz, J. Maria Munoz, and J. Dessay, Repsol Murzuq; “Seismic normal compaction trends and lithology” by D. Ebrom, Statoil; “Suprasalt 3D basin modeling and shallow borehole results” by D. F. Greeley, S. P. Mitchell, P. Jeanjean, C. Scherschel, and J. S. Hall, BP America; “A true shale compaction model with pore pressure prediction” by J. T. Krushin, consultant; “Importance of pressure management in CO<sub>2</sub> storage” by C. Hermanrud, Statoil and University of Bergen; O. Eiken, O. R. Hansen, H. Nordgaard Bolaas, T. Simmenes, G. Teige, H. Hansen, and S. Johansen, Statoil; and “Predicting subsalt pore pressure with  $V_p/V_s$ ” by S. Saleh, Drill-Sense International; K. Williams, Halliburton; and A. Rizvi, Hess.

### **“Adaptive thinking to create new opportunities”**

- **Session chairs: Cornelia Noel, Shell, and Charles Knobloch, Arnold, Knobloch & Saunders**

This session covered topics such as “Compact oxygen removal

for waterflood projects” by M. Brinn and S. T. Wylde, GasTran System; “Shape memory alloy: Low-cost manufacturing for the oil and gas industry” by P. Lewis and M. Vasquez, AeroFit; “Intelligent software agents: Sensor integration and response” by J. J. Kulesz and R. W. Lee, Oak Ridge National Laboratory; “Use of plasma-shell technology for concurrent control of chemical and microbial contaminants” by V. Kurtz, Imaging Systems Technology; “Smart fields management: In deepwater field: Experience and perspectives” by E. E. Udofia, O. Oni, A. S. Chaker, and O. Oghedegbe, Shell Nigeria Exploration and Production Company; “Design Challenges of the World’s Largest Slug Catcher” by L. C. Thronson, TECorp International; and “Fiber-based methane leak detection” by J. McFadden, RSL Fibersystems.

### **“Geoscience developments”**

- **Session chairs: Jim Kreamer, Wienman Geoscience, and Aurora Castelan, Schlumberger**

This session covered topics such as “New marine towed-streamer acquisition technology” by A. Ozbek, Schlumberger; M. Vassallo, K. Eggenberger, WesternGeco; D. van Manen, Schlumberger; K. Ozdemir, WesternGeco; S. Zeroug, Schlumberger; and J. O. Robertsson, ETH; “Exploitation and production of gas condensate reservoirs” by G. Vega Riveros, G. Vega Reservoir consultant; “Automating pore-pressure prediction in subsalt sediments” by S. T. Saleh, Drill-Sense International; K. Williams, Halliburton; and A. Rizvi, Hess; “Increasing the accuracy of marine CSEM survey planning and data interpretation using novel 3D TTI anisotropic resistivity modeling” by M. Frenkel, Singularem; and “The role of geophysical uncertainty in field development concept selection” by S. Romundstad, I. Meisingset, T. Forde, D. Krasova, Aker Solutions; and S. Tresselt, IPRES.

Other key OTC events made possible through our OTC/SEG subcommittee included:

- the Topical Breakfast: Energy Challenges and Opportunities in Vietnam and Beyond, with Do Van Hau, president/CEO, Petrovietnam, as speaker
- the Topical Luncheon: The Role of NOCs in the Energy Sector, with Tan Sri Dato Shamsul Azhar Abbas, president and group chief executive, PETRONAS, as speaker

Members of the 2012–2013 SEG/OTC OTC.13 Technical Program Subcommittee included Charles Knobloch (chair) Rocco Detomo (vice chair), Jim Kreamer (special coordinator to the chair, 2013), Aurora Castelan, Dan Heinze, Bill Barkhouse, Larry Scott, Dave Ridyard, John MacDonald, and Gene Sparkman. Past Chair Joseph M. Reilly led the Active Arena as past chair for Technical Program Committee.

# SEG FOUNDATION

## Foundation Board of Directors

### Tom Smith, chair

The SEG Foundation Board of Directors thanks donors and volunteers for a successful 2012. We offer a wholehearted “thank you!” Through the hard work, generosity, and dedication of all the 2012 donors, our volunteers, and our business staff, the SEG Foundation continues its work in “Advancing Geophysics Today—Inspiring Geoscientists for Tomorrow!”

The 2012 SEG Foundation Board of Directors consisted of: Tom Smith (chair), Dominique Robert (vice chair), Frank Brown (treasurer), Jeff Springmeyer, Michael Forrest, Robert Talley, Peter Duncan, Hank Hamilton, Sally Zinke, Mike Loudin, Arthur Cheng, and Cung Vu.

The Technical Program chairs were Steven Roche, Scholarship Committee; Jeff Shrage, Travel Grants Committee; Rachel Newrick, Field Camps; and Roelof Snieder, Geoscientists *Without Borders* (GWB). They were responsible for the selection of all grant recipients, and we are grateful for their outstanding service. All are keenly aware of their serious responsibilities, as these awards have an effect on people’s lives in direct and indirect ways. In total, combining the Board and the grant committees, 44 dedicated volunteers deserve our accolades. If someone who reads this report is moved to consider adding his or her efforts to ours, we encourage him or her to let us know. We will gladly discuss the many opportunities available. Our reach is worldwide, and our mission is worthy of your attention.

How does the work of the Foundation relate to SEG? To put it simply, we support SEG by raising the funds for programs that benefit members and future members (our Student membership). Established in 1987 as a charitable and educational supporting organization for SEG, the Foundation exists to raise funds in alignment with SEG’s mission. With our help, SEG remains one of the premier professional societies in the world by offering members opportunities to benefit and grow professionally. We work to communicate effectively with our membership and corporate constituents, engage in fundraising with a purpose, and continually apply best practices. We maintain sound policies and procedures, exercise effective financial management, and oversee the assets entrusted to the Foundation.

The core activity of the SEG Foundation is fundraising and donor stewardship, or “development.” Foundation assets top \$21 million, and donations in 2012 were more than \$4 million. We are gratified to have 17 new Trustee Associates, individuals who now make cumulative lifetime gifts of US\$10,000 or greater.

This brings us to 229 Trustee Associates. As of 31 December 2012, our individual supporters also include 74 High Velocity members, 31 individual endowment donors, and 248 Doodlebuggers. A complete list of donors is proudly shown at [www.seg.org/foundation](http://www.seg.org/foundation).

The Geoscientists *Without Borders* endowment goal of \$1 million became a reality in 2012! Thanks to the help of 72 individual donors, we met the four challenge grants put forth by Debra and Mark Gregg, owners of KiwiEnergy. These challenge grants were the key to making the endowment possible and providing stability for the GWB program in the future. This endorsement enables individuals to participate in the GWB program, and we are actively soliciting additional gifts.

Many corporate donors to SEG programs honored us by committing to support them again. Chevron and Schlumberger, two of our original Sustaining Investors, each announced \$1 million multiyear commitments to renew support of the SLS and GWB programs. Other sustaining investors include CGG, PGS, ION, Apache, Paradigm, and Marathon Oil; they have made multi-year commitments of \$250,000 or larger in support of critical SEG and SEG Foundation programs. We encourage more companies to join this corporate leadership team.

Without the generosity of individuals and corporate support that enables all the activities of the Foundation, our impact on the geophysical community would be diminished considerably. All donors receive for viewing our quarterly newsletter *Carrying the Torch*, available at [www.seg.org/foundation](http://www.seg.org/foundation). It provides deeper insight to the effects of their support of the Foundation. It is our goal that you know how we value you as a donor and welcome comments on our work.

Not only do we raise money but we also strive to be good stewards of the funds and use them wisely. Year 2012 grant expenditures of US\$1.8 million were divided between grants to advance geophysics today through Honorary Lectures, Distinguished Lectures, SEG Online, SEG e-learning, the SEG Wiki, and grants to inspire geoscientists for tomorrow including Student membership dues, many student-focused programs, field camps, travel grants for students, Geoscientists *Without Borders*, and scholarships.

Four programs provide grants directly to the geophysical community rather than to SEG. They are Scholarships, Field Camps, Travel Grants, and GWB. We operate with transparency and fairness, choosing to let independent committees that represent the global membership review and recommend awards to de-

servicing qualified candidates. Each committee deliberates, using best practices and adherence to policies and procedures. Our conflict of interest policy extends to committee members and the Board of Directors, and we are confident that our committees are well positioned to carry out the donors' intent, as well as meet our legal obligations as a recognized 501(c) (3) charity.

### **Scholarships**

The committee reviewed applications from 508 students and allocated scholarships from 67 different donor funds. This year, 120 scholarships totaling \$369,430 were awarded with funds from many passionate individual donors and major contributions from Anadarko and Apache. Funding for the SEG Foundation Scholarship Program comes from many sources, such as gifts from SEG members, their employees, SEG Sections and Associated Societies, and memorial funds to honor respected colleagues. We were pleased to welcome Chevron and Marathon Oil to the program for 2013.

### **Field Camps**

Field camps are integral to the preparation of the next generation of geophysicists. Hands-on experience cannot be synthesized in a classroom. The critical thinking necessary in the field on the use of equipment in real-world cases can be taught only where geophysical data begins. This year, applications from Africa, Asia, Europe, and North America reflect the truly global nature of the program and its expansion during the past three years. Support to the program provided grants totaling US\$121,756 to 16 field camps worldwide.

The Field Camp program was able to expand in 2009 thanks to a multiyear commitment by TGS. Their support was crucial to providing start-up of camps in countries devoid of opportunities. Generous commitments through endowments are provided by Rutt Bridges, The Scott Petty Foundation, Richard Degner, Prospectiuni SA, CGG, and the Canadian Society of Exploration Geophysicists.

### **Travel Grants**

The SEG Foundation provides travel grants that allow students to participate in specific programs such as the SEG/Chevron Student Leadership Symposium, the SEG/ExxonMobil Student Education Program, the SEG Challenge Bowl, the SEG Annual Meeting, and Student Expos. This year, 142 students from more than 30 countries received more than US\$225,000 in travel grants to events. For many, it was the first trip outside their local area.

### **Geoscientists Without Borders**

The SEG Foundation is particularly proud of this program, which supports the humanitarian application of geosciences around the world. In 2012 there were seven active projects around the world. The program has touched India, Thailand, Honduras, Romania, Australia, Jamaica, South Africa, Brazil, Sweden, Greece, Benin, Nicaragua, and Haiti. Those worldwide engagements serve to excite people and draw investments from corporate and individual donors. Your continued support

ensures additional life-changing projects using geophysics will be active throughout the world. Follow the progress at [www.seg.org/gwb](http://www.seg.org/gwb). Follow the links from the GWB Web site to subscribe to the GWB News, a new e-newsletter with the latest updates and upcoming events.

Without the continued support of Schlumberger/WesternGeco, Global Geophysical, Kiwi Energy, and CGG, the program would not have the diversity in humanitarian application or the diversity of technological application. A new corporate donor, PGS, joined the team in late 2012. The grassroots support from passionate individuals and employee groups makes this program unique. Weinman Geoscience, ION Geophysical, Geosoft Inc., and NEOS Geosolutions provided such support.

The vision of two people and the challenge grant they offered produced \$1 million to an endowment for GWB projects. Debra and Mark Gregg (KiwiEnergy) never ceased to champion this effort until the goal was reached. We are grateful beyond words.

Without a dedicated Board of Directors, committed members of the grant committees, and the hard-working staff in the SEG business office, led by Executive Director Steven Davis, and Foundation Director Peter Pangman, the mission could not be accomplished. Our thanks go to all our donors, large or small, corporate or individual, who believe in the mission. Each gift is given with a purpose to support the SEG Foundation and the vision of a vibrant geophysical community. Your faith in us as the stewards of your intent is appreciated. Together we are "Advancing Geophysics Today and Inspiring Geoscientists for Tomorrow" in a way that continues to succeed.

*Editor's note: Geoscientists Without Borders is a registered trademark of the SEG Foundation.*

# SEG SUBSIDIARIES

## SEAM

### Manik Talwani, chair

The SEG Advanced Modeling (SEAM) Corporation was established in 2007 as a wholly owned subsidiary of SEG. Please see the Web site for details: [www.seg.org/SEAM](http://www.seg.org/SEAM).

SEAM provides opportunities for companies to share the high cost of model design and data simulation. It also provides a forum for industry leaders to discuss geophysical problems of common interest, advances the art of modeling and computation by stimulating research and development, and provides data sets for industry benchmarks and educational purposes. SEAM research projects are conducted in phases with each lasting approximately two to three years by an industry consortium assembled around a geophysical challenge of great current relevance.

The 2013 SEAM board consists of Manik Talwani (chair), Kevin Bishop (vice chair), Jesse Perez (treasurer), Henri Houillevigie, Kamal Al-Yahya, Scott Morton, Sheldon Breiner, Steve Danbom, and Yaoguo Li. The Board has been concerned this year with completing SEAM Phase I and the tasks on the Research Partnership for Security of Energy in America (RPSEA) portion of the project. Phase II tasks are continuing. Preliminary discussions on the choice of a project for Phase III are being held. The Board continues to ensure that the operations of SEAM are conducted in a fiscally and legally sound manner.

**SEAM Phase I RPSEA** is nearing completion with a formal completion date of 30 June 2013. The Phase I and Phase I RPSEA component of SEAM focused on the development of a geophysical model for a deep-water region containing a large salt body and subsequent simulation of geophysical acquisitions over the model. Simulations include variable-density acoustic, variable-density acoustic with an absorbing upper surface (AUS), acoustic tilted transverse isotropy (TTI), gravity, controlled-source electromagnetic (CSEM), elastic, and magnetotelluric (MT). QC of simulation data was conducted by vendors working under contract to SEAM. All simulations are now complete. We are in the process of ensuring that all data have been transferred to our data storage vendor, Landmark Petrobank. Data promised for delivery to SEAM participants are being copied and will be sent out by the end of June. The final reports for both RPSEA and for SEAM participants are being prepared.

**The SEAM Phase II consortium** “Land Seismic Challenges,” which started in 2011, is constructing three digital geologic

models for 3D numerical simulations of land-seismic exploration. The Unconventional Model contains shale reservoirs, modeled with the elastic properties of the Eagle Ford and Woodford shale-gas plays, and placed in the stratigraphic setting of a mid-continent basin that is modeled after the near surface and overburden of the Arkoma Basin. The Arid Model contains the same reservoirs and overburden as the Unconventional Model but replaces the first 500 m of the near surface with structures—such as karsts, wadis, and outcropping bedrock—often encountered in desert terrains. The Foothills Model contains complex structural features of fold-and-thrust belts, overlain by the highly heterogeneous near surface and rough topography of foothills regions. The type area for the Foothills Model is the Llanos Basin of Colombia. Construction of the Unconventional Model was finished in 2012, and Phase II issued its first request for bids for production simulations using this model in January 2013. The Arid Model is in the final stages of digital construction and should be ready for simulations by the fall. The Foothills Model is being constructed under an outside contract to Midland Valley Exploration. The structural framework of the model was completed in May 2013; the full model, populated with elastic parameters, should be ready for production simulations starting in the spring of 2014.

**SEAM Workshop:** On 21–24 May 2013, in San Antonio, the SEG Advanced Modeling Corporation conducted the 2013 SEAM Workshop titled Geoscience Advancement with SEAM Data. The fundamental of the three Us of research and development were emphasized. First, specifics were presented on the Useful Phase I rock physics-based model and data including seismic, gravity, controlled-source electromagnetics, and magnetotellurics. Secondly, detailed presentation of the model creation, data generation, and quality control resulted in a Useable collection of classic data sets. Thirdly, the highlight of the workshop was the initial Use of the results as demonstrated by excellent presentations by both industry and academic scientists. The last half day focused on the Useful nature of the three land models created in SEAM Phase II. Fifty attendees actively participated in the workshop discussions.

**PHASE III:** The following topics are under discussion for a Phase III SEAM project:

- Pore Pressure Prediction in a deepwater subsalt environment (possibly in conjunction with a RPSEA project).
- Interpretation workbox of a 3D data cube containing integrated geologic/geophysical data set.
- Reservoir Management. Prestack and poststack seismic simulation of complex reservoir geology and dynamic con-

ditions intended to challenge interpretation techniques.

- Constructing and interpreting geophysical signatures of various scenarios of mineral deposit systems.

**SEAM Publicity:** The Board is committed to disseminating SEAM results to the global geophysical community. Recent technology transfer activities include the following:

- Phase I Progress reports by Project Manager Michael C. Fehler were published in *The Leading Edge* in December 2012, April 2013, and August 2013. These supplement earlier progress reports from 2007 through 2012. A complete listing of articles is available at: [www.seg.org/SEAM](http://www.seg.org/SEAM).
- Phase II Progress reports by Project Manager Michael Oristaglio were published in *The Leading Edge* in October 2012, March 2013, June 2013, and September 2013. These supplement earlier articles in 2012. A complete listing of articles is available at: [www.seg.org/SEAM](http://www.seg.org/SEAM).

**SEAM Data Sales:** The SEAM Models and Data Sets produced from the Phase I-RPSEA project became publicly available in 2013. Companies and academic institutions interested in purchasing the models or specific data sets should visit [www.seg.org/SEAM](http://www.seg.org/SEAM) for more information, including data descriptions and pricing.

## **SEG Global, Inc.**

### **Ricardo Rosa Fernandes, board chair**

SEG Global, Inc. is a for-profit company, fully owned by SEG, founded to provide strategic and tactical oversight and recommendations to the SEG Board of Directors regarding the planning, establishment, resourcing, and management of SEG's regional offices, and it is the avenue for future development of regional offices.

The Board of Directors includes Ricardo Rosa Fernandes (chair), Jie Zhang (vice chair), Jerry Dresner (treasurer), Igor Eltsov, Sue Webb, Guillaume Cambois, Jie Zhang, Said Maarqi, and Brian Evans.

Regional assessments: SEG Global, Inc. has developed a process for conducting regional assessments that involves the Global Affairs Committee, SEG Global, Inc., and SEG staff. The process consists of four phases: (1) preliminary research, (2) brainstorming, (3) strategic analysis, and (4) financial analysis. The assessments are still being conducted, and the first two regions to be covered are the former Soviet Union and Africa. SEG staff members have traveled to the regions and have been working to complete the analysis and present to the Board. Other regions that will have assessments are Latin America and Central, South, and Southeast Asia.

SEG China: SEG China has been conducting a series of joint events with local societies (Society of Petroleum Geophysicists, Chinese Geophysical Society), state-owned companies, and universities. SEG cosponsored the 2103 International Petroleum Technology Conference held in March in Beijing. A new

cooperation MOU has been signed with CGS; it will broaden the access of members from this society to SEG products and services. An SEG China advisory committee, based on an SEG Global, Inc. recommendation, is cochaired by Jie Zhang (from USTC) and Huasheng Zheng (from BGP).

SEG Middle East (Dubai): SEG Dubai office, shared with AAPG, has been in operation since March 2012. An SEG Middle East advisory committee has been established to help determine the primary needs of the countries in the region from SEG's existing products and services. The committee is chaired by Ahmed Al-Eidan, manager exploration, Kuwait Oil Company with members from Saudi Arabia, Oman, United Arab Emirates, Qatar, and Egypt. These committee members represent E&P companies, service providers, and academia. The Dubai office has been actively promoting activities for SEG local members: an SEG-DGS education week in April 2013, a Full Waveform Inversion workshop, a planned joint workshop with AAPG on subsalt in October 2013, and one on Unconventionals in November.

Other regional activities: The first Asia Pacific Near-surface Conference, cosponsored by SEG, ASEG, SEGJ, KSEG, and the Chinese Geophysical Society, took place in Beijing in July 2013. The next SEG International Petroleum Technology Conference will take place in Doha, Qatar in January 2014.

## **SEG Real Estate Corporation**

### **Bob Wyckoff, chair**

The SEG Real Estate (RE) Corporation was established in 2011 as a subsidiary of SEG. The purpose(s) of the corporation is to oversee the activities associated with the property at 8801 S. Yale Avenue, Tulsa, Oklahoma called the SEG Geophysical Resource Center (GRC): (1) building maintenance and property management; (2) leasing of all space not occupied by SEG business staff; and (3) maximizing the value of the physical assets of the corporation. All funds, whether income or principle, shall be devoted to said purposes.

The first meeting of the RE Board of Directors was held in January 2012. Activities through 2012 and the first five months of 2013 have been dominated by a proposal for a new building on the SEG/GRC campus. In addition, RE Board member training in association with a new policy and procedure manual was completed. All Board and committee members were in place in accordance with RE Bylaws on 1 January 2013. New lease agreements were established for tenants.

The RE Board of Directors has seven members: Bob Wyckoff (chair), Steve Simmons (vice chair), Mary Fleming (treasurer), Steven Davis (secretary), Tom Harrold, Keith Willson, and Charles Wickstrom. The Finance Committee is chaired by Mary Fleming with Keith Willson, Bill Underwood, and Lynzi Black Rice serving as members. The Audit Committee is chaired by Tom Harrold and includes Steve Ornelas and Ben Chenoweth. Gary Servos is the liaison to the SEG Board of Directors. John

Van Gundy is our SEG staff representative for keeping records and assisting with all logistics relating to RE activities.

Property management is coordinated by John Van Gundy. Grubb and Ellis was contracted on 1 March 2013 for leasing and property management. Their metric is to have 95% of total office space leased, on average, for revenue generation to grow SEG activities worldwide.

The proposed addition of a new office building and parking garage to increase revenue for SEG growth has been a rewarding experience for everyone involved. A project team comprised of contractor representatives and SEG staff is moving forward with acquiring permits and schematic design. Bank financing is currently under way. Value engineering attributes are being reviewed for optimum budget costs for the project. The project has an approved \$20 million cap with expectations of \$17.4 million budget to complete the project. The building as planned is four stories (+/-75,000 ft<sup>2</sup>) and two stories for the parking garage (150 spaces). We are in the early stages of the program, and the numbers may change as the project builds out. Scheduled completion is November 2014.

Julie Reynolds with Programs Management Group (PMg) is our RE representative and Project Team Lead. She is doing an excellent job with keeping the overall project on target. The building program has required going beyond the call of duty for the RE Board and SEG staff, to whom I am most grateful.

My sincere thanks to the RE Board members, SEG staff, and members of the new building project team for working together to support the RE mission.



# SEG CONSOLIDATED FINANCIAL STATEMENTS

**Society of Exploration Geophysicists**

Consolidated Financial Statements

30 June 2013 and 2012

*(With Independent Auditors' Report Thereon)*



Howerton, Morris, Simpson & Smith P.L.L.C.  
CERTIFIED PUBLIC ACCOUNTANTS

8282 S. Memorial Drive, Suite 110 • Tulsa, Oklahoma 74133

Phone: 918 / 481-5949 • Fax: 918 / 481-8453

---

## INDEPENDENT AUDITORS' REPORT

To the Board of Directors of  
Society of Exploration Geophysicists

We have audited the accompanying consolidated statements of the Society of Exploration Geophysicists (a nonprofit organization), which comprise the statement of financial position as of 30 June 2013 and 2012, and the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform our audits to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

Board of Directors of  
Society of Exploration Geophysicists  
Page 2

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Society of Exploration Geophysicists as of 30 June 2013 and 2012, and the changes in its net assets and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

*Hewitt, More, Simpson & Smith, P.L.L.C.*

17 October 2013

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Consolidated Statements of Financial Position

30 June 2013 and 2012

<u>Assets</u>	<u>2013</u>	<u>2012</u>
Current assets:		
Cash and cash equivalents	\$ 2,853,156	4,788,765
Short-term investments	3,786,845	2,633,087
Accounts receivable, less allowance for doubtful accounts of \$60,287 in 2013 and \$31,465 in 2012	3,254,899	1,603,864
Accounts receivable - SEG Foundation	256,632	287,567
Inventories	696,169	680,021
Prepaid expenses	535,855	732,532
Accrued interest receivable	<u>5,030</u>	<u>53,969</u>
Total current assets	<u>11,388,586</u>	<u>10,779,805</u>
Investments	7,576,083	6,903,182
Property and equipment:		
Land	489,605	489,605
Construction in progress	534,036	-
Building and leasehold improvements	9,342,627	9,332,769
Application development	2,853,399	2,853,399
Furniture, fixtures and equipment	<u>2,468,542</u>	<u>2,309,621</u>
	15,688,209	14,985,394
Less accumulated depreciation	<u>10,496,364</u>	<u>9,265,024</u>
Net property and equipment	<u>5,191,845</u>	<u>5,720,370</u>
	<u>\$ 24,156,514</u>	<u>23,403,357</u>

See accompanying notes to consolidated financial statements.

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Consolidated Statements of Financial Position (Continued)

30 June 2013 and 2012

	<u>2013</u>	<u>2012</u>
<b><u>Liabilities and Net Assets</u></b>		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 1,662,037	1,414,217
Deferred revenue	<u>8,731,267</u>	<u>7,736,996</u>
Total current liabilities	10,393,304	9,151,213
Deferred revenue – long term	<u>66,188</u>	<u>65,600</u>
Total liabilities	<u>10,459,492</u>	<u>9,216,813</u>
Unrestricted net assets:		
Undesignated	13,697,022	14,055,544
Board designated	<u>-</u>	<u>131,000</u>
Total net assets	<u>13,697,022</u>	<u>14,186,544</u>
	\$ <u>24,156,514</u>	<u>23,403,357</u>

See accompanying notes to consolidated financial statements.

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Consolidated Statements of Activities

For the Years Ended 30 June 2013 and 2012

	<u>2013</u>	<u>2012</u>
Revenues:		
Membership dues	\$ 1,491,293	1,431,612
Conferences and meetings	9,141,828	8,282,716
Publication sales and advertising	3,973,271	3,849,949
Professional development	821,212	776,982
Global relations	169,197	35,995
Investment income (loss)	155,615	(56,816)
Building lease operations	1,207,480	1,121,603
SEAM research revenues	2,482,262	765,691
Contributions from Foundation	1,103,695	1,060,180
Other	<u>8,226</u>	<u>12,071</u>
Total revenues	<u>20,554,043</u>	<u>17,279,983</u>
Expenses:		
Program expenses		
Membership record services	514,982	422,719
Conferences and meetings	4,022,929	2,850,665
Publications and advertising	3,187,855	3,085,487
Professional development	2,445,023	2,240,250
Research	2,493,085	771,788
Other	<u>13,263</u>	<u>17,554</u>
Total program expenses	<u>12,677,137</u>	<u>9,388,463</u>
Support expenses		
General and administrative	3,176,022	2,204,612
Building lease operations	696,751	1,117,093
Communications	2,489,422	2,396,262
Global relations	<u>1,411,206</u>	<u>1,073,747</u>
Total support expenses	<u>7,773,401</u>	<u>6,791,714</u>
Total Expenses	<u>20,450,538</u>	<u>16,180,177</u>
Increase (decrease) in net assets before contributions to Foundation	103,505	1,099,806
Contributions to Foundation	<u>(593,028)</u>	<u>(775,979)</u>
Increase (decrease) in net assets	(489,523)	323,827
Unrestricted net assets, beginning of year	<u>14,186,544</u>	<u>13,862,717</u>
Unrestricted net assets, end of year	\$ <u>13,697,021</u>	<u>14,186,544</u>

See accompanying notes to consolidated financial statements.

## SOCIETY OF EXPLORATION GEOPHYSICISTS

### Consolidated Statements of Cash Flows

For the Years Ended 30 June 2013 and 2012

	<u>2013</u>	<u>2012</u>
Cash flows from operating activities:		
Increase (decrease) in net assets	\$ (489,523)	323,827
Adjustments to reconcile increase (decrease) net assets to net cash used by operating activities:		
Depreciation and amortization	1,231,340	1,136,775
Net realized/unrealized (gain) loss on investments	21,954	300,177
(Increase) decrease in assets:		
Accounts receivable	(1,651,035)	(666,758)
Accounts receivable SEG Foundation	30,935	853,963
Inventories	(16,148)	(34,870)
Prepaid expenses	196,677	(72,545)
Accrued interest receivable	48,939	(21,635)
Increase (decrease) in liabilities:		
Accounts payable and accrued liabilities	247,820	813,293
Deferred revenue	<u>994,859</u>	<u>1,677,804</u>
Net cash provided (used) by operating activities	<u>615,818</u>	<u>4,310,031</u>
 Cash flows from investing activities:		
Purchases of property and equipment	(702,815)	(886,214)
Purchases of investments	(12,496,159)	(8,692,067)
Proceeds from sale of investments	<u>10,647,547</u>	<u>6,252,372</u>
Net cash used in investing activities	<u>(2,551,427)</u>	<u>(3,325,909)</u>
 Cash flows from financing activities –		
Principal payments on capital lease obligation	-	(1,513)
Proceeds from capital lease obligation	<u>-</u>	<u>-</u>
Net cash provided (used) by financial activities	<u>-</u>	<u>(1,513)</u>
 Net increase (decrease) in cash	(1,935,609)	982,609
Cash, beginning of year	<u>4,788,765</u>	<u>3,806,156</u>
Cash, end of year	\$ <u>2,853,156</u>	<u>4,788,765</u>
 Taxes paid	\$ <u>14,313</u>	<u>-</u>

See accompanying notes to consolidated financial statements.

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

#### Nature of Operations

The Society of Exploration Geophysicists (the "Society"), was organized in 1930 as a not-for-profit organization. The objectives of the Society are to promote the science of geophysics, to foster the common scientific interests of geophysicists, and to maintain a high professional standing among its members. The Society accomplishes these objectives by publishing scientific literature, conducting professional development and student programs, hosting technical meetings and providing other informational services.

These financial statements do not include the SEG Foundation (the "Foundation"), a separate not-for-profit organization which receives contributions for public education and other scientific and humanitarian purposes.

#### Principles of Consolidation

The consolidated financial statements include the accounts of the Society and its subsidiaries, SEG Advanced Modeling Corporation ("SEAM"), SEG Real Estate Corporation and SEG Global, Inc. All intercompany balances and transactions have been eliminated.

#### Cash and Cash Equivalents

Cash and cash equivalents include cash in banks and all highly liquid investments with an original maturity of three months or less. The Society maintains cash balances at several banks. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to \$250,000. At 30 June 2013 and 2012, the Society and SEAM had deposits in excess of the federally insured limit.

#### Accounts Receivable

Accounts receivable consists of uncollateralized billings for memberships, advertising, page charges, subscriptions, sponsorships, and exhibit space. Accounts receivable are stated at the amount billed, less an allowance for uncollectible accounts. The Society provides for losses on receivables using the allowance method. The allowance is based on experience, terms of agreements, and other circumstances affecting the ability of customers to meet their obligations. Outstanding balances are written off when management determines that the receivables will not be collected. The Society provides for probable uncollectible amounts through a provision to bad debts expense and a corresponding amount being added to the valuation allowance based on management's assessment of the current status of individual accounts. Unpaid amounts that remain after management has pursued reasonable collection efforts are written off through a charge to the allowance for uncollectible accounts and a credit to accounts receivable. Interest is not charged on outstanding balances.

(continued)

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

#### Accounts Receivable (continued)

At 30 June 2013, management estimates that the allowance for uncollectible accounts of \$60,287 is adequate to absorb any losses which might arise from nonpayment. Receivables are considered impaired if full principal payments will not be received in accordance with contractual terms. Such impaired receivables are written down to the amount of cash expected to be collected.

#### Inventories

Inventories of publications for resale are valued at the lower of cost, determined by the average method, or market.

#### Investments

Investments consist of marketable debt and equity securities which are valued at their fair values in the statements of financial position. Fair values for investments are based on quoted market prices. Unrealized gains and losses are included in the statements of activities. Investments in joint ventures are valued at cost.

#### Property and Equipment

The Society capitalizes all expenditures for property and equipment in excess of \$1,000. Property and equipment are carried at cost. Depreciation is computed using the straight-line method based on the estimated useful lives of the assets. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any resulting gain or loss is included in the statement of activities. Expenditure for maintenance and repairs are charged to expense as incurred. Major improvements are capitalized. The lives used in computing depreciation are as follows: building – 50 years; software, tenant improvements, furniture and equipment – 3 to 10 years.

The Society reviews the carrying value of property and equipment for impairment whenever events and circumstances indicate that the carrying values of long-lived assets may not be recoverable from the future cash flows expected to result from their use and ultimate disposition. In cases where the undiscounted expected future cash flows are less than the carrying values, an impairment loss is recognized equal to the amount by which the carrying value exceeds the fair value of each asset. The factors considered by the Society in performing an impairment assessment include current operating results, trends, and prospects, and the effects of obsolescence, demand, competition, and other economic factors. Based on these criteria, there was no impairment in 2013.

(continued)

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

#### Construction in Progress

Costs of construction are capitalized in Construction in Progress. Depreciation will begin when the property is completed and placed in service.

#### Application Development

Direct costs associated with the development of SEG Online are capitalized and are amortized over the estimated product life of five years on the straight line basis. Unamortized costs are carried at the lower of book value or net realizable value. SEG Online was fully amortized in 2013.

#### Net Assets

Net assets and income, expenses, gains and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, our net assets and changes therein are classified & reported as follows:

- ***Unrestricted*** – Unrestricted net assets represent those resources that are not restricted by donors. Board-designated net assets represent amounts that the Board of Directors set aside for future use. Net assets of \$131,000 designated by the Board of Directors for future building improvements in 2012 were released from restriction by the Board of Directors in 2013.
- ***Temporarily Restricted*** – Temporarily restricted net assets reflect donor-imposed restrictions that require us to utilize or expend the related assets as specified. We record contributions as temporarily restricted if they are received with donor stipulations that limit their use through either time or purpose restrictions. When donor restrictions expire, that is, when a time restriction ends or a purpose restriction is fulfilled, temporarily restricted net assets are reclassified to unrestricted net assets and presented in the statement of activities as “net assets released from restrictions.”

Our policy is to record temporarily restricted contributions received and expended in the same accounting period as unrestricted revenues and expenses in that period.

- ***Permanently Restricted*** – Permanently restricted net assets reflect donor-imposed restrictions which stipulate that the related resources be maintained in perpetuity, but which permit us to expend part or all of earnings derived from the donated assets for either specified or unspecified purposes. The Society does not have any permanently restricted net assets at 30 June 2013 and 2012.

(continued)

# **SOCIETY OF EXPLORATION GEOPHYSICISTS**

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

#### Income Taxes

The Society is exempt from federal income tax under Section 501(c)(6) of the Internal Revenue Code. Income from consolidated for-profit subsidiaries and advertising not directly related to the Society's tax-exempt purpose is subject to taxation as unrelated business income. The 2013 statement of activities includes, in Publication and advertising, \$115,000 as expenses for estimated taxes related to advertising income.

The accounting standard on accounting for uncertainty in income taxes addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under that guidance, the Society may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities based on the technical merits of the position. Examples of tax positions include tax-exempt status of the Society and the various positions related to the potential sources of unrelated business taxable income. There were no unrecognized tax benefits identified or recorded as liabilities for fiscal year 2013 and 2012.

#### Revenue Recognition

Membership dues and publication subscription revenues are recognized ratably over the applicable membership or subscription period. Revenues relating to meetings are recognized as revenue at the time of the meeting.

#### Building Lease Operations

The Society has transitioned ownership of the land and building where the Society administrative offices are located in Tulsa, Oklahoma to the SEG Real Estate Corporation. This process was completed in early fiscal year 2013. Office space which is not used by the Society is leased to other organizations.

(continued)

# **SOCIETY OF EXPLORATION GEOPHYSICISTS**

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

#### Fair Value Measurements

The Society establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to measurements involving significant unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets that the Society has the ability to access at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the assets, either directly or indirectly.
- Level 3 inputs are unobservable inputs for the assets.

The level in the fair value hierarchy within which a fair measurement in its entirety falls is based on the lowest level input that is significant to the fair value measurement in its entirety.

#### Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reported period. Actual results could differ from those estimates.

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 2 – INVESTMENTS

At 30 June 2013 and 2012, investments at fair value were as follows:

	<u>2013</u>	<u>2012</u>
Certificate of deposit	\$ 2,658,146	4,526,578
Equities	2,781,192	1,367,579
Government and corporate bonds	<u>5,673,590</u>	<u>3,392,112</u>
Subtotal - Level 1 Assets	11,112,928	9,286,269
Joint venture - Level 3 Asset	<u>250,000</u>	<u>250,000</u>
Total investments	11,362,928	9,536,269
Less short-term investments	<u>3,786,845</u>	<u>2,633,087</u>
Long-term investments	\$ <u>7,576,083</u>	<u>6,903,182</u>

The Society's only investment measured at fair value on a recurring basis using significant unobservable inputs (Level 3 inputs) is its investment in a joint venture. The joint venture is valued at cost but has received significant cash flow in excess of cost since its purchase. The Society's ability to sell this investment is limited because of the nature of the investment arrangement.

Fixed income securities totaled \$8,331,736 at 30 June 2013 and were held in certificates of deposit maturing in less than one year and mutual funds invested in corporate and government bonds.

Investment income (loss) in the accompanying consolidated statements of activities includes the following:

	<u>2013</u>	<u>2012</u>
Interest and dividend income	\$ 177,569	243,363
Gain (loss) on investments	<u>(21,954)</u>	<u>(300,177)</u>
	\$ <u>155,615</u>	<u>(56,816)</u>

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 3 – RELATED PARTY TRANSACTIONS

The Society and Foundation support each other with contributions and the Society provides services for which they are reimbursed by the Foundation. Those transactions for the years ended 30 June, are as follows:

	<u>2013</u>	<u>2012</u>
Contributions to the Foundation	\$ -	165,987
In-kind contributions to the Foundation (administrative services and costs)	\$ 593,028	609,991
Contributions from the Foundation	\$ 1,103,659	1,060,180
Reimbursement from the Foundation for fundraising services	\$ 201,711	180,975
Reimbursement from the Foundation for program administrative services	\$ 144,747	133,545

Accounts receivable due from the Foundation was \$256,632 at 30 June 2013 and \$287,567 at 30 June 2012.

### NOTE 4 – PENSION AND SALARY REDUCTION PLANS

The Society sponsors a salary reduction plan. The Society's contributions to this plan are computed based on 2% of salaries and a two-for-one matching contribution of employees' contributions, up to a maximum of 4.33% of salaries. As of August 1, 2011 the Society's contributions to this plan are computed based on 6% of salaries and a one-for-one matching contribution of employees' contributions, up to a maximum of 3% of salaries.

The Society's expense under this plan was \$478,109 in 2013 and \$425,260 in 2012.

# SOCIETY OF EXPLORATION GEOPHYSICISTS

## Notes to the Consolidated Financial Statements

For the Years Ended 30 June 2013 and 2012

### NOTE 5 – LEASING ARRANGEMENTS

The Society leases approximately 75% of the office space in its headquarters building to unaffiliated parties under non-cancelable operating leases. The following is a schedule of minimum future rental revenues from those tenants as of 30 June 2013:

Year Ending <u>30 June</u>		<u>Amount</u>
2014	\$	889,414
2015		678,286
2016		632,816
2017		318,366
2018		95,599
2019		<u>16,375</u>
	\$	<u>2,630,856</u>

### NOTE 6 – NEW BUILDING CONSTRUCTION

During 2013, SEG Real Estate Corp conducted studies on the design and financial feasibility of constructing a new building for lease to SEG and unrelated tenants. Based on the outcome of those studies, SEG Real Estate Corp obtained approval from its Board of Directors to construct a four story building and parking garage on the same site as its existing building. Legal, architectural and engineering fees incurred in connection with the new building have been capitalized as Construction in progress. Upon completion of the new building, the assets will be placed into service and depreciated based on policy.

### NOTE 7 – SUBSEQUENT EVENTS

The Society has reviewed subsequent events and transactions which occurred after 30 June 2013 through the date of the independent auditor's report on these financial statements, which is the date that the financial statements were available for release. The financial statements include all events or transactions, including estimates, required to be recognized in accordance with accounting principles generally accepted in the United States. The Society has also determined that there are no non-recognized subsequent events which require additional disclosure in order for these financial statements to not be misleading.

# SEG FOUNDATION FINANCIAL STATEMENTS



**FINANCIAL STATEMENTS**

**DECEMBER 31, 2012 and 2011**

**WITH**

**INDEPENDENT AUDITOR'S REPORT**



## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors  
SEG Foundation

### **Report on the Financial Statements**

We have audited the accompanying financial statements of SEG Foundation (a not-for-profit corporation), which comprise the statement of financial position as of December 31, 2012, and the related statements of activities and cash flows for the year then ended and the related notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of SEG Foundation as of December 31, 2012, and the results of its operations and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

**Other Matter**

The financial statements of SEG Foundation, as of and for the year ended December 31, 2011, were audited by other auditors whose report dated August 6, 2012 expressed an unmodified opinion on those statements.

*HoganTaylor LLP*

April 25, 2013

**SEG FOUNDATION**

**STATEMENTS OF FINANCIAL POSITION**

**December 31, 2012 and 2011**

	2012	2011
<b>Assets</b>		
Cash	\$ 942,433	\$ 1,370,866
Pledges receivable, net	6,641,781	6,162,511
Due from affiliate	83,419	139,470
Investments	13,885,040	11,536,756
Exhibits and office equipment, net	133,117	134,758
Other assets	35,819	25,269
	<hr/>	<hr/>
Total assets	\$ 21,721,609	\$ 19,369,630
	<hr/>	<hr/>
<b>Liabilities and Net Assets</b>		
Liabilities:		
Due to affiliate	\$ 229,584	\$ 1,155,459
Accounts payable and accrued liabilities	1,013	210,114
	<hr/>	<hr/>
Total liabilities	230,597	1,365,573
	<hr/>	<hr/>
Net assets:		
Unrestricted:		
Undesignated	186,068	(519,219)
Board-designated	2,033,587	2,033,587
	<hr/>	<hr/>
Total unrestricted	2,219,655	1,514,368
Temporarily restricted	9,059,705	6,522,147
Permanently restricted	10,211,652	9,967,542
	<hr/>	<hr/>
Total net assets	21,491,012	18,004,057
	<hr/>	<hr/>
Total liabilities and net assets	\$ 21,721,609	\$ 19,369,630
	<hr/>	<hr/>

See accompanying notes to financial statements.

**SEG FOUNDATION**

**STATEMENT OF ACTIVITIES**

**Year ended December 31, 2012**

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenues, gains and other support:				
Contributions	\$ 162,390	\$ 4,373,555	\$ 183,746	\$ 4,719,691
In-kind support from affiliate	606,917	-	-	606,917
Interest and dividends	18,808	250,098	-	268,906
Net gain on investments	677,863	374,214	60,364	1,112,441
Net assets released from restriction	2,460,309	(2,460,309)	-	-
<b>Total revenues</b>	<b>3,926,287</b>	<b>2,537,558</b>	<b>244,110</b>	<b>6,707,955</b>
Expenses:				
Program services:				
Grant awards to affiliate	852,973	-	-	852,973
Other grant awards	645,885	-	-	645,885
Scholarships	353,587	-	-	353,587
<b>Total program services</b>	<b>1,852,445</b>	<b>-</b>	<b>-</b>	<b>1,852,445</b>
Supporting services:				
Management and general	897,716	-	-	897,716
Fundraising	237,800	-	-	237,800
Investment fees	82,039	-	-	82,039
Provision for uncollectible contributions	151,000	-	-	151,000
<b>Total supporting services</b>	<b>1,368,555</b>	<b>-</b>	<b>-</b>	<b>1,368,555</b>
<b>Total expenses</b>	<b>3,221,000</b>	<b>-</b>	<b>-</b>	<b>3,221,000</b>
Change in net assets	705,287	2,537,558	244,110	3,486,955
Net assets, beginning of year	1,514,368	6,522,147	9,967,542	18,004,057
Net assets, end of year	<u>\$ 2,219,655</u>	<u>\$ 9,059,705</u>	<u>\$ 10,211,652</u>	<u>\$ 21,491,012</u>

See accompanying notes to financial statements.

**SEG FOUNDATION**

**STATEMENT OF ACTIVITIES**

**Year ended December 31, 2011**

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenues, gains and other support:				
Contributions	\$ 232,918	\$ 2,492,473	\$ 633,562	\$ 3,358,953
In-kind support from affiliate	508,540	-	-	508,540
Interest and dividends	20,528	237,590	-	258,118
Net loss on investments	(429,133)	(161,577)	-	(590,710)
Net assets released from restriction	2,153,621	(2,153,621)	-	-
Net assets transferred	(24,452)	24,752	(300)	-
<b>Total revenues</b>	<b>2,462,022</b>	<b>439,617</b>	<b>633,262</b>	<b>3,534,901</b>
Expenses:				
Program services:				
Grant awards to affiliate	1,205,043	-	-	1,205,043
Other grant awards	538,952	-	-	538,952
Scholarships	383,006	-	-	383,006
<b>Total program services</b>	<b>2,127,001</b>	<b>-</b>	<b>-</b>	<b>2,127,001</b>
Supporting services:				
Grant administration	126,703	-	-	126,703
Management and general	730,543	-	-	730,543
Fundraising	258,798	-	-	258,798
Provision for uncollectible contributions	2,400	-	-	2,400
<b>Total supporting services</b>	<b>1,118,444</b>	<b>-</b>	<b>-</b>	<b>1,118,444</b>
<b>Total expenses</b>	<b>3,245,445</b>	<b>-</b>	<b>-</b>	<b>3,245,445</b>
Change in net assets	(783,423)	439,617	633,262	289,456
Net assets, beginning of year	2,297,791	6,082,530	9,334,280	17,714,601
<b>Net assets, end of year</b>	<b>\$ 1,514,368</b>	<b>\$ 6,522,147</b>	<b>\$ 9,967,542</b>	<b>\$ 18,004,057</b>

See accompanying notes to financial statements.

**SEG FOUNDATION**

**STATEMENTS OF CASH FLOWS**

**Years ended December 31, 2012 and 2011**

	2012	2011
<b>Cash Flows from Operating Activities</b>		
Change in net assets	\$ 3,486,955	\$ 289,456
Adjustments to reconcile change in net assets to net cash provided by (used in) operating activities:		
Contributions restricted for endowment	(183,746)	(633,562)
Net (gain) loss on investments	(1,112,441)	590,710
Depreciation	1,641	1,575
Provision for uncollectible contributions	151,000	2,400
Change in assets and liabilities:		
Pledges receivable	(1,011,819)	(1,090,269)
Due to and due from affiliates	(869,824)	-
Other assets	(10,550)	13,903
Accounts payable and accrued liabilities	(209,101)	90,675
	242,115	(735,112)
<b>Cash Flows from Investing Activities</b>		
Purchase of equipment	-	(3,860)
Proceeds from sale of investments	5,222,461	5,964,023
Purchase of investments	(6,458,304)	(6,331,568)
	(1,235,843)	(371,405)
<b>Cash Flows from Financing Activities</b>		
Proceeds from contributions restricted for endowment	565,295	549,199
	(428,433)	(557,318)
Net decrease in cash		
Cash, beginning of year	1,370,866	1,928,184
Cash, end of year	\$ 942,433	\$ 1,370,866

See accompanying notes to financial statements.

## SEG FOUNDATION

### NOTES TO FINANCIAL STATEMENTS

December 31, 2012 and 2011

#### Note 1 – Nature of Operations and Summary of Significant Accounting Policies

##### Nature of operations

SEG Foundation (the Foundation), is a not-for-profit corporation affiliated with the Society of Exploration Geophysicists (the Society) (see Note 7). The Foundation encourages and supports scientific, educational and charitable activities of benefit to geophysicists. The Foundation provides funding to the Society, students and others. Awards to the Society support major programs including student programs, lecture programs and SEG online. Awards to students include scholarships and travel grants. The Foundation also provides grants to other organizations for projects of special merit, summer field camps and the Geoscientists *Without* Borders program. Contributions are received primarily from members of the Society and corporations.

The Foundation's activities consist of the following:

- Professional Development Programs: Programs that support practicing geophysicists and to further the science of applied geophysics.
- Student Support Programs: Programs that encourage and inspire the participation of university and college students in the geosciences.
- Youth Outreach Programs: Programs designed to engage youth from 6 to 17 years of age in the geosciences.
- Geoscientists *Without* Borders: A program designed to assist not-for-profit organizations in humanitarian projects throughout the world.
- IQ Earth: A program to change how geophysicists and related professions visualize and interpret subsurface structure, rock and fluid properties.

##### Contributions and pledges receivable

Unconditional promises to give that are expected to be collected within one year are recorded at estimated net realizable value. Unconditional promises to give that are expected to be collected in future years are recorded at the estimated present value of their estimated future cash flows. The discounts on those amounts are computed using risk-free interest rates applicable to the years in which the promises are received.

Management determines the allowance for doubtful accounts based on periodic assessment of outstanding pledges, particularly those pledges which are past due as well as considering historical experience on collection of pledges. Pledge receivables are written off when deemed uncollectible.

##### Investments

Investments are carried at estimated fair value as reported by the asset custodians. See Note 3 for a description of the fair value inputs and methodologies.

### Temporarily and permanently restricted net assets

The Foundation reports contributions as restricted support if they are received with donor stipulations that limit their use. When a donor restriction expires, that is, when a stipulated time restriction ends or purpose restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the statements of activities as net assets released from restrictions.

Permanently restricted net assets are subject to donor imposed restrictions that stipulate resources be maintained permanently, but permit the Foundation to expend earnings for the purpose restricted in accordance with the spending policy established by the Foundation's Board of Directors (see Note 6).

The Foundation maintains a pool of investment funds for the unrestricted, temporarily restricted and permanently restricted assets. Investment returns are allocated to net asset classifications based upon a percentage of the balance of net assets held in each classification. Investment returns on permanently restricted assets and board-designated matching funds are temporarily restricted for the purposes stipulated by donors. Investment losses on permanently restricted assets in excess of accumulated nonexpended returns are allocated to unrestricted net assets. Returns on temporarily restricted assets are allocated to unrestricted net assets.

### Income taxes

The Foundation is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code and is considered an organization that is not a private foundation.

The accounting for income taxes may, at times, involve some degree of uncertainty and, as such, lead to uncertain tax positions having been taken. Management evaluated the Foundation's tax positions and concluded that the Foundation had taken no uncertain tax positions that require adjustment to the financial statements to comply with the provisions of this guidance. Generally, the Foundation is no longer subject to income tax examinations by the U.S. federal, state or local tax authorities for years before 2009.

### Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

### Reclassifications

Certain reclassifications have been made to prior year's financial statements to conform to the current year presentation. These reclassifications had no effect on the Foundation's net assets.

### Subsequent events

Management has evaluated subsequent events through April 25, 2013, the date the financial statements were available to be issued.

## Note 2 – Pledges Receivable

Pledges receivable consist of the following unconditional promises to give at December 31:

	2012	2011
Due in less than one year	\$ 2,387,530	\$ 3,522,208
Due in one to five years	4,490,911	2,683,798
Due in more than five years	-	852
	6,878,441	6,206,858
Less: allowance for doubtful accounts	(150,000)	-
Unamortized discount	(86,660)	(44,347)
	(236,660)	(44,347)
	\$ 6,641,781	\$ 6,162,511

## Note 3 – Investments

The Financial Accounting Standards Board Accounting Standards Codification established a consistent framework for measuring fair value and fair value hierarchy based on the observability of inputs used to measure fair value. These inputs are summarized in three broad levels:

- Level 1 Quoted prices in active markets for identical assets or liabilities.
- Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

There were no investment transfers due to changes in the observability of significant inputs between Level 1, Level 2 and Level 3 assets during the years ended December 31, 2012 and 2011.

Investments measured at estimated fair value at December 31 are summarized as follows:

2012	Assets			Total
	Level 1	Level 2	Level 3	
Money market funds	\$ 1,887,255	\$ -	\$ -	\$ 1,887,255
Equity securities	6,586,875	-	-	6,586,875
Corporate bonds	-	1,392,379	-	1,392,379
Asset-backed securities	-	248,204	-	248,204
Government securities	-	1,413,107	-	1,413,107
Mutual funds	862,298	-	-	862,298
Alternative investments	-	-	1,494,922	1,494,922
	\$ 9,336,428	\$3,053,690	\$ 1,494,922	\$ 13,885,040

2011	Assets			Total
	Level 1	Level 2	Level 3	
Money market funds	\$ 1,995,026	\$ -	\$ -	\$ 1,995,026
Equity securities	4,946,074	-	-	4,946,074
Corporate bonds	-	1,330,892	-	1,330,892
Asset-backed securities	-	351,185	-	351,185
Government securities	-	581,900	-	581,900
Mutual funds	908,557	-	-	908,557
Alternative investments	-	-	1,423,122	1,423,122
	<u>\$ 7,849,657</u>	<u>\$ 2,263,977</u>	<u>\$ 1,423,122</u>	<u>\$ 11,536,756</u>

The estimated fair value of alternative investments has been estimated using the net asset value per share of the investments as reported by the fund managers.

Alternative investments held at December 31 consist of the following:

2012	Cost	Estimated Fair Value	Redemption Frequency	Redemption Notice Period
Hedge funds (a)	\$ 1,011,097	\$ 1,074,890	Quarterly	30 – 90 days 3 business days prior to month-end
Managed futures fund (b)	<u>418,845</u>	<u>420,032</u>	Monthly	
	<u>\$ 1,429,942</u>	<u>\$ 1,494,922</u>		
<hr/>				
2011				
Hedge funds (a)	\$ 1,018,000	\$ 979,325	Quarterly	30 – 90 days 3 business days prior to month-end
Managed futures fund (b)	<u>418,845</u>	<u>443,797</u>	Monthly	
	<u>\$ 1,436,845</u>	<u>\$ 1,423,122</u>		

- (a) The purpose of the funds is to achieve long-term capital appreciation and reduce volatility of overall portfolio returns. The funds take both long and short positions, primarily in common stocks, options, warrants, credit securities and derivative instruments. Fund managers calculate net asset value based on the fair value of the underlying assets, which are primarily valued with Level 1 or Level 2 inputs.
- (b) The Fund aims to achieve substantial capital appreciation through speculative trading in U.S. and international markets for currencies, interest rates, stock indices, agricultural and energy products and precious and base metals. The Fund may employ futures, options on futures, and forward contracts in those markets. The Fund may also enter into swap transactions relating to the value of crude oil and other energy related products. The general partners calculate net asset value based on the fair value of the underlying investments, which are primarily valued with Level 1 or Level 2 inputs.

The table below sets forth a summary of changes in the fair value of the Foundation's Level 3 alternative investments:

Balance, January 1, 2011	\$ 1,126,444
Purchases	748,000
Transfer into (out) of Level 3	-
Investment income	-
Unrealized loss	(451,322)
Realized loss	-
	<hr/>
Balance, December 31, 2011	1,423,122
Purchases	8,097
Transfer into (out) of Level 3	-
Investment income	-
Unrealized gain	63,703
Realized loss	-
	<hr/>
Balance, December 31, 2012	<u><u>\$ 1,494,922</u></u>

#### Note 4 – Exhibits and Office Equipment

A summary of exhibits and office equipment at December 31 are as follows:

	<u>2012</u>	<u>2011</u>
Furniture and fixtures	\$ 3,736	\$ 3,736
Computer equipment	10,830	10,830
	<hr/>	<hr/>
	14,566	14,566
Less: accumulated depreciation	(13,185)	(11,544)
	<hr/>	<hr/>
Exhibits	1,381	3,022
	<hr/>	<hr/>
	131,736	131,736
	<hr/>	<hr/>
	<u><u>\$ 133,117</u></u>	<u><u>\$ 134,758</u></u>

Exhibits consist of historical geophysical equipment and a "Doodlebugger" statue commemorating the geophysical tradition.

## Note 5 – Net Assets

### Unrestricted

Unrestricted net assets are comprised of the following at December 31:

	2012	2011
General operating fund	\$ 333,523	\$ 278,492
Endowment losses in excess of original gift	(147,455)	(797,711)
Board-designated matching funds	2,033,587	2,033,587
	<u>\$ 2,219,655</u>	<u>\$ 1,514,368</u>

Contributions of \$2,033,587 were designated by the Foundation Board of Directors to match permanently restricted contributions received from donors. The Foundation Board has designated these funds for investment and is obligated to use the returns in compliance with donor restrictions for the matched gift.

### Temporarily restricted

Temporarily restricted net assets are available for the following purposes at December 31:

	2012	2011
Professional development	\$ 1,786,646	\$ 1,836,053
Student support	3,760,914	2,984,967
Youth outreach	26,261	9,832
Geoscientists <i>Without</i> Borders	2,145,926	669,838
IQ Earth	899,295	905,301
Other	440,663	116,156
	<u>\$ 9,059,705</u>	<u>\$ 6,522,147</u>

### Permanently restricted

Permanently restricted endowment funds are designated for the following purposes at December 31:

	2012	2011
Professional development	\$ 415,096	\$ 415,096
Student support	7,193,480	7,063,444
Youth outreach	222,575	219,315
Geoscientists <i>Without</i> Borders	997,298	752,014
General	1,383,203	1,517,673
	<u>\$ 10,211,652</u>	<u>\$ 9,967,542</u>

## **Note 6 – Endowment Funds**

The Foundation's endowment consists of 13 individual programs established for a variety of purposes. Its endowment includes both donor-restricted funds and funds designated by the Board of Directors to function as endowments.

The Board of Directors of the Foundation has interpreted the Uniform Prudent Management of Institutional Funds Act (UPMIFA) for Oklahoma as requiring the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Foundation classifies as permanently restricted net assets (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) excess accumulated investment earnings in accordance with the applicable donor gift instruments and policy.

The remaining portion of the donor restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditures by the Foundation in a manner consistent with the standard of prudence prescribed by UPMIFA.

### Investment return objectives, risk parameters and strategies

The Foundation has adopted investment and spending policies, approved by the Board of Directors, for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment funds while also maintaining the purchasing power of those endowment assets over the long-term. Accordingly, the investment process seeks to achieve an after-cost total real rate of return, including investment income as well as capital appreciation, which exceeds the annual distribution with acceptable levels of risk. Endowment assets are invested in a diversified asset mix that is intended to result in a consistent inflation-protected rate of return that has sufficient liquidity to make an annual distribution of 3% to 5%, while growing the funds if possible. Therefore, the Foundation expects its endowment assets, over time, to produce a real return, net of fees, of at least 4% to 6.25% per annum. Actual returns in any given year may vary from this amount.

### Spending policy

The Foundation has a policy of appropriating for distribution each year 3% to 5% of its endowment fund's average fair value of the prior 12 quarters through the third calendar quarter year-end preceding the fiscal year in which the distribution is planned. In establishing this policy, the Foundation considered the long-term expected return on its investment assets, the nature and duration of the individual endowment funds, many of which must be maintained in perpetuity because of donor-restrictions, and the possible effects of inflation. The Foundation expects the current spending policy to allow its endowment funds to grow at a nominal average rate of 1% to 3% annually. This is consistent with the Foundation's objective to maintain the purchasing power of the endowment assets as well as to provide additional real growth through new gifts and investment returns.

Due to actual investment performance, the Board of Directors lowered the distribution rate to 1% of the average endowment fund balance for the year ending December 31, 2012. The distribution rate was set at 3% for the year ended December 31, 2011. Allocations of the annual distribution from underwater funds were limited to interest and dividends and the shortfall was funded from the general operating fund.

New donor agreements for contributions greater than \$25,000 allow for a portion of the earnings of permanently restricted contributions to be used for grant administration expenses. Funds released from temporarily restricted net assets to unrestricted net assets for management fees were \$21,674 and \$43,349 for the years ended December 31, 2012 and 2011, respectively.

Endowment net asset composition by type of fund as of December 31 is as follows:

2012	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds	\$ (147,455)	\$ 535,674	\$ 10,211,652	\$ 10,599,871
Board-designated endowment funds	2,009,536	-	-	2,009,536
	<u>\$ 1,862,081</u>	<u>\$ 535,674</u>	<u>\$ 10,211,652</u>	<u>\$ 12,609,407</u>
2011	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds	\$ (797,711)	\$ 159,830	\$ 9,967,542	\$ 9,329,661
Board-designated endowment funds	1,997,217	-	-	1,997,217
	<u>\$ 1,199,506</u>	<u>\$ 159,830</u>	<u>\$ 9,967,542</u>	<u>\$ 11,326,878</u>

Changes in endowment net assets for the fiscal years ended December 31:

2012	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	<u>\$ 1,199,506</u>	<u>\$ 159,830</u>	<u>\$ 9,967,542</u>	<u>\$ 11,326,878</u>
Investment return:				
Interest and dividends	-	250,098	-	250,098
Net realized and unrealized gains on long-term investments	650,256	374,216	60,364	1,084,836
Total investment return	650,256	624,314	60,364	1,334,934
Contributions	-	-	183,746	183,746
Appropriation of endowment assets for expenditure	-	(248,470)	-	(248,470)
Fund adjustments and transfers	12,319	-	-	12,319
Endowment net assets, end of year	<u>\$ 1,862,081</u>	<u>\$ 535,674</u>	<u>\$ 10,211,652</u>	<u>\$ 12,609,407</u>

2011	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	\$ 1,541,877	\$ 222,784	\$ 9,334,280	\$ 11,098,941
Investment return:				
Interest and dividends	-	162,650	-	162,650
Net realized and unrealized losses on long-term investments	(352,471)	(161,578)	-	(514,049)
Total investment return	(352,471)	1,072	-	(351,399)
Contributions	-	4,000	633,262	637,262
Appropriation of endowment assets for expenditure	-	(178,377)	-	(178,377)
Fund adjustments and transfers	10,100	110,351	-	120,451
Endowment net assets, end of year	\$ 1,199,506	\$ 159,830	\$ 9,967,542	\$ 11,326,878

#### **Note 7 – Society of Exploration Geophysicists**

The Society is the sole corporate member of the Foundation and appoints the Foundation's Board of Directors. The Foundation and Society support each other with contributions and the Society provides services for which they are reimbursed by the Foundation. Those transactions for the years ended December 31, are as follows:

	2012	2011
Cash contributions from the Society	\$ 161,487	\$ 4,500
In-kind support from the Society	606,917	508,540
Total support from the Society	\$ 768,404	\$ 513,040
Grant awards to the Society	\$ 852,973	\$ 1,205,043
Reimbursement to the Society for fundraising expenses	\$ 158,025	\$ 178,190
Reimbursement to the Society for grant administration expenses	137,135	126,703
Total reimbursements to the Society	\$ 295,160	\$ 304,893

In-kind support from the Society consists of the following at December 31:

	2012	2011
Administrative expenses	\$ 590,268	\$ 497,428
Rent	16,649	11,112
	\$ 606,917	\$ 508,540

In-kind support from the Society is reflected in the Foundation's financial statements as both revenue and expense, with no net overall financial impact to the statement of activities.

The Society has committed to continue to provide the necessary administrative and rent support to the Foundation for the foreseeable future.