

1999 Annual Report of the Society of Exploration Geophysicists

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Executive Committee Reports

Brian H. Russell, President

When I look back over my year as President, many words come to mind—rewarding, humbling, exciting, hectic, and yes, even frustrating at times, but it was an experience that I would never have missed, and it gave me a true perspective on the dedication of both our Tulsa office staff and the many volunteers that it takes to run our dynamic Society. As everyone who is reading this is acutely aware, the oil price took us for an exciting ride this year, and the resulting ups and downs (or should I say downs and ups) created a challenging environment for all of us. These types of challenges force us to dig deep within ourselves, and I am pleased to say that the SEG staff and committees have done an exceptional job in responding to these external pressures.

In this report I want to give you a flavor of many of the exciting initiatives that we have accomplished this year as a Society. As I will only be touching the highlights, I strongly recommend that you read the complete Annual Report for details.

Executive Committee. This year's Executive Committee had the daunting task of following a number of extremely proactive committees. The enthusiasm, vision, and initiative of these committees have created a wide range of new services for our members, such as the *Distinguished Instructor Short Course* and the *Double Impact Matching Funds Program*. Our task was therefore to continue the implementation of these new programs, to add our own vision, and to do so in the challenging low oil-price environment in which we found ourselves. I am pleased to report that my colleagues on the committee, Angie Stracner, Larry Lines, John Castagna, Joel Watkins, Orlando Chacín, and President-Elect Bill Barkhouse, did an admirable job of balancing these goals, working hand-in-hand with the Tulsa Business Office.

Let me summarize some of these initiatives. Phil Schultz, SEG's second Distinguished Instructor, visited nearly 20 locations and trained almost 2000 geophysicists worldwide on *The Seismic Velocity Model as an Interpretation Asset*. SEG's inaugural Distinguished Educator, Rob Stewart, visited 10 universities worldwide lecturing on the subjects of *Borehole Seismic Methods* and *Converted-Wave Seismic Exploration*. We are also proud that we addressed the career challenges facing our members by participating in or sponsoring a number of career outreach seminars. Another important area that our committee pursued was intersociety cooperation

with our sister societies such as American Association of Petroleum Geologists (AAPG), Society of Petroleum Engineers (SPE), and European Association of Geoscientists and Engineers (EAGE). This involves cooperation in the areas of continuing education, publications, meetings, and business office best practices.

Finally, SEG continued with the revitalization of the SEG Foundation Museum, which now comprises the physical museum, a traveling museum (which travels to various SEG conventions), and a virtual museum, which can be found on SEG's Web site at www.seg.org.

SEG Business Office. As I noted earlier, the SEG Executive Committee works very closely with Executive Director Paul Hummel and his staff in Tulsa. I first wish to mention several important staff changes this year. After a distinguished 37-year career at SEG, David Yowell will be retiring at the end of the year. I join with each of David's many friends in wishing him all the best in the future. Also, Bob Wyckoff will be retiring as manager of the Geoscience, Education and Membership Department. I also wish Bob a most successful future, although he will be continuing in a volunteer capacity at SEG. We are also pleased to announce that Jennifer Swanson recently joined SEG as our new manager of Geoscience Education. We are also very proud of the complete redesign of our Web site and the continued high quality of THE LEADING EDGE and GEOPHYSICS, as well as the many other publications that we produce at SEG. I also note with particular pleasure that our Annual Meeting in New Orleans set a new record for number of booth sales. In short, the SEG Tulsa Business Office continues to grow in new and exciting directions.

Committees. The SEG committees that report directly to the President include Advisory, Constitution and Bylaws, Election Procedures (ad hoc), Energy Council (AAPG-AAPI-SEG-SPE), Honors and Awards, Nominations, and Tellers. Input from the Past-Presidents who chair the Nominations, Advisory, and Honors and Awards committees has added vital feedback to the functioning of our Executive Committee. The Tellers Committee, chaired by Stephen Hill, has done an excellent job in overseeing the election vote counting. Also, Craig Beasley, representative to the American Geological Institute (AGI) Member Society Council, and Ben Thigpen, representative to the American Petroleum Institute (API) Telecommunications, report to the President, and provide valuable feedback to the membership from these related organizations. I also provide Executive Committee liaison for the Foundation Board of Directors, Trustee Associates, and the Annual Meeting 2000.

Foundation. The SEG Foundation continues to grow, and the year 1997-98 has seen its assets grow from \$5.8 million to \$7.1 million. This increase has come about due to the initiatives that were implemented by previous Executive Committees, such as the *Double Impact Matching Funds Program*. We should all be proud of the hard work done by our SEG Trustee Associates and Foundation Board in helping ensure the future of our bright young graduates through this fund.

International Conferences and Workshops. One major international conference was cosponsored by SEG this year, the Rio '99 Conference, which was held in conjunction with the Sociedade Brasileira de Geofisica (SBGf) and European Association of Geoscientists and Engineers (EAGE). In addition, SEG supported numerous other geophysical conferences and workshops through promotional services and free advertising. SEG also held its Summer Research Workshop titled *GEOINVERSION: Model-based Inversion Challenges the Technology Transfer*, in Taos, New Mexico, and the SEG Development and Production Forum titled *Time-lapse Measurement in Reservoir Management*, in Kananaskis, Alberta. These conferences were well received by all participants.

New Associations. This year the SEG welcomed the South African Geophysical Association as an Associated Society, as well as Ain Shams University and Kyoto University as Student Sections. We are also in the process of completing ties with seven other sections. This is an indication of the strong relationship that exists between SEG and geophysicists throughout the world.

Final Thoughts and Acknowledgments. This has been a roller coaster year for SEG, with oil prices dipping to record lows and bouncing back to much better levels later in the year. Considering this volatility, I am pleased with the way both the Executive Committee and the SEG Tulsa Business Office responded, as well as the strong support we got from all of our volunteer committees. As mentioned earlier, notable positive trends include the quality of our publications and Web site, the increased funding to the Foundation, and our new range of international and national educational programs. This leaves me with great optimism for the future.

Finally I want to say how much I have enjoyed working with your current Executive Committee. Bill Barkhouse, John Castagna, Orlando Chacín, Joel Watkins, Angie Stracner, and Larry Lines prove that the volunteer spirit is alive and well within our Society. The hard work, creativity, and enthusiasm that they have brought to their positions on the Executive Committee have paid huge dividends to our Society. Yes, it was hard work, but the memories built this year will last forever. On behalf of the 1998-99 Executive Committee, we all thank you for the honor of serving you over this past year. And, I wish the best of luck to Bill Barkhouse and the new Executive Committee for the upcoming year.

William (Bill) N. Barkhouse, President-Elect

1998-99 has been an exciting and fast moving year propelling the SEG toward the new millennium!!! I had the privilege of serving as liaison officer for eight SEG committees and as SEG's President-Elect to the Presidential Summit. The Presidential Summit comprises the Presidents, Presidents-Elect, and Executive Directors representing the American Association of Petroleum Geologists (AAPG), American Association of Professional Landmen (AAPL), American Geological Institute (AGI), European Association of Geoscientists and Engineers (EAGE), Society of Exploration Geophysicists (SEG), Society for Sedimentary Geology (SEPM), Society of Petroleum Engineers (SPE), and the Society of Professional Well Log Analysts (SPWLA).

I invite you to read the enclosed SEG committee reports in more detail. I will highlight key points from the vantage of President-Elect in this brief summary. First, please recognize these **outstanding committee leaders** with a personal thank you (through your letters, emails, or telephone calls): Ronald Ward, Annual Meeting Advisory; Richard Verm, Annual Meeting Steering Houston; Norman Domenico, Constitution and Bylaws; Diana Galindo, Exhibitors; Louis Schneider, International Association of Geophysical Contractors (IAGC); Alan King, Mining and Geothermal geophysics; Martin Brandt, Annual Meeting Funding; James Robertson, Offshore Technology Conference (OTC) Board of Directors, and E.O. (Woody) Nestvold, Offshore Technology Conference (OTC) Technical Program.

Ronald Ward captured SEG **Annual Meeting Advisory** "learnings" from prior years, particularly New Orleans (always a tough act to follow) for the benefit and improvement of upcoming Annual Meetings. To witness is to observe the "art" and "science" of selecting critical lessons for improvement. Ron made history in involving not one, but two, upcoming Annual Meeting Steering Committees, Houston and Calgary, demonstrating the working calendar "overlap" in preparation for SEG's annual main event!!!

Richard Verm has brilliantly guided the Houston **Annual Meeting Steering**, in what is considered to be "...one of energy's worst years..." while improving the quality of the Annual Meeting!!!

Norman Domenico had a busy year including the evaluation of three new applications for associated societies. With an ongoing and very high level of interest for affiliation and association with the SEG, does our **Constitution and Bylaws** adequately serve to continue and sustain SEG growth? It seems too!!!

Diana Galindo, working closely with SEG's Manager of Meetings and Expositions Bob Lewis, has continued to implement key recommendations from the exhibitors. The regular return of SEG's annual exhibitors, particularly in "down-turn years," continues to reflect the quality and success of SEG's Annual Meeting and Exposition!!!

Louis Schneider is working closely with the **International Association of Geophysical Contractors (IAGC)** in what will be a crowning business issue for the close of this decade and century, "Data Exclusivity."

Alan King and **Mining and Geothermal Geophysics** allowed me the privilege of liaison in recognition that I started my energy career in mining!!! I can personally attest that this is one of the most active and fun groups within the SEG!!!

Annual Meeting Funding at first glance seems an unlikely candidate for an ad-hoc committee. However, when looking to the future and recalling that the Annual Meeting is the number one source of SEG's income, it is critical to the health of the SEG to identify issues and challenges that will either strengthen or weaken SEG's financial ability to sustain its future programs. Marty Brandt has provided a significant first step in identifying key issues, from an Annual Meeting perspective, for use by SEG's Finance Committee.

SEG's leaders to the **OTC Board of Directors and OTC Technical Program** provide an extremely important venue for promoting geophysics. The impact of SEG's OTC efforts are phenomenal when measured in terms of "outreach" to an energy industry with many technical disciplines. Geophysics is the key "integrator" for multiple disciplines. Geophysics is also the source of fundamental "data" and "models" for sound science through geology and engineering!!! Jamie Robertson, Woody Nestvold, and Linda Zimmerman, along with their team, have captured world-class recognition for geophysics' contributions. SEG's OTC participation, as a founding member, provides many benefits including a significant portion of SEG's annual income.

Activities with **Intersociety Cooperation** accounted for more than a third of my time and attention this past year. This is a very high priority by the various memberships of the respective societies and reflects the continuing trend and demand for greater cooperation.

Progress to date reflects excellent cooperation and willingness to identify common areas for benefit. 1998-99 appears to have been a significant transition year in which there was more activity at the committee level with focused and specific topic agendas at executive levels. This high level of cooperation, unprecedented in our Society's history, looks very promising for SEG as it enters the new millennium!!!

I want to express my deepest appreciation to my colleagues of the Executive Committee, who always represented the highest standards and values of the SEG membership in our decision making. The SEG Business Office, led by Paul Hummel, continued to receive high recognition and praise by SEG members as measured in the outstanding positive ratings provided in this year's membership survey!!!

Please join me in wishing David Yowell, SEG's Director of International Meetings, and Bob Wyckoff, Manager, Geoscience, Education and Membership, a "great jour-

ney" in their retirement from SEG employment; we look forward to their continued full fledged activity as SEG members!!!

Finally, I wish to deeply thank Brian Russell and his remarkable wife Elaine, who have been outstanding mentors in preparing me to serve as President of the Society of Exploration Geophysicists in the new millennium!!!!

John P. Castagna, First Vice-President

Due to the economic climate this year, this Executive Committee was forced to focus more on fiscal matters and had less opportunity to concentrate on new initiatives. During the course of the year, we made many hard decisions and succeeded in balancing our budget. This all at a time when much of our membership needed us the most. Although we tried to be as proactive as possible to be of some aid to those of our members who are experiencing difficulties, it is fair to say that our efforts could be described for the most part as being insufficient and ineffective. As a Society, we simply did not have the means to do more without mortgaging the future by running a huge deficit. This is the dilemma that our current method of funding activities out of annual budgets ensures: When we most need to invest in new programs, we are least able to do so. In order to ensure that our Society remains financially healthy in an economically uncertain era, we must reexamine our current mode of funding activities.

First of all, it may be a surprise to many of our members that their \$70 annual membership fee pays only a small fraction of the SEG's annual operating expenses. By far, the most important source of SEG revenue is the Annual Meeting which in effect subsidizes Society activities which do not pay for themselves such as Continuing Education, research workshops, GEOPHYSICS, online services, the SEG Museum, international meetings, etc. Even THE LEADING EDGE does not pay for itself with advertising revenues. Each of these activities is funded on an annual basis from general revenues. In such an environment, should there be a precipitous drop in Annual Meeting revenues at any time (due to temporary economic conditions or perhaps a structural change in the way contractor marketing departments think) all but the most basic of SEG's membership services will have to be eliminated or the Society's cash reserves will be wiped out in a few years. So what is the alternative?

Most of my efforts this year have been focused on moving the Society toward a new paradigm for funding membership services which combines lessons I have learned both in industry and in a university environment.

These are:

- (1) If a service has the potential to pay for itself, make it a profit center. Human history has proven time and again that free enterprise is the most effective way to provide the best service to the most individuals in such a situation. The alternative is that a

well-connected activist minority, which views the service as entitlement or, worse, has vested interests, will control resource allocation to the detriment of the Society at large. This year, with the benefit of new accounting software and extraordinary efforts by the SEG Business Office, we have begun tracking fully burdened (i.e., including overhead) costs of various SEG activities and have worked toward the general goal of breaking even in a number of categories. This is at least a start and has already proven to be a valuable management tool.

(2) If a worthy service cannot pay for itself, create an endowment to support that activity in perpetuity. Through the SEG Foundation we have a mechanism that enables us to do this and have followed the lead of previous Executive Committees in diverting annual revenues toward this end. I would like to see such outstanding activities as the Distinguished Instructor Short Course (DISC) fully endowed by the Foundation and removed from our annual operating budgets.

(3) Certain services must be defined as a basic benefit of membership to be covered by the membership fee. As membership fee revenues are relatively small, we must be very selective in what those benefits are or increase dues accordingly. Currently, basic benefits available to all members include receipt of *GEOPHYSICS* and *THE LEADING EDGE* and access to the SEG Web site (available also to nonmembers). A large percentage of our members do not read *GEOPHYSICS* and yet we recognize the importance of the journal to the Society and profession. We are currently investigating this issue and will present our conclusions to the incoming Committee.

The Executive Committee has also wrestled with the issue of the Society's governing structure which (1) buries the Executive Committee in trivial matters and forces us into a reactive mode, (2) limits our ability to look forward and maintain continuity of purpose, and (3) provides us with infinite opportunity to micromanage. As a former standing committee member, I referred to the "fly-by-night" Executive Committee in writing in response to infernal meddling resulting in frequent ill-informed and misguided decisions being imposed upon us. My reward was election to the Executive Committee where I have now been one of those tempted to micromanage. As much as possible, the Executive Committee has tried to rely on the Society's committee structure to run the Society. If things were working properly, the Executive Committee would only provide strategic directions and hold the purse strings. New initiatives and researched recommendations for action or funding would come from the various standing committees. Things are currently far more haphazard. Sometimes this is the way it works, but more often than not, we are forced by the calendar to make decisions without proper committee input. Alternatively, it is equally common for standing committees to be nonresponsive to our requests. This cannot be allowed to occur in a well gov-

erned society. As Executive Committee liaison to various committees, I have seen the entire spectrum from dynamic to deliberate to slow to nonfunctioning. Upon my recommendation, one nonfunctioning committee was dissolved, and another new committee was formed. In general, the Executive Committee was most responsive to requests from dynamic committees, and I hope that future Executive Committees will similarly encourage and reward energy.

Orlando E. Chacín, Second Vice-President

Serving the SEG membership during this past year was a complex challenge; however, I must say that it was an enjoyable experience that I recommend to each one of our members.

Through teamwork with the rest of my colleagues on an excellent Executive Committee and the dedicated staff of the SEG Business Office, it was possible to support all the wonderful work of the chairmen and volunteers of the three SEG committees to which I was liaison officer. There were many accomplishments, both completing projects from the previous Executive Committee and also generating new ideas and programs. I will summarize the most relevant activities of each committee.

The **Student Section/Academic Liaison Committee** chaired by Kay Wyatt has done an outstanding job during the past year. Projects toward the main goal of attracting elementary and high school students to the geosciences have been superbly implemented. Now two SEG K-12 slide sets are available in three languages, and they are working to have more translations.

Similarly, more interest resulted from a successful contest, the SEG/EAGE Geo-Applet. A very international group of winners was represented in three main prizes and four honorable mentions.

A new program, the SEG Electronic Mentor with 42 electronic mentor volunteers, allows a direct exchange between students of all ages and our membership. It can not be better. I invite you to participate and play an active role in building a program that is critical to SEG's future.

Another great activity of this committee is the support of the International Science and Engineering Fair (ISEF). The 1999 event included 1140 projects from all 50 states and 49 other countries. The awards included a Distinguished Achievement Award, a second place, four Merit Awards, and one SEG Team Award.

All of these activities and other information can be found in the new SEG Student Connection Web page: **Student Connection Online**.

The **Research Committee**, chaired by Leon Thomsen, has continued the tradition of delivering high-quality products to our membership. This year's summer workshop on *GEOINVERSION: Model-based Inversion Challenges the Technology Transfer* was a very successful experience that combined traditional/new tech-

niques with new ways to work with multidisciplinary teams. Next year's workshop will be a joint SEG/EAGE effort on *Processing and Imaging with Converted Waves* and will be held in the United States. Additionally, eight workshops have been organized for presentation before and after this year's Annual Meeting in Houston.

In relation to storage/administration of the SEG/EAGE data set, a temporary solution has been found at the University of Houston. They are looking for a long-term strategy. Also, one Annual Meeting workshop will consider successor models and calculations.

The **International Affairs Committee**, chaired by Eulogio del Pino with Ali Tura as Vice-Chairman, introduced a proposal for a new organizational model that would facilitate SEG's international operations through geographical region coordinators. Each region would have two coordinators responsible for all Society activities in that region. They would serve as liaison to all SEG Standing Committees activities in the region and points for all activities of our sister societies such as European Association of Geoscientists and Engineers (EAGE), American Association of Petroleum Geologists (AAPG), and Society of Petroleum Engineers (SPE).

Joel S. Watkins, Vice-President

From my perch, the most important SEG-sponsored developments during the past year are the advances in intersociety cooperation and collaboration. These advances have taken place both at the committee and executive levels of SEG, AAPG, and SPE. They benefit geophysicists, geologists, and engineers both technically and monetarily.

The SEG Executive Committee initiated several intersociety efforts in 1998-99. The president and president-elect of SEG met with their counterparts in SPE and AAPG to discuss ways of improving communication and collaboration. Results of the meeting were summarized in the President's Page of April *TLE*. SEG also formed an ad hoc AAPG Advisory Committee to facilitate joint activities with AAPG. This contributed to SEG joining with AAPG in sponsoring a conference in Bali in October 2000. Four sessions at the Bali conference are being chaired and organized by SEG. Members of the SEG Executive Committee and staff also met with AAPG counterparts on several occasions to discuss collaboration in business and technical matters. Topics included ways of reducing overlap, reducing costs to society members, providing more and better services, as well as technical integration.

The SEG Development and Production and Interpretation Committee members should be especially pleased with all of this activity. For years, these committees have led the way, often alone, in intersociety cooperation and integration. The D&P Committee has led via its joint SEG-SPE summer D&P forums. This year the forum addressed *Time-lapse Measurements in Reservoir Management*.

Although most attendees were geophysicists or engineers, I understand that several geologists may have attended also. Joint sessions of the SEG Interpretation and AAPG Geophysical Integration committees have produced a long and varied list of jointly sponsored programs and publications. Among their many activities in 1998-99 was a very successful workshop on *Pitfalls of Seismic Interpretation* held in conjunction with the SEG Annual Meeting. This workshop focused on pitfalls in the era of workstations and 3-D visualization.

The 1999 Gulf Coast Technical Spring Symposium Committee and the Houston Geophysical Society addressed a very important multidisciplinary problem, *Exploiting Immersive Environments in Oil and Gas*. Immersion, a geophysics-developed visualization technology, is a powerful tool for studies of reservoirs, structure, stratigraphy, and subsurface physical properties. Geophysicists, geologists, and engineers benefit equally from these visualization tools.

The Technical Standards Committee stands like a rock in the seas of time, reminding all geophysicists of the importance of data exchange formats. In 1998-99, the TSC addressed problems ranging from updating the venerable SEG-Y format to establishing standards for exchange of gravity and magnetic data.

Angie I. Stracner, Secretary-Treasurer

It has been an honor, a privilege, and a rare pleasure to serve the SEG membership and the geophysical profession on the 1998-99 SEG Executive Committee. It has been a year of challenges and surprises for us all, as we were once again reminded that the only constant in this business is change. This year the Executive Committee struggled repeatedly with how best to balance providing useful services to the membership with keeping the Society financially sound and prepared to deal with the changes the future is guaranteed to bring. To do this we had to make many difficult and often painful decisions about the services the Society provides and to change the way these services are financed. I am extremely impressed with the creativity and dedication of my colleagues on this Executive Committee and with their passion to help the Society adapt and evolve to meet the changing needs of SEG members.

The major role of the Secretary-Treasurer is to chair the **Finance Committee**, which is responsible for overseeing the financial health of SEG and establishing the Society's financial policies. The other members of this committee are the two most recent past SEG Secretary-Treasurers. This year Steve Rutherford and Brian Spies provided essential insights based on their experiences. Because Brian is based in Australia, Finance Committee meetings were mainly virtual and handled via email. So when we needed to have the kind of discussion that required face-to-face interaction, we enlisted the advice and wisdom of an additional past-Secretary-Treasurer,

SARTAIN FISCHBEIN & CO.
CERTIFIED PUBLIC ACCOUNTANTS



Independent Auditors' Report

To the Executive Committee and Members
Society of Exploration Geophysicists
Tulsa, Oklahoma

We have audited the accompanying balance sheets of the Society of Exploration Geophysicists (the "Society") as of June 30, 1999 and 1998, and the related statements of revenue, expenses and changes in net assets and cash flows for the years then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. 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 includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our 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 June 30, 1999 and 1998, and the results of its operations and its cash flows for the years then ended in conformity with generally accepted accounting principles.

August 6, 1999

SOCIETY OF EXPLORATION GEOPHYSICISTS BALANCE SHEETS

June 30,	1999	1998
ASSETS		
Current Assets:		
Cash	\$226,361	\$264,310
Short-term investments	74,903	333,677
Accounts receivable, less allowance for doubtful accounts of \$22,500 in 1999 and 1998	663,540	913,744
Inventories	501,129	301,961
Prepaid expenses	222,006	324,348
Accrued interest receivable	33,172	33,451
Total Current Assets	1,721,111	2,171,491
Investments	3,326,444	2,813,467
Property, Furniture and Equipment:		
Land	489,605	489,605
Building	8,080,661	8,237,833
Furniture, fixtures and equipment	812,515	1,174,552
	9,382,781	9,901,990
Less accumulated depreciation	2,908,184	3,262,057
Net Property, Furniture and Equipment	6,474,597	6,639,933
	\$11,522,152	\$11,624,891
LIABILITIES AND NET ASSETS		
Current Liabilities:		
Accounts payable and accrued liabilities	\$583,536	\$356,039
Deferred revenue	2,710,169	3,254,616
Total Current Liabilities	3,293,705	3,610,655
Unrestricted Net Assets	8,228,447	8,014,236
	\$11,522,152	\$11,624,891

The accompanying notes are an integral part of these financial statements.

**SOCIETY OF EXPLORATION GEOPHYSICISTS
STATEMENTS OF CASH FLOWS**

	1999	1998
<i>Years Ended June 30.</i>		
Cash Flows from Operating Activities:		
Cash received from members and other	\$8,733,970	\$9,191,871
Cash paid to suppliers and employees	<u>(8,292,777)</u>	<u>(8,838,545)</u>
Net Cash Provided by Operating Activities	441,193	353,326
Cash Flows from Investing Activities:		
Purchases of property, furniture and equipment	(327,784)	(317,776)
Purchases and maturities of investments, net	<u>(151,358)</u>	<u>41,992</u>
Net Cash Used in Investing Activities	(479,142)	(275,784)
Net Increase (Decrease) in Cash	(37,949)	77,532
Cash, beginning of year	264,310	186,778
Cash, end of year	\$226,361	\$264,310
Reconciliation of Excess of Revenue Over Expenses to Net Cash Provided by Operating Activities		
Excess of revenue over expenses (expenses over revenue)	\$214,211	\$(132,710)
Adjustments to reconcile excess of revenue over expenses to net cash provided by operating activities:		
Depreciation	493,120	434,491
Unrealized gain on investments	<u>(102,845)</u>	<u>(200,427)</u>
Loss on disposal of property, furniture and equipment		
(Increase) decrease in assets:		
Accounts receivable	(405,882)	68,653
Inventories	<u>(199,168)</u>	<u>(62,076)</u>
Prepaid expenses	102,342	95,594
Accrued interest receivable	279	9,561
Increase (decrease) in liabilities:		
Accounts payable and accrued liabilities	227,497	(90,798)
Deferred revenue	<u>111,639</u>	<u>231,038</u>
Net Cash Provided by Operating Activities	\$441,193	\$353,326

SUPPLEMENTARY SCHEDULE OF NONCASH INVESTING AND FINANCING ACTIVITIES

Property, furniture and equipment acquired through an increase in accounts payable	\$	-	\$45,499
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The accompanying notes are an integral part of these financial statements.

**SOCIETY OF EXPLORATION GEOPHYSICISTS
STATEMENTS OF REVENUE, EXPENSES AND CHANGES IN NET ASSETS**

	1999	1998
<i>Years Ended June 30.</i>		
Revenue:		
Membership dues	\$1,009,682	\$860,350
Conferences and meetings	3,992,298	4,481,867
Publication sales and advertising	2,809,285	2,526,534
Continuing education	218,174	190,095
Investment income	228,924	359,439
Building lease operations	770,337	624,450
Other	<u>102,079</u>	<u>40,311</u>
Total Revenue	9,130,779	9,083,046
Expenses:		
Membership record services	294,950	460,461
Conferences and meetings	2,865,415	3,213,540
Publications	2,780,299	3,202,118
Continuing education	<u>402,104</u>	<u>282,221</u>
Total Program Expenses	6,342,768	7,158,340
General and administrative	1,251,583	895,793
Building lease operations	<u>893,005</u>	<u>624,493</u>
Total Expenses	8,487,356	8,678,626
Excess of Revenue Over Expenses Before Contributions to Foundation	643,423	404,420
Contributions to Foundation	(429,212)	(537,130)
Excess of Revenue Over Expenses (Expenses Over Revenue)	214,211	(132,710)
Unrestricted Net Assets, beginning of year	8,014,236	8,146,946
Unrestricted Net Assets, end of year	\$8,228,447	\$8,014,236

The accompanying notes are an integral part of these financial statements.

SOCIETY OF EXPLORATION GEOPHYSICISTS NOTES TO FINANCIAL STATEMENTS YEARS ENDED JUNE 30, 1999 AND 1998

1. ORGANIZATION AND 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, especially as it relates to exploration and research, 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 continuing education programs and technical meetings and providing other informational services.

The accompanying financial statements include the financial position, results of activities and cash flows of the Society. 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 purposes.

Cash Balances: The Society maintains cash balances at several banks. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to \$100,000. At June 30, 1999 and 1998, the Society had deposits in excess of the federally insured limit.

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

Investments: Investments consist of marketable debt and equity securities which are valued at their fair values in the balance sheet. Fair values for investments are based on quoted market prices. Unrealized gains and losses are included in the statement of revenue and expenses.

Property, Furniture and Equipment: Property, furniture and equipment is 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 revenue or expenses. Expenditures for maintenance and repairs are charged to expense as incurred. Major improvements are capitalized.

SOCIETY OF EXPLORATION GEOPHYSICISTS NOTES TO FINANCIAL STATEMENTS YEARS ENDED JUNE 30, 1999 AND 1998

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Property, Furniture and Equipment (Continued):

The lives used in computing depreciation are as follows:

Building	50 years
Furniture and equipment	3 to 10 years

Income Taxes: The Society is a not-for-profit organization under Section 501(c)(6) of the Internal Revenue Code and is subject to income taxes on unrelated business income. Based upon the allocation of costs as prescribed in the IRS regulations, no provision for income taxes was necessary for 1999 and 1998.

Transactions with Foundation: The Society leases building space as well as provides administrative services to the Foundation. The Society did not charge the Foundation for rent and administrative services in 1998 or 1999. Additionally, the Society donated \$429,212 in 1999 and \$537,130 in 1998 to the Foundation. Included in accounts receivable at June 30, 1999 was \$37,615, which was due from the Foundation. Included in accounts payable at June 30, 1999 was \$364,790, which was due to the Foundation.

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 owns the land and building where its administrative offices are located in Tulsa, Oklahoma. Office space which is not used by the Society is leased to other companies.

Use of Estimates: The preparation of financial statements in conformity with generally accepted accounting principles 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 revenues and expenses during the reporting period. Actual results could differ from those estimates.

**SOCIETY OF EXPLORATION GEOPHYSICISTS
NOTES TO FINANCIAL STATEMENTS
YEARS ENDED JUNE 30, 1999 AND 1998**

**1. ORGANIZATION
AND SUMMARY
OF SIGNIFICANT
ACCOUNTING
POLICIES
(CONTINUED)**

Reclassifications: Certain reclassifications have been made to the 1998 balance sheet to conform with the classifications used in 1999. These reclassifications had no effect on the change in net assets for 1998.

2. INVESTMENTS

At June 30, 1999 and 1998, investments were as follows:

	1999		1998	
	Cost	Market	Cost	Market
Cash management fund	\$ 74,903	\$ 74,903	\$ 233,021	\$ 233,021
Equity investments	1,326,638	1,635,162	1,170,000	1,274,018
Corporate bonds	1,687,058	1,691,282	1,587,058	1,640,105
Less short-term investments	<u>\$3,088,599</u>	<u>3,401,347</u>	<u>\$2,990,079</u>	<u>3,147,144</u>
Long-term investments		<u>74,903</u>		<u>333,677</u>
		<u>\$3,326,444</u>		<u>\$2,813,467</u>

**2. INVESTMENTS
(CONTINUED)**

The fair value of fixed income securities at June 30, 1999 by maturity, are shown below.

Due after one year through five years	\$ 706,309
Due after five years through ten years	<u>984,973</u>
	<u>\$1,691,282</u>

Investment income in the accompanying statements of revenue, expenses and changes in net assets consists of the following:

	1999	1998
Interest income	\$126,079	\$159,012
Unrealized gain on investments	<u>102,845</u>	<u>200,427</u>
	<u>\$228,924</u>	<u>\$359,439</u>

**3. PENSION AND
SALARY
REDUCTION
PLANS**

The Society sponsors a defined contribution pension plan which does not allow employee contributions. The Society makes contributions to the Plan based upon 4.5% of the employees' eligible wages.

The Society also 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.

The Society's expense under these plans was \$261,035 and \$254,802 in 1999 and 1998, respectively.

**4. FUTURE
RENTAL
REVENUE
UNDER
OPERATING
LEASES**

The Society leases approximately 75% of the office space in its headquarters building to unaffiliated parties under noncancelable operating leases. The following is a schedule of minimum future rental revenues from those tenants as of June 30, 1999:

2000	\$795,742
2001	705,213
2002	517,315
2003	157,868
2004	<u>4,289</u>

**SOCIETY OF EXPLORATION GEOPHYSICISTS
NOTES TO FINANCIAL STATEMENTS
YEARS ENDED JUNE 30, 1999 AND 1998**

**1. ORGANIZATION
AND SUMMARY
OF SIGNIFICANT
ACCOUNTING
POLICIES
(CONTINUED)**

Reclassifications: Certain reclassifications have been made to the 1998 balance sheet to conform with the classifications used in 1999. These reclassifications had no effect on the change in net assets for 1998.

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At June 30, 1999 and 1998, investments were as follows:

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2004	<u>4,289</u>

Jack Caldwell. I want to express my thanks to all of them for dealing with some really difficult financial issues this year. However, the Finance Committee's job would not be manageable without the extensive amount of work done by Jack Ingram, SEG Associate Director of Finance, and the Tulsa Business Office staff. I truly appreciate Jack's professionalism and am impressed with the wealth of experience and financial knowledge that he brings to SEG.

I'm pleased to report that SEG is financially sound and continues to provide the services that members depend upon. The audited financial statement for the fiscal year ending June 30, 1999 shows gross revenues of \$9 130 779, expenses of \$8 816 568, and net income of \$214 211. This net income is after a donation of \$214 212 to the SEG Foundation to support current and future programs that promote the science of geophysics. This good financial news is a result of a really successful Annual Meeting in New Orleans in 1998 and the efficient efforts of the SEG Business Office staff and the Executive Committee during early 1999. Maintaining a positive bottom line in a year that included such volatile oil prices is something that should encourage everyone.

This year I served as Executive Committee liaison for the Distinguished Lecture, Membership, and Foundation Scholarship Committees. Mike McCormack and Lynne Edleson cochaired the **Distinguished Lecture Committee** this year. In addition to selecting Robert Tatham and Geoff Dorn as the lecturers for 2001, the committee has proposed changes to the Distinguished Lecture World Tour concept to make it a more cost-effective way of providing the lectures to SEG's international audience. Hal Pardue chaired the **Membership Committee**, which has the task of keeping in touch with our 16 000-plus members. This year the Membership Committee conducted a member services poll and also investigated potential cooperative efforts with AAPG, including a proposal for joint membership class. The **Foundation Scholarship Committee**, chaired by Mike Seidner, helps SEG assist students pursuing geophysical careers. Thanks to continuing contributions and a growing number of endowments, the committee awarded scholarships to 114 students this year and increased the average scholarship size to more than \$1500. I urge you to read each of the committee reports to find out more details and to see how much work the committee volunteers accomplish for the Society.

During this year I also served as chairman of the newly created **Education Ad Hoc Committee**. Formed late in 1998 this committee was given the goal of designing a single large scholarship and proposing how such an award would be funded and administered. We are also charged with evaluating the inaugural year of the SEG Distinguished Educator Program and planning how best to continue this type of program beyond the year 2000. John Castagna, Orlando Chacin, and I are in the early stages of work on these topics. We're looking forward to making more progress toward these goals in the coming

year.

As I look back on the year, I am encouraged by SEG's progress in the areas of intersociety cooperation, education, and student activities. I am excited and somewhat overwhelmed by the amount of work that remains to be done. I'm looking forward to finalizing the education issues and to serving on the Finance Committee. Most of all I'm looking forward to continuing to work with all the great SEG volunteers who are dedicated to helping our profession grow and prosper.

Larry R. Lines, Editor

In completing my term as your SEG Editor, I am pleased to report that the journal *GEOPHYSICS* continues as the world's most prolific refereed journal of exploration geophysics. Its popularity with authors remains unsurpassed. There were 316 papers submitted from August 1, 1998 to July 31, 1999. The number of published papers is about 35 per issue or 210 papers per year, producing an acceptance/submittal ratio of about 2/3.

All papers undergo a rigorous peer review and almost all require some revision prior to publication. In order to handle this increasing stream of submitted papers, *GEOPHYSICS* depends on 61 volunteers and the equivalent of 4 full-time staff members. Editorial staff includes the Editor, 3 Assistant Editors, 43 Associate Editors, 11 Special Editors, and 3 Department Editors. For the 1998-99 term, the Editor was Larry Lines and Assistant Editors included Christopher Liner, Kurt Marfurt, and Bjørn Ursin. The team of Associate Editors included James Simmons, Kenneth Mahrer, Carl Sondergeld, Craig Jarchow, Randy Keller, Samuel Gray, Brian Spies, David Alumbaugh, Michael Hoversten, David Boerner, Mike Oristaglio, Xiaobo Li, Gregory Newman, Robin Newmark, Roelof Versteeg, Richard Hansen, George McMechan, Gary Olhoeft, Harold Yarger, Shanti Rajagopalan, Keith Hirsche, Zhijing (Zee) Wang, Steven Roche, William Abriel, Gary Margrave, Reinaldo Michelena, Victor Pereyra, Irshad Mufti, Mihai Popovici, Phillip Bording, Gérard Herman, Gerhard Pratt, Edward Krebes, Gerard Schuster, Matthew Yedlin, Raymon Brown, Ali Tura, Bee Bednar, Peter Cary, Panos Kelamis, Warren Ross, Enders Robinson, and Sven Treitel. Special Editors include David Butler, Darrell Connelly, Patrick Daley, Ayon Dey, Nicholle Carter, Robert Ferguson, Lawrence Gochioco, Irene Kelly, Eric Phinney, Alton Schultz, and John Stockwell. Department Editors include K. P. Sriram, Paul Docherty, and Eike Rietsch. The application of a rigorous editing process utilizes the talents of these individuals and a large team of reviewers.

The business of handling more than 300 manuscripts per year and publishing more than 200 requires the diligent efforts of dedicated staff members Sheral Danker, Judy Wall, Judy Hastings, Merrily Sanzalone, and Jennifer Cobb who report to Publications Manager Ted Bakamjian and Executive Director Paul Hummel at the SEG Business Office. Linda St. Pierre has supplied valuable on-site

administrative assistance for the Editor. The galley proofs have been capably handled by Mike Blechner and his staff at SCG.

The statistics for the 316 papers handled last year are given in Tables 1, 2, and 3 in this report. Table 1 indicates the country of origin for submitted manuscripts. The country with most submissions was the United States (127) with Canada being second in contributions (36). During the last year, there were considerable increases in contributions from Australia, the United Kingdom, and the Netherlands. Table 2 indicates contributions in terms of employer. The majority of papers come from universities (183), followed by research institutes (42). The remaining contributions come predominantly from service companies, oil companies, and government laboratories. Table 3 gives the statistics for turnaround time with reviews of papers. Although turnaround time continues to be a concern, we are heading in the right direction since we see slight decreases in turnaround time for review time and time for publication after acceptance. The increased number of papers has also led to

increased costs and increased page charges—especially for those papers exceeding eight journal pages.

Last year, the editorial staff stated a determination to make *GEOPHYSICS* more understandable to the membership without sacrificing excellence. Tutorials were chosen as an important vehicle for doing this. It is particularly gratifying that we have accepted 10 tutorial papers for publication in 1998-99. I believe that these tutorials will help to bridge the “technology comprehension gap” between theorists and practitioners.

THE LEADING EDGE (*TLE*), SEG’s popular monthly journal continues to provide heuristic descriptions of current geophysical topics. A comprehensive report of *TLE*’s progress is outlined in this annual report by Allen Bertagne. Other annual reports include those of Paul Docherty on Reviews and Eike Rietsch on Translations.

Several reference publications have been published in fiscal year 1999 and other books are expected to be published by the end of calendar 1999. Refer to Publications Committee Chairman Bill Dragoset’s report for listing.

Table 1: Origin of papers submitted for publication in *GEOPHYSICS* by country August 1, 1998 - July 31, 1999

USA	127
Canada	36
Australia	17
United Kingdom	16
Netherlands	14
Italy	11
Brazil	10
China	9
France	9
India	9
Taiwan	8
Norway	7
Germany	6
Korea	5
Russia	5
Israel	3
Japan	3
Spain	3
Egypt	2
Greece	2
South Africa	2
Switzerland	2
Belgium	1
Costa Rica	1
Czech Republic	1
Denmark	1
Finland	1
Saudi Arabia	1
Sweden	1
Turkey	1
Venezuela	1
Yugoslavia	1
Total	316

Table 2: Origin of papers submitted for publication in *GEOPHYSICS* by employer August 1, 1998 - July 31, 1999

Universities	183
Research Institutes	42
Service Companies & Manufacturers	22
Oil Companies	2
Governments	19
Industries	10
Consultants	8
Mining Companies	6
Retired	1
Total	316

Table 3: Manuscript handling statistics

Year	Avg. No. Days Required for First Review	Avg. No. Days Between Acceptance & Publication
1991-92	168	176
1992-93	155	181
1993-94	180	178
1994-95	155	210
1995-96	158	N/A
1996-97	133	N/A
1997-98	167	180
1998-99	161	177

Reports of the Standing Committee Chairmen

Advisory

Fred Hilterman, Chairman

The Advisory Committee consists of the five most recent SEG Past Presidents and exists to advise the SEG Executive Committee on issues raised by either the Advisory or Executive Committees. During the 1998-99 term, the Advisory Committee met twice. Two major issues were discussed. The first issue, which was initiated by an SEG Annual Meeting exhibitor, involved the formation of a more formal alliance with American Association of Petroleum Geologists (AAPG) and the Society for Sedimentary Geology (SEPM). An outcome from a formal alliance would be back-to-back scheduling of Annual Meetings for the three societies. This would allow exhibitors to attend both Annual Meetings with one space setup. The second issue concerned the development of new avenues to fund several SEG services that were initiated during the "good" times but were becoming difficult to fund during the slack periods of the last two years.

Annual Meeting Advisory

Ronald (Ron) Ward, Chairman

The Annual Meeting Advisory Committee is composed of the past and future General and Technical Program chairmen as well as the chairman of the Exhibitor's Committee. The committee meets twice a year: the last day of the Annual Meeting and during January following the Annual Meeting. The function of the committee is both operational and strategic. The operational aspects are an assessment of near-term changes in the meetings and an assessment of what "worked" and didn't. The committee recommends to future Steering Committees whether a change should be abandoned or improved. The strategic nature of the committee is to assess present and future strategic needs of the members of the Society and what tactics can we employ to meet these needs. Among the strategic issues highlighted by the committee are to increase the appeal of the program for interpreters, changes to appeal to our international membership, improved geophysical education of both teachers and future members of our Society, and an increased appeal to the business side of geophysics.

The meeting in New Orleans set many records including the largest exhibition ever, largest attendance outside

of Houston, and greatest net income for the Society. The meeting enjoyed the largest sponsorship to date, largely due to the robust conditions in our industry as we entered 1998. Wednesday evening entertainment with three different venues had an attendance of more than 4800, which is an unofficial record for this event. The International Showcase had 42 booths from 32 organizations in 27 countries. This program is clearly established as part of the convention.

Among the operational improvements is the use of the Internet for submitting, reviewing, and scheduling the Technical Program. The New Orleans Convention inaugurated eSUBMIT, which was replaced in 1999 by an improved process, EASE. The process is evolving and improving, although it is not perfected yet. Clearly, our current procedure is dramatically better than copying abstracts with a Xerox machine and sending them through the mail, as we did only a few years ago. While sponsorship income was the greatest of any meeting to date, sponsorship for Wednesday's evening entertainment and beverage breaks is increasingly difficult to obtain. Future meetings will not have Wednesday evening as a sponsorship item but cover this expense from the registration fee. The intent is to have this event appeal to a broad cross-section of the Society and have a party format. This format will emphasize food more than formal entertainment. Sponsorship will focus on those events that are most popular with sponsors such as the golf tournament, student reception, and science teachers program. A problem was encountered with the funding of the International Showcase in that the funding for this event comes during the final six weeks prior to the meeting. This makes it difficult to plan the overall size of this feature. The only remedy for this situation is to try to get funding earlier and not be hasty in scaling the program back if funding seems to be slow in coming.

Another change in the Annual Meeting was the appointment of a Manager for the Meeting, who is the single point of contact with the Business Office. This will work better than sharing responsibility as existed in New Orleans. Bob Lewis brings a wealth of experience to this position. Based upon the success of the 1998 Annual Meeting in New Orleans, the committee recommended that SEG return to New Orleans in 2006, the next available date, and seek to avoid prime hurricane season. SEG experienced heavy rains from a hurricane during move-in last year. Yet it fared much better than our sister society, the Society of Petroleum Engineers (SPE), which had to cancel its meeting two weeks later due to a hurricane.

Earlier, I mentioned four groups where SEG seeks to expand service: interpreters, geophysical businessmen, international members, and education of future members. This year several education functions were combined under a Science Education Chairman, raising this position to Steering Committee status. This chairman presided over an outstanding two-day training program for earth science teachers which was oversubscribed. For the first time, SEG presented a half-day program to introduce high school junior and senior science student majors to geophysics by a tour of selected presentations on the exhibit floor. The committee also works with the Academic Liaison Committee to organize the Student Reception for college geophysics majors. The special session *The Business of Geophysics* was inaugurated in New Orleans to serve those members who are most concerned with business rather than technical aspects of geophysics. It was held on Sunday afternoon and will move to Monday afternoon during the Houston Annual Meeting. We can only hope that this becomes as firmly established as part of the Annual Meeting as the International Showcase. Increasing the appeal of the Annual Meeting for interpreters is a major strategic goal. Workstation sessions have been used in the past with live interpretation systems. Installation of equipment for this program is quite expensive, and it serves a limited audience in a smaller setting. This year a different approach will be taken. For the first time, technical sessions will permit the use of PowerPoint presentations with images driven from a laptop. This is a format frequently employed within our companies and will aid interpreters in preparing interpretation presentations for SEG meetings. It is recognized that within their respective companies the interpreter's primary responsibility is finding prospects, not transferring technology as is the case for vendors, contractors, or researchers. Everything must be done to attract more quality presentations in this area. The appeal of International Showcase for international attendees has been addressed already.

Houston promises to be a strong meeting despite the backdrop within our industry of the consolidation of the largest companies and the resulting atmosphere of uncertainty. As we approach the next millennium, major changes in our industry and Society are occurring. The industry and world seem to both be shrinking. The Annual Meeting must keep up with and anticipate these changes to better serve our members.

Sixty-Ninth Annual Meeting

Richard Verm, General Chairman

What a difference a year makes. After a series of record-breaking Annual Meetings, the SEG International Exposition and Sixty-Ninth Annual Meeting to be held in Houston, Texas, must deal with the most severe industry setback since 1986. Perhaps the most difficult aspect of

this year's planning was what to expect in terms of revenue. Cautious optimism guided the Sixty-Ninth Annual Meeting Steering Committee and SEG staff through the budget process. Every member of the committee was painfully aware that hard decisions would have to be made.

Even as this report is being written, events are being eliminated or scaled back due to lack of funding. Fortunately, industry support was forthcoming, if somewhat reduced, for several programs. In particular the Student Reception, the Applied Science Education Program, and the International Showcase were sponsored at a significant level.

Despite the difficulties, the planning and execution of the Annual Meeting goes on. This year the Technical Program Committee made a bold move with the introduction of blind reviews. Submitted papers were reviewed stripped of authors' names and affiliations. In addition, the electronic submission process was reviewed and revamped. After a review of the problems encountered last year, key parts of the software and the submission procedures were modified. The changes to procedures and software permitted 581 papers to make the no-fooling April 1 deadline with minimum trouble.

In addition, for the first time, the Technical Program Committee decided to allow all papers in oral sessions the option of using computer presentations. Authors have enthusiastically embraced this option with 35% of the oral presentations using this format.

The Sixty-Ninth Annual Meeting continues to focus on business and international issues. *The Business of Geophysics* expands this year to two workshops. The topics range from small businesses and the role of the entrepreneur to the effects of industry-wide consolidation. CEOs of local exploration companies were targeted with a mailing campaign to promote the SEG convention. The goal was to make the uppermost management of these companies aware of the value in allowing their geoscientists to attend the Annual Meeting.

The International Showcase enters its fifth year with a strong program. Entirely funded by industry sponsorship, this year's showcase will be able to attract more than 20 countries to Houston.

The Applied Science and Education program continues with a brand new format. This year the focus is directed toward analysis of earth science data in the classroom. The goal is to demonstrate with lesson plans how to utilize freely available data off the Internet to teach the basic concepts of data analysis. Special attention is being directed toward the new NASA Earth Orbiting Satellites (EOS). To facilitate the transfer to the classroom, each teacher will be given a copy of a data analysis and visualization program along with a set of lesson plans.

Besides the technical and business aspects of the Annual Meeting, there is the social function. As in years past a full program of events has been planned. Both a golf tournament and a run/walk are scheduled. A delight-

ful social program has been creatively organized. One of the highlights of this program includes a Tuesday Brunch featuring entertainer Brian Black. On Wednesday night, all delegates are invited to stroll through the halls of the Houston Museum of Natural Science. A fitting setting for an evening of music, food, and fun, the Museum event gives friends and colleagues a chance to get together as a community.

In recognition of the state of our industry, the Sixty-Ninth Annual Meeting expands the traditional employment referral service to include a series of *Career Transition* workshops. These workshops are designed for small groups to enable the individuals who participate to receive personal attention. The goal is to provide both practical suggestions and motivational strategies to help those members caught up in today's economic turmoil cope with the changes.

Every Annual Meeting runs on the generous contributions of time and energy given by the volunteer members. The volunteers for the Annual Meeting Steering Committee are Merry Lynn Southers, Vice-General Chairman; Christopher P. Ross, Technical Program Chairman; Fred Aminzadeh, Dale Bird, Brian S. Anderson, Matthew Brzostowski, Arthur C. H. Cheng, Maarten de Hoop, Dan Ebrom, S. Jerry Kapoor, Ruben D. Martinez, Randy S. McKnight, Laurent Meister, Marc L. Sbar, Pravin M. Shah, Janet Simms, Len J. Srnka, Don W. Steeples, John J. Walsh, R. Daniel Wisecup, and Dennis S. Zukowski, Technical Program Committee; Marty Brandt, Special Events Chairman; Michael Deal, Jess Kozman, Randy Johns and Deborah Grieco, Special Events Committee; Debera Fontenot, Social Program Chairman; Donna Parrish, Emilie Fulton and Linnie Edwards; Social Program Committee, Jim Thomas, International Showcase Chairman; Cindy Gomez, Cathy Enomoto, Bridget Soukup, and Jim Medlin International Showcase Committee; Robert Ayers, Arrangements Chairman; Robert S. Dammer, Michael R. Cooper, George Lauhoff, Kari Mitchell, and Clare Bresnahan, Arrangements Committee; Mark Sparlin, Applied Science Education Chairman; Kristen Rush, Jamie Rayford, Mike Saathoff, Dallas Dunlap, Bill Okubo, and Ted Meyers, Applied Science Education Committee; Kay Wyatt and Kerry Sweeny, Student Sections/Academic Liaison Committee; Ron Ward, Sixty-Eighth Annual Meeting General Chairman; Neil Rutherford, Seventieth Annual Meeting General Chairman; Peter Cary, Seventieth Annual Meeting Technical Program Chairman; and Bill Barkhouse, President-Elect and Executive Committee Liaison.

In addition to the volunteer effort, untold hours of work have been poured into the Annual Meeting by the SEG Business Office staff. The Annual Meeting staff has been working on the Sixty-Ninth Annual Meeting continuously for the last year and a half. Bob Lewis in his new role as Annual Meeting Manager, oversees a most capable staff consisting of Debbi Hyer, Karen (Hulsebus) Wolf, Steve Emery, Jill Thompson, Naomi Haddock, and Trish Wacker. David Yowell and Pam Terekhova have provided

invaluable support for the International Showcase. Ted Bakamjian with his electronic publications staff, Peter Tierney, Christy McGill, and Ossie Moore have been outstanding with their support for eSUBMIT with EASE, the Technical Program CD-ROM, and the Web-based registration and program information.

Jim Lawnick, Judy Paull, Jack Ingram, John Van Gundy, Max Lewis, Cathy Sullins, and Stephen Casady all made special contributions to this year's Annual Meeting. Paul Hummel, Executive Director, provided invaluable support both in terms of advice and resources.

Constitution and Bylaws

Norm Domenico, Chairman

Constitution and Bylaws (C&BL) Committee members this past year were Steve Danbom, George McCalpin, and Bill Valenta (Vice-Chairman). All matters were handled effectively by email and, as before, no physical meetings were necessary.

The C&BL Committee was requested to review an application for SEG affiliation as an Associated Society from the Romanian Society of Geophysics (RSG). The RSG did not have the minimum number of 20 SEG Active Members among its membership to qualify for affiliation. It supplied names and addresses of 20 RSG members that presumably were eligible for SEG membership and requested that a sponsor be sought to pay annual SEG dues for these members. Comparison of the RSG bylaws (called "Statute") with the SEG Model Bylaws revealed that there are no provisions for: 1) code of ethics, 2) nomination of officers and elections, 3) duties of officers, 4) dissolution, and 5) parliamentary authority. The C&BL Committee recommended that, if the Executive Committee wishes to pursue this application, the first step is to obtain a sponsor to pay SEG dues for a period of at least three years. Further, if a sponsor is obtained, the RSG should be requested to revise its bylaws to be as nearly in conformance as possible with the SEG Model Bylaws.

An inquiry from the Society of Independent Professional Earth Scientists (SIPES) regarding "Associated and/or Affiliated Memberships in the SEG" was referred to the C&BL Committee for recommendations. SIPES stated that it has a total membership of 1364, of which approximately 75% are geoscientists, (about one-third are geophysicists) and 24% are engineers. Many of the geoscientists are SEG or AAPG members. Members are mainly in the United States, and there is a SIPES chapter in most "major oil cities." SIPES advised that it is a multidisciplinary society, all its members are independent, and that it is investigating the possibility of becoming an AAPG Associated Society. The C&BL Committee recommended that SIPES be invited to be associated with SEG as an Allied Society. Unlike requirements for affiliation as a Section/Associated Society, there are no official written

requirements for affiliation as an Allied (Affiliated) Society with the exception of a provision for dissolution (SEG Constitution Article XIV, Section 2). Phyllis Connor, of the SEG staff, advised that the basic intent of this type of affiliation is to exchange technical as well as nontechnical information and that the terms of the affiliation agreement can be as individual and varied as agreed upon by both organizations. Subsequently, SIPES returned a signed "Association Agreement between SEG and SIPES" identical to an SEG-supplied sample agreement prepared "for larger Association."

The C&BL Committee received for review an English version of the Constitution of the Society of Exploration Geophysicists of Japan (SEGJ) and a letter from SEGJ member Toru Takahashi to SEG President Brian Russell, stating that SEGJ wishes to affiliate with SEG as an Associated Society. A significant departure of the SEGJ Constitution from the SEG Model Bylaws is the absence of a clause for dissolution of the SEGJ. This requirement is specified in SEG Bylaws Article IX, Section 2. The SEGJ Constitution states in Article 35 that "The Bylaws for implementing this Constitution shall be stipulated separately upon voting at the Board of Directors Meeting, the Council Meeting, and the General Meeting of Members." Thus, it is possible the SEGJ Constitution as submitted does not encompass the complete rules for operation of the SEGJ. The C&BL Committee recommended that SEGJ be given the SEG Model Bylaws for review and requested to consider inclusion of a procedure for dissolution and, further, that it be established that SEGJ membership consist of at least 20 Active SEG Members.

Bob Wyckoff, of the SEG staff, requested that the C&BL Committee consider date changes in Bylaws Article VII, "Election of Officers," to accommodate the earlier-than-normal 2000 SEG Annual Meeting in Calgary. After some discussion, it was recommended that a Section 8 be added to read: "Dates specified in the foregoing sections are for an Annual Meeting scheduled for the first half of September. In the event the Annual Meeting is scheduled for another time, these specified dates may be advanced or delayed, as appropriate, by the Executive Director to accommodate the change in the date of the Annual Meeting."

The Kyushu University Geophysical Society (KUGS) in Japan submitted a petition for SEG affiliation as a student section. The petition, accompanied by the KUGS Constitution, was signed by 10 or more students as required by SEG Bylaws Article X, Section 1. The C&BL Committee determined that the KUGS constitution is in sufficient agreement with the SEG model constitution for student sections with one exception. The KUGS Constitution states in Article III, Section 4 that all KUGS members must also be SEG members. It was recommended that KUGS be advised that this is not an SEG requirement.

The chairman wishes to express his appreciation to the C&BL Committee members for their excellent advice and support, to Marge Gerhart, of the SEG staff, for her

timely distribution of pertinent correspondence and documents to committee members, and to Phyllis Connor, also of the SEG staff, for information on historical SEG procedures and for recommended actions.

Continuing Education

Don Herron, Chairman

During the past year (July 1, 1998 to June 30, 1999) the Continuing Education program has built on the previous year's successful introduction of the *Distinguished Instructor Short Course* (DISC). The CE Committee and SEG gratefully acknowledge the important contributions to this program by its first year's instructor, Ian Jack, and his course titled *Time-lapse Seismic in Reservoir Management*, Peter Duncan, DISC Subcommittee Chairman, and Dan Ebrom, past CE Chairman. This year's DISC, *The Seismic Velocity Model as an Interpretation Asset*, is being presented by Phil Schultz. To date, 930 people have attended this course at 8 sites in 3 countries, and future presentations are scheduled for 12 cities in 11 different countries.

For DISC 2000, Robert Garotta will present *Shear Waves from Acquisition to Interpretation*. Initial plans are to offer the course at approximately 20 sites around the world.

In pursuing its mission to provide educational services to the SEG membership, the CE Committee has concentrated effort on carefully defining and consistently following procedures for evaluating new course proposals. Nine requests for course proposal information were received in the second quarter of 1999 alone, and three proposals are currently under review. Four new courses were provisionally approved, and the following two courses were added to the curriculum for 2000:

- 1) *Seismic Signal Processing*—Mike Schoenberger
- 2) *The Magnetic Method in Mineral Exploration: Geomagnetism to Interpretation*—Shanti Rajagopalan (for presentation in the Eastern Hemisphere)

We look forward to these new courses providing important depth and breadth to the overall content and quality of the curriculum. We are attempting to raise the profile of the CE program via active solicitation of new course proposals by more frequent advertising and publication of course descriptions and reviews in *THE LEADING EDGE*. We plan to submit more CE material to *TLE* in the coming year.

During the year the committee was involved with the SEG Business Office in reevaluation of CE program costs, including course fees, logistics, and instructor honoraria. Through the efforts of committee Vice-Chairman Bob Bruce, the committee considered a proposal for accreditation of Continuing Education courses. As both committee chairman and co-instructor of a CE course, I have established and am striving to maintain an email network

with all CE instructors to keep them abreast of the Committee's activities and offer them an open forum for comments concerning content and direction of our program. In this way we hope to more closely involve instructors in the committee's work and recognize the significance of their roles in the success of the CE program.

In closing, I would like to express my appreciation to Ruth Ives and Bob Wyckoff, SEG Geoscience Education, and all of the current Continuing Education Committee members for their input and support throughout the year.

Development and Production

John Eastwood, Chairman

The Development and Production Committee (D&P) was established to encourage and support exchanges in geoscience and engineering technologies used in oil and gas field reservoir management. This is done through the sharing of the research and development of new technologies and sharing real-world field experiences via case histories related to development and production geophysics. These goals are achieved through the use of focused meetings, workshops, special issues of SEG publications, and interaction with sister societies.

Several major activities highlighted our efforts in 1998-99:

The D&P Committee continues to have an active role at the SEG Annual Meeting. Gene Sparkman arranged for the D&P Luncheon Speaker at the 1998 SEG. The topic was *Global Deep Water Opportunity and Challenge* given by David Lehman of Exxon. The luncheon was well attended. Björn Paulsson and Robert Withers cochaired the 1998 D&P workshop at the SEG. The workshop was well received with both posters and presentations from last summer's (1998) forum, *Increased Production through Improved Reservoir Characterization*.

Wayne Pennington organized the special *Development and Production* issue of THE LEADING EDGE in March 1998. This issue included some of the previous year's presentations from the D&P Forum as well as solicited papers related to development and production geophysics. We also continued to support the Offshore Technology Conference by assisting Woody Nestvold and his committee to find Development and Production talks suitable for the OTC.

Dan Ebrum and Phil Christie cochaired the Ninth Annual SEG Development and Production Summer Forum, *Time-lapse Measurements in Reservoir Management*, held in Kananaskis, Alberta, Canada, July 11-16, 1999. The forum was a resounding success with 93 participants. There were nine full sessions with topics ranging from *The Reservoir Engineer's Perspective to Interpretation Methods* and *The Road Ahead*. Dan and Phil organized an excellent Forum, which spawned

much discussion both during the "formal proceedings" and late into the evening in the Bighorn Lounge.

At this year's Annual Meeting in Houston the Development and Production Committee will again be very active. First, Phil Christie will be a presenter for *The Road Ahead* session, where he will provide a synopsis and analysis of this past year's D&P Forum that he cochaired. On Wednesday, November 3, at the Annual Meeting, Gene Sparkman has arranged for Jerry Wenzel, Manager of Deepwater, BP Amoco, to be the D&P luncheon speaker. His topic will be related to Gulf of Mexico Deepwater projects. On Thursday, November 4, Dan Ebrum, Phil Christie, and I will cochair the Development and Production Workshop at the Westin Hotel, which will be composed of seven select speakers from the D&P Summer Forum. As always, there will be plenty of time for discussion. Following the Workshop we will have our semiannual D&P committee meeting at the Westin Hotel. We welcome new members to the committee, so I invite you to come to the Thursday workshop and stay for the D&P committee meeting.

Finally, the Development and Production committee members and D&P presenters have been invited to participate in another post convention workshop sponsored by the SEG Research Committee on *Dynamic Reservoir Characterization and Production Optimization with Geoscience Constraints*. Dan and Phil will represent some of the outstanding issues related to this workshop topic as were expressed in the *Time-Lapse* D&P Forum which they cochaired. The D&P committee fully supports and endorses this initiative from the Research Committee and hopes to continue to foster more joint efforts with them in the future.

Next year the SEG Development and Production Summer Forum will be in Snowmass, Colorado, May 14-19. The Forum chairman is Ashley Francis. The title of the forum is *Quantitative Prediction of Reservoir Properties Using Geophysical Data*. The focus of this forum will be on the application of geophysical data for making quantitative predictions of reservoir properties such as porosity, lithology, saturation, and pressure (including their changes over time due to production) with particular attention to issues of measurement scale, error, and uniqueness. Ashley has been an active D&P Committee member and Forum Committee member for several years, and I am pleased that he accepted the nomination as Forum Chairman at this year's summer meeting.

In addition the SEG D&P Committee will cochair the joint SPE/SEG Summer Forum on *Deepwater Development and Production*. Jack Caldwell will be the SEG D&P cochair. Jack's previous experiences with the D&P Committee and the Research Committee, as well as his expertise regarding Deepwater Geophysics, make him an excellent cochair. We look forward to working closely with the SPE in organizing this Forum.

The Snowmass Forum will be the 10th Annual D&P Summer Forum. In the past 10 years the role of geophysics in development and production has increased

significantly. A significant proportion of geophysicists now find their primary job responsibility is related to development and production rather than exploration. The Development and Production Committee has several new initiatives planned for 2000 and beyond, and we welcome your participation to increase the role of Development and Production Geophysics in the Society of Exploration Geophysicists!

Finally, the Development and Production Committee would like to thank Dee Thompson and Ruth Ives (SEG staff) for their commitment to Development and Production Committee activities over the last several years. As well, we welcome our new SEG staff D&P representatives, Jill Thompson and Debbi Hyer. Jill and Debbi did an excellent job working with Dan and Phil for this past summer's forum, and we look forward to working with them in the future.

Distinguished Lecture

Lynne J. Edleson, Cochairman

Michael D. McCormack, Cochairman

David Johnston from Exxon served as the SEG's Spring 1999 Distinguished Lecturer. His lecture, *4-D Seismic: Can a difference make a difference?*, has been presented to 16 Sections/Associated Societies in the United States and at the Rio de Janeiro International Congress meeting in August 1999.

Jerry Harris of Stanford University was slated to be the Fall 1999 Distinguished Lecturer but regrettably had to withdraw recently for personal reasons. Because of the imminent startup of his tour, it was not possible to find a replacement, and so the Fall 1999 Distinguished Lecture program has been canceled.

The Distinguished Lecture Committee met on February 11, 1999 at the Mobil office in Dallas, Texas. The committee selected two SEG members, Robert Tatham and Geoff Dorn, respectively as the Spring and Fall 2001 Distinguished Lecturers. The Executive Committee approved the committee's recommendations at the end of March 1999, and the candidates have enthusiastically accepted the assignment.

The committee worked this year to add clarity to the implementation of the "World Tour." The guiding principle is that we want to make the Distinguished Lecturer service of the SEG available to an international audience. The financial principle is that we need to do this within a constrained Society budget. Additionally, for the benefit of the lecturers and SEG staff, there needs to be clearly defined structure and timing.

Our proposal is that the Spring (Fall) Distinguished Lecturer will continue to conduct the traditional lecture series to the Society sections. In the past the Distinguished Lecturers have occasionally made their presentations at the SEG Annual Meeting. Because of the large number of attendees at this event, the committee

consensus is this is an ideal venue for the DL presentation and should become a permanent part of the Annual Meeting. SEG would not fund the lecturers' trip to the convention—their lectures would be handled like any other speaker.

The following Fall (Spring) "term," the Distinguished Lecturer would make the presentation at an SEG-funded meeting in another country. This would allow coordination with other SEG activities in conjunction with the meeting and a predictable schedule for our lecturers. Further presentations could be made at locations near the meeting. This coordination could be done in conjunction with the International Affairs Committee. At the current level of funding, we could also offer one Distinguished Lecturer to the EAGE convention. We also recommend that the presentation be made available on the Web so that any member could access the information. This could be made early in the regular cycle and put on the Web prior to the following term.

Robert Brown and Lynn Comeaux, Technical Program Chairmen for the SEG's 1998 International Exposition and Annual Meeting in New Orleans, will serve as Cochairmen beginning at the end of the SEG Annual Meeting in November. Lynne Edleson and Mike McCormack shall serve on the Distinguished Lecture Committee until the close of the Annual Meeting in 2003.

Exhibitors

Diana Galindo, Chairman

The goal of the Exhibitor Committee is to help make the SEG Annual Meeting a success for exhibitors, delegates, and the Society of Exploration Geophysicists.

The 1999 Exhibitor Committee members are:

Micki Allen
Hilla Barzilai-Abileah
Steve Bircher
Chris Craig
Mary Kay Ellis
Judi MacDonald
Marc Pottorf
Ebb Pye

This year's committee worked to address the main concerns of exhibitors that included:

- Resolution of issues with contractors
- Better security
- Sponsorship recognition
- Prevention of early breakdown of exhibits
- Improved communication between exhibitors and SEG

Given the flooding that occurred in New Orleans during the 1998 Annual Meeting, many exhibitors had water damage to their crates. The committee, with the effective leadership of Micki Allen, assisted exhibitors in resolving these issues with the contractor. Working closely with the SEG Business Office, the committee addressed exhibi-

bitor security concerns and defined how to prevent exhibitors from bringing down their exhibits before the exhibit hours are ended. Working with Martin Brandt, sponsorship chairman, the committee had the opportunity to review sponsorship policies and ensure appropriate recognition for sponsoring companies. The Exhibitor Committee also took on the challenge of assisting the Annual Meeting Funding Ad Hoc Committee in obtaining funding for the afternoon beverage stands in the exhibit hall. Finally, better and additional communication channels between the SEG and exhibitors were established.

The close working relationship between the SEG Business Office and exhibitor representatives ensures a successful exhibition that will contribute to the standard of excellence established by past Annual Meetings. The latest booth sales indicate this will be the largest exposition ever held in Houston, exceeding the 1995 number of 1171 booth sales. As of early August, the number of companies participating is about 300.

SEG Foundation Scholarship

Michael H. Seidner, Chairman

The SEG Foundation Scholarship Committee met on April 27, 1998 at Exxon Exploration Company in Houston to select scholarship recipients for the 1999-2000 academic year. Scholarships to 114 students totaled \$174 250; 68 were renewals and 46 were to new recipients. We received a total of 167 applications. The committee is pleased to report success in increasing the dollar level of scholarship awards, raising the average award from \$1040 last year to \$1529 for 1999-2000, an increase of more than 45%.

The Foundation Trustee Associates secure scholarship funds in the form of annual contributions and endowments from corporations, individuals, SEG sections, and individual SEG members. Our ability to significantly increase scholarship awards for 1999-2000 was made possible through generous contributions and a special allocation of \$50 000 from the SEG Foundation. The complete list of scholarship recipients and donors for 1999-2000 is included at the end of this report.

Ongoing fund-raising efforts of the SEG Executive Committee and the Trustee Associates have successfully established a substantial endowment fund to finance geoscience education. Annual contributions, combined with these endowed funds, will allow the Scholarship Committee to continue increasing the size of scholarships. Many thanks to the Executive Committee, the Trustee Associates, and especially to the many contributors who continue to invest in the future of geoscience.

Scholarship Committee members who served this past year were Mary Jones, Bill Pearson, Richard Cieslewicz, Lynne Edleson, Jim Flis, Vicki Messer, and Mike McCormack. I take this opportunity to recognize the committee members for their support, dedication,

and enthusiasm throughout the year. Each committee member spends many hours reviewing and assessing the numerous applicants, along with their ongoing responsibility of communicating with all current scholarship recipients. I would also like to recognize past committee member Richard Schneider, who continues to provide the committee with historical perspective, enthusiasm, and guidance during the selection process. Finally, an extra special thanks to Marge Gerhart, who provides overall continuity and handles all of the major administrative tasks associated with the scholarship program. Marge is a pleasure to work with and made my task much easier over the past year!

SEG Foundation Scholarship Sponsors for the 1999-2000 Academic Year

Agarwal, Dave	\$ 1000
AGIP	\$ 1000
ARCO	\$ 1500
Born, Ted Memorial	\$ 1000
Bridges, Rutt	\$ 1000
Buckley Powder	\$ 750
Chevron USA	\$ 2500
Coffman, J. B.	\$ 500
Conoco Inc.	\$ 3000
Cottrell, Rodney	\$ 2000
Dallas Geophysical Society	\$ 1000
Denver Geophysical Society	\$ 2000
Exxon Production Research	\$ 7500
Forrest, Michael	\$ 1000
Geophysical Society of Alaska	\$ 500
Geophysical Society of Houston	\$ 8000
Geophysical Society of Oklahoma City	\$ 3000
Geophysical Society of Tulsa	\$ 3500
Grivetti, E. J.	\$ 1000
Harrison, James	\$ 2000
Hilterman, Fred	\$ 1000
Hohmann Memorial	\$ 4000
KEGS	\$ 1000
LaCoste	\$10 000
Landmark Graphics	\$13 000
Permian Basin Geophysical Society	\$ 2000
Phillips Petroleum	\$ 7500
Schlumberger	\$ 2000
Schneider, Richard	\$ 1000
Shell Oil Foundation	\$ 2000
Southwest Louisiana Geophysical Society	\$ 3500
Tilley, Aubra	\$ 6000
Veritas DGC	\$ 5000
Western Geophysical	\$ 8000
Worthington, David	\$ 2000

Source of Funds

Industry, Sections, Individuals	\$111 750
Other Individual Contributions	\$ 6000
SEG Foundation	\$ 50 000
SEG Permanent Fund	\$ 9680

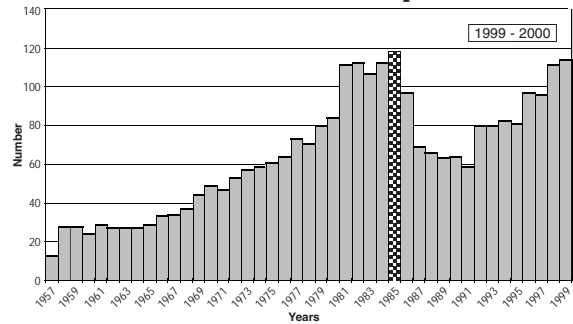
Sponsored Scholarships

Corporate	42
Individuals	12
SEG Sections	16
General Contributions and Foundation	
Fund Contributions and Earnings	47

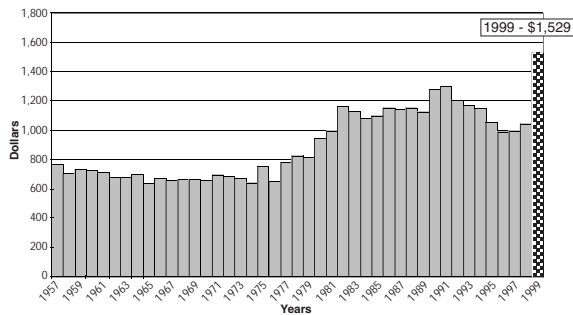
Funds Committed to Scholarships

Corporate, Individual, Section, Honorary, SEG Membership, Donations, and SEG Foundation Grant	\$177 430
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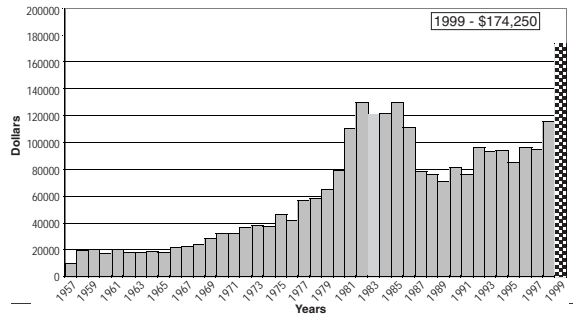
Number of Scholarships



SEG Foundation Average Scholarship Amount



SEG Foundation Contributions for Scholarships



Recipient	School	Award	Amount
Andy Aakhus-Witt	Colorado School of Mines	SEG General #8	\$1000
Adebola Adesida	University of Georgia	SEG International #1	\$1500
Jessica M. Arnoldi	Colorado School of Mines	Dallas Geophysical Society	\$1000
Stacey A. Axton	Colorado School of Mines	Michael Forrest	\$1000
Gregory D. Benson	Colorado School of Mines	Rutt Bridges	\$1000
		SEG Foundation	\$1000
Thomas W. Brady	University of Missouri at Rolla	Chevron-USA	\$2000
Eric M. Bressler	Wright State University	SEG Foundation #30	\$1500
Michael Brudenski	University of Illinois at Champaign-Urbana	Exxon Production Research #6	\$1500
		SEG Foundation #24	\$1000
Mun Keat Chan	Massachusetts Institute of Technology	Western Geophysical #4	\$2500
Yan Chen	University of Oklahoma	Geophysical Society of Oklahoma City #1	\$1000
He Chen	University of Oklahoma	SEG Foundation	\$500
		Western Geophysical #1	\$1000
Chong D. Chung	University of Tulsa	SEG Foundation	\$1000
		Exxon Production Research #3	\$1000
Elizabeth S. Cochran	University of Santa Barbara	SEG General #6	\$750
Kristie Cornell	University of Southwestern Louisiana	Veritas DGC #3	\$1000
Rucsandra Corbeau	University of Texas-Dallas	SEG Foundation #2	\$2000
Claire Currie	University of Western Ontario	Veritas DGC #5	\$1000
Adrian C. Dan	University of Bucharest	SEG Foundation	\$1000
		Southwest LA Geophysical Society #3	\$1500
Krishnendu Das	University of Southwestern Louisiana	SEG Foundation #29	\$1000
Wei-Li Deng	University of Chicago	Landmark Graphics	\$2000
Camelia C. Diaconescu	Cornell University	Phillips Petroleum #5	\$1000
Kelby J. Derenick	University of Arizona	Geophysical Society of Houston #3	\$1000
Mark C. Dober	University of Texas at El Paso	SEG Foundation	\$500
		SEG Foundation #22	\$1000
Sheridan Dodge	University of California-Los Angeles	SEG General #19	\$1000
Amanda Eads	University of Hawaii	Veritas DGC #4	\$1000
Todd A. Ehlers	University of Utah	SEG Foundation	\$1000
		SEG General #5	\$2000
Jacqueline S. Floyd	Lamont Doherty Earth Observatory	Phillips Petroleum #1	\$1500
Otina C. Fox	SUNY Fredonia		

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Recipient	School	Award	Amount
Oron Frenkel	University of California at Berkley	SEG Permanent Fund #11	\$1000
Eshetu Gebretsadik	University of Oklahoma	Schneider Award	\$2000
Tamara L. Gipprich	University of Michigan	SEG General #11	\$1000
Thomas J. Gorgas	University of Hawaii-Manoa	Phillips Petroleum #2	\$1000
M. Graziella Grech	University of Calgary	KEGS	\$1000
		SEG Foundation	\$1000
Jason Ethan Gumble	Colorado School of Mines	Aubra Tilley #1	\$2000
Matthew M. Haney	Colorado School of Mines	Landmark Graphics #1	\$2000
Monica Hartmann	New Mexico Institute of Mining and Technology		
		SEG Foundation #23	\$1000
Andrew Hastings	University of Missouri at Rolla	Geophysical Society of Tulsa #1	\$1000
		SEG Foundation	\$1000
Shane Hickman	University of Missouri at Rolla	Fred Hilterman	\$1000
		SEG Foundation	\$1000
Loren Hoffman	Massachusetts Institute of Technology	Phillips Petroleum #4	\$500
Jacqueline A. Hope	University of Western Ontario	SEG General #3	\$2000
David August Hollema	Colorado School of Mines	Hohmann Memorial	\$1000
John E. Hunyadi	Colorado School of Mines	AGIP	\$1000
		SEG Foundation	\$1000
Aleksandra G. Janik	University of Miami Rosenstiel School	Phillips Petroleum #3	\$1500
Sarah S. Johnson	Washington University-St. Louis	Shell Oil Foundation	\$2000
Timothy C. Johnson	Boise State University	SEG Foundation #42	\$1000
Jimmy R. Jones	Centenary College of Louisiana	Southwest LA Geophysical Society #2	\$1000
		SEG Foundation	\$500
Sara Kaps	University of Missouri at Rolla	Exxon Production Research #2	\$2000
Darcy Karakelian	Stanford University	Landmark Graphics #2	\$2000
Yin Ke	Tsinghua University	SEG General #34	\$500
Kerry W. Key	University of California-San Diego	SEG General #13	\$2500
Kimberly Kloppel	Colorado School of Mines	Conoco #2	\$2000
Ka Wai H. Lau	Dalhousie University	SEG General #33	\$500
Matthew D. Lengerich	Colorado School of Mines	Davis Worthington	\$2000
Jennifer M. Leslie	University of Calgary	SEG General #32	\$1500
Stefany B. Lewis	Colorado School of Mines	Veritas DGC #1	\$1500
Ben Lichtwardt	Colorado School of Mines	SEG Foundation #10	\$2000
Janessa M. Link	California Institute of Technology	SEG Foundation #21	\$1000
Yunqian Ma	Tsinghua University	SEG Foundation #28	\$500
Liu Linong	University of Petroleum of China	J. B. Coffman	\$500
Christine N. Malinowski	Millersville University	Landmark Graphics #7	\$1000
Ellen P. Mallman	University of Wisconsin-Madison	Phillips Petroleum #6	\$1000
Laura E. Marston	University of Wyoming	SEG Foundation #9	\$2000
Alan Masters	Colorado School of Mines	SEG Foundation #41	\$1000
Matthew J. McGinley	University of Wisconsin-Madison	Ted Born Memorial	\$2000
		SEG Foundation	\$1000
Jennifer C. McGuire	Texas A&M University	Carl Savit Award	\$2500
Jason R. McKenna	Southern Methodist	SEG Foundation #29	\$1500
Michael McNary	University of Notre Dame	E. J. Grivetti	\$1000
Bradley D. McHugh	Massachusetts Institute of Technology	SEG Foundation #18	\$1000
Meghan S. Miller	Cornell University	Landmark Graphics #6	\$1500
		SEG Foundation	\$500
Suzanne Moore	Colorado School of Mines	Dave Agarwal	\$1000
Matthew Morris	University of Missouri at Rolla	SEG General #6	\$1000
Julia Naumenko	Rice University	Geophysical Society of Houston #1	\$1000
		SEG Foundation	\$500
Patrice Nsoga Mahob	University of Oklahoma	Carl Savit Award	\$5000
Thang Nguyen	University of Oklahoma	Geophysical Soc. of Oklahoma City #2	\$1000
		SEG Foundation	\$500
Sean O'Brien	Rice University	SEG Foundation #20	\$1000
German Ojeda	Florida International University	SEG Foundation #39	\$1500
Shauna Oppert	University of Missouri at Rolla	ARCO	1500
Claire Perry	University of Western Ontario	Lucien LaCoste Award	\$10 000
Steve T. Paik	California Institute of Technology	SEG Foundation #25	\$1000
Robin L. Paarlberg	Colorado School of Mines	Veritas DGC #2	\$2000
Robin A. Pearson	New Mexico Institute of Mining and Technology	SEG General #37	\$1500
Lindsay L. Poth	Texas A&M University	Denver Geophysical Society #1	\$1000

Recipient	School	Award	Amount
Stanley J. Radzevicius	Ohio State University	Landmark Graphics #4	\$2000
Aisha R. Ragas	University of Oklahoma	SEG Foundation #7	\$750
Heather N. Ramsey	West Virginia University	Western #1	\$2000
Marcus A. Rollins	Macalester College	Conoco #3	\$1000
Justin L. Rubenstein	University of California-Los Angeles	SEG Foundation #14	\$2000
Debashish Sarkar	University of Oklahoma	Aubra Tilley #3	\$2000
Dawn A. Schippe	Colorado School of Mines	Buckley Powder	\$750
Romy D. Schneider	University of Texas at Austin	Exxon Production Research #1	\$1000
Jason Seger	University of Alaska	Geophysical Society of Alaska	\$500
		SEG Foundation	\$500
Shuo Sheng	Tsinghua University	SEG International #3	\$500
Catherine M. Snelson	University of Texas at El Paso	Permian Basin Geophysical Society #2	\$2000
Kyle T. Spikes	University of Kansas	Schlumberger #2	\$1000
Jeremy S. Strohmeier	University of Missouri at Rolla	Landmark Graphics #8	\$1000
Qiang Sun	University of Oklahoma	Aubra Tilley #2	\$2000
Shengjie Sun	University of Oklahoma	Geophysical Society of Oklahoma City #3	\$1000
		SEG Foundation	\$500
Kin-Man E. Sze	Colorado School of Mines	GSH-Henry Salvatori Award	\$5000
Martin J. Terrell	Colorado School of Mines	Landmark Graphics #5	\$1500
		SEG Foundation	\$500
Constantinos Tzimeas	Texas A&M University	GSH-Farren Award	\$3000
Daniel M. Ulmer	Princeton University	SEG General #35	\$1000
Erin L. Wallin	Colorado School of Mines	Jim Harrison	\$2000
Bujun Wang	University of Alberta	SEG General #1	\$2000
Doyle J. Webb	University of Missouri at Rolla	SEG General #12	\$2000
Jonathan A. Woolley	Colorado School of Mines	Conoco #4	\$1500
Rhonda Mae Yates	Mississippi State University	Schlumberger #2	\$1000
Hui Yan	Tsinghua University	SEG General #26	\$500
Beth Maria Yuvancic	Louisiana State University	Southwest LA Geophysical Society #1	\$1000
Hu Ying	Graduate School of RIPED	SEG International #1	\$500
Huagang Zhao	University of Petroleum, Beijing City	SEG Foundation #27	\$500
Fuping Zhu	Texas A&M University	Geophysical Society of Houston #2	\$1000
Mihail M. Zykov	Saint Petersburg State University	SEG Foundation #36	\$500

Gravity and Magnetism

Dale Bird, Chairman

Chuck Campbell, Vice-Chairman

The committee convenes twice each year, once in the spring (March 18, 1999 in Houston) and again at each Annual Meeting. The role of the committee in SEG and the exploration industry is to enthusiastically promote and expand the use of gravity and magnetism methods. Priority will be given to projects that encourage integrated geophysics in exploration and projects that educate the membership about these useful and necessary tools. This report summarizes the committee's activities and plans with regard to SEG Annual Meetings, publications, awards, continuing education, and committee projects.

The 1998 Annual Meeting in New Orleans was successful and well attended—reflecting overall increased exploration activity throughout the year as well as increased attendance from the mining community. Committee activities included two technical sessions, a luncheon, and a workshop. Brian Anderson leads our committee's representation on the Technical Program Committee for the 1999 Annual Meeting: three technical

sessions, a luncheon, and a workshop are planned. The Gravity and Magnetism Committee will sponsor one workshop. John Bain and Patrick (Pat) Millegan will convene a workshop titled *The Seismic Link: Reducing Risk*. Industry leaders in seismic and gravity and magnetism interpretation will be paired to discuss innovative ways to improve interpreting geophysical data. This year's Gravity Magnetic Technical Luncheon features astronaut Donald Petit. Michal Ruder has combined introductory and advanced courses into a single two-day continuing education course offered at the Annual Meeting.

The award-winning *Geologic Applications of Gravity and Magnetism: Case Histories* edited by Richard I. Gibson and Patrick S. Millegan, an AAPG/SEG joint publication, was a best seller at the 1998 Annual Meeting. For reviews see THE LEADING EDGE (*TLE*), July 1999. A few special issues of *TLE* that included extended sections for gravity and magnetic applications, beginning with January 1998, has led to a new *TLE* feature: "The Meter Reader." The general goal of this column is to address gravity and magnetism exploration issues related to education, application, and integration. A project to update SEG's first Monograph, *Gravity and Magnetism for Geologists and Seismologists* by L. L. Nettleton, is being led by Tom LaFehr and Stuart Hall. Since this book is an all-time SEG best seller, and Nettleton was one of our

committee's leading scientists, virtually all of the book contents will be unchanged; however, recent technologies and methods will be added as footnotes, sidebar boxes, or appendices. Initial chapters will be reworked, and the book should be ready by the end of 2000. The committee appreciates the efforts of its Publications Subcommittee Chairman Pat Millegan.

An SEG Special Commendation has been awarded to J. Derek Fairhead for his contributions to exploration industries and academia. Since 1986 he has directed the compilation of no less than 12 continental-scale gravity and magnetic database projects over Africa, South America, Europe, and Asia. The magnitude of each of these projects is staggering, involving millions of data records for each database. Academic research rights are embedded in each project agreement ensuring future studies. Congratulations Derek!

Significant committee projects include progress with regard to establishing technical standards for gravity and magnetics data and updating the committee's page in SEG's Web site. A subcommittee has been formed that is part of this committee as well as the SEG Technical Standards Committee to gather community consensus and formalize grid and line/point data standards. The current candidates for these standards are GXF and GDF respectively. Subcommittee members are Alan Reid, Dave Pratt, Mike Norris, Ian MacLeod, Richard Hansen, Chuck Campbell, and Dale Bird. Chuck Campbell and Nick Hoffman have completely reworked the committee's Internet Web page, adding versatility such as the ability for members to add/change/delete their own information interactively. The page offers information about the gravity and magnetics community, distributes information about the committee, and links to other gravity and magnetics oriented Web pages.

In Houston, gravity and magnetics specialists can also attend meetings of the local society, Geophysical Society of Houston Potential Fields Group, chaired by Mike Kowalski. I must agree with Mike and encourage all those involved with acquisition, processing, and interpretation of gravity and magnetics data to bring along a non-specialist to our various meetings. This will help educate explorationists about gravity and magnetics data, applications, and new technologies. Please note though, if you are a nonspecialist and wish to attend a meeting, there is no requirement to go with a specialist.

1999 Gulf Coast Meeting and Geophysical Society of Houston 1999 Spring Symposium - April 15-16

H. Roice Nelson Jr., General and
Technical Chairman

Exploiting Immersive Environments in Oil & Gas

Those who attended the 1999 Gulf Coast Meeting were treated to the introduction and to demonstrations

of the latest technologies for creating and using immersive environments in the oil and gas industry. In addition to E&P applications, there were presentations or demonstrations on using virtual reality at: NASA; The Gulf Coast Regional Maritime Technology Center; The University of Houston's Virtual Environment Technology Laboratory; MultiGen's urban simulation work; Baylor College of Medicine; POSC's Shared Earth Model (SEM); as well as related work at Carnegie Mellon University and Georgia Institute of Technology. The meeting was for two days—Thursday was spent in lectures at the University of Houston, Hilton School of Hotel Management, listening to formal presentations. On Friday, participants boarded four buses and toured eight sites around Houston to get a visceral understanding of what a state-of-the-art immersive environment is and is not. It cost \$80 to attend just the first day, \$100 for just the tour, and \$150 to attend both days, if registration was prior to April 9. On-site registration was \$100 for each day, and \$180 for both days. There were 56 attendees at the Thursday lecture and 74 attendees for the tour on Friday. Including cash donations, \$13 160.00 was the revenue to the Society. Expenses were \$6806.35, leaving \$4313.65 as net income to the Geophysical Society of Houston.

Immersive Environments are human-scale computer-generated projection systems (typically drafting table size or larger) that allow users to directly interact with their data in three spatial dimensions as well as across time or in N-dimensional attribute space. Hardware configurations start with large monitors with synchronized stereo glasses like those demonstrated at the Baylor College of Medicine Biomedical Computation and Visual Lab. The next larger hardware configurations are stereo drafting tables like those demonstrated at the VETL and the Pyramid Desk at Rice University. In addition, Pyramid demonstrated a small screen at Rice University that did not require stereo glasses to show 3-D images. Then there are large wall displays, like the rear-projected wall demonstrated at Veritas. Schlumberger-GeoQuest demonstrated an apse wall, or quarter of a sphere VisionDome with a front projecting fish-eye projector. Landmark Graphics and Texaco demonstrated dedicated facilities with curved screens and front projection of human-scale images. The largest and most expensive systems are multiple enclosing walls, like shown with the Continuum Resources CoReFlex Theater and talked about by ARCO, or the VETL's CAVE (Computer Aided Visualization Environment). In addition, Teneo Computing of Princeton, Massachusetts, demonstrated the SensAble haptic force-feedback device which provides users with the illusion of a physical presence in an immersive environment through force feedback against a small pen-like device.

Hardware and software options were described on Thursday, April 15th, and then participants were given an opportunity to experience the various options during an urban field trip on Friday, April 16. The agenda for the two days was:

April 15

7:30 a.m. Breakfast and Registration

8:30 a.m. Aerospace, Military, and Maritime
 Dave Homan, NASA Johnson Space Center, *Practical Use of Virtual Reality at NASA*
 John Cardner, Gulf Coast Regional Maritime Technology Center, *Visual Simulation of the Mobile Offshore Base, The World's Largest Floating Structure*
 Bowen Loftin, VETL, *Virtual Reality in Education, Medicine, and Engineering*

10:30 a.m. Automotive, Engineering, and Medical

Gary Crouse, MuSE Technologies, *Maximizing Human-Computer Interaction in Applications Ranging from Automobile Tire Design to Spatial Data Base Retrieval*
 Chris Hawking, Urban Simulation, *A Practical Implementation of Immersive Visualization*
 Dennis Moreau, Baylor College of Medicine, *Interactive Stereoscope Visualization to Understand Biomedical Sciences*

12:00 noon Lunch

1:00 p.m. Hardware, Software, and Service Centers

Doug Willie, *Enabling Collaboration*
 Fabian Bosquet, *Design and Implementation of a Geoscience VR Tool Kit*
 Ionas Kakadiaris, *Computer Vision Techniques for Data Interrogation and Representation*
 Dan Schenck, *An E&P Shared Earth Model...Meeting the Challenge*

3:00 p.m. Economics, Data Base, and Oil & Gas

Roger N. Anderson, Lamont Doherty Earth Observatory, *Immersion in the Business Side of E&P*
 Hovy Cox, *3-D Visualization and Virtual Reality*
 Mons Midttun, *Video from the Norsk Hydro Virtual Reality Center*
 Tracy Stark, ARCO, *Oil Industry Experience with Immersive Environments*
 Mike Zeitlin, Texaco, *Lessons Learned in Implementing Oil & Gas Vis Technologies*

April 16 Tour

Continuum Resources, CoRePlex Theater
 Rice University's Pyramid Desk inconjunction with T-Surf and Go-CAD
 Landmark Graphics Corporation, Decisionarium
 Schlumberger, VisionDome
 The Virtual Environment Technology Laboratory CAVE at the University of Houston
 Veritas Marine Surveys PowerWall
 Biomedical Computation and Visual Lab, Baylor College of Medicine
 Texaco Center (one or the other)

Videotapes for breaks and on bus tour between stops:

Continuum Resources, ICEMT, IEEE-VR-99, MuSE, Norsk Hydro, Schlumberger, SGI, VETL

The success of this meeting was due to the work and support of the organizing committee, and specifically Cheryl, Shane, and Dan. The organizing committee consisted of:

- | | |
|-------------------|---------------------------------|
| Cheryl S. Stevens | Arrangements Chairman |
| Shane Coperude | Volunteers Chairman |
| Scott C. Sechrist | Advertising Chairman |
| Tim Hartnett | Registration Chairman |
| Joe Stevens | Assistant Registration Chairman |
| Dan Ebrom | First Vice-President GSH |
| Jim DiSiena | Past General Chairman |
| Joan Henshaw | GSH Office/Meeting Support |

A questionnaire was prepared by the organizing committee and distributed on the buses at the end of the day. Results of the questionnaire are summarized in the following table, where 5.0 was the highest possible score for any specific area:

Company/ University	Informative	Innovative	Useful	Stimulating	Overall
Baylor	3.8	3.9	3.4	3.9	3.8
CoRe	3.9	4.1	3.9	4.0	4.0
Landmark	3.0	3.0	3.2	2.9	3.0
Rice	3.3	3.4	3.1	3.0	3.2
Schlumberger	2.6	2.7	2.4	2.6	2.6
Texaco	4.0	4.3	4.2	4.4	4.2
VETL	3.5	3.9	3.4	3.8	3.6
Veritas	4.0	3.8	4.0	4.0	3.9

A special thanks go to the symposium financial sponsors:

- Baker Hughes and Western Atlas for publishing and providing the proceedings
- Silicon Graphics Incorporated for providing buses for a tour of existing Houston systems

- Pyramid Systems for providing the box lunch for the tour
- Continuum Resources International Corporation for providing soft drinks for the buses and refreshments at the end of the day

An outline of the proceedings is on the Web at <http://gulfcoast99.seg.org> for the remainder of 1999. The Houston Geophysical Society ended up with a couple of hundred extra copies of the proceedings, which are available, ideally for a donation to the HGS Scholarship Fund or for use by educators. Contact Dan Ebrum or Roice Nelson, or stop by the HGS booth at the Society of Petroleum Engineers, or SEG this year in Houston. THE LEADING EDGE is planning a special issue summarizing and updating results from the 1999 Geophysical Society of Houston Spring Symposium.

My deep personal thanks go out to all contributing to the success of the 1999 Gulf Coast Meeting. Putting on an urban field trip requires support and contributions from too many people to mention in this brief report. You and I know who you are, and hopefully the internal satisfaction is sufficient. Thanks again!

Honors and Awards

Michael Schoenberger, Chairman

One of the most important functions of a professional society is honoring those who have made important contributions to the profession and to science. By unanimous agreement of the Honors and Awards Committee and the Executive Committee, the 1999 honorees are:

Maurice Ewing Medal: Gerald H. E. Gardner for his major contributions as a scientist and educator in the field of exploration geophysics and for his service to the profession.

Honorary Membership: M. Nafi Toksöz for his major contributions as a scientist and educator in the fields of rock physics, borehole geophysics, wave propagation, and computing.

H. Frank Morrison for his major contributions as an educator and for his role in transferring electromagnetic concepts to industry.

Virgil Kauffman Gold Medal: Eivind W. Berg, Bjørnar Atle Svenning, and James E. Martin for demonstrating that high-quality, high-density marine shear-wave data can be acquired by recording converted waves at the seabed.

Enterprise Award: Harold (Andy) Hildebrand, Robert S. Limbaugh, John O. Mouton, and H. Roice Nelson Jr. for founding Landmark Graphics, which revolutionized the manner in which seismic data are interpreted.

Reginald Fessenden Award: James E. Rickenbacker and John J. Sallas for developing ground-force control for seismic vibrators, technology that resulted in

deterministic source signatures and caused a step change improvement in vibrator seismic data quality.

J. Clarence Karcher Award: Kenneth H. Matson for his exceptional work on the very difficult problem of attenuating both free-surface and internal multiples, noises that seriously contaminate seismic data in many marine settings.

Andreas Rüger for exceptional research on analyzing reflection coefficients and seismic amplitudes in anisotropic media.

Life Membership: Peter M. Duncan for his many contributions to SEG's Continuing Education program.

Kay Dautenhahn Wyatt for her exceptional services to the Society in several areas, most notably in education.

Special Commendation: Carlos A. Dias for his exceptional professional leadership in establishing graduate geoscience programs at several Brazilian universities as partnerships between the universities and Petrobras.

J. Derek Fairhead for his numerous compilations of oil-company and public-domain gravity and magnetic data.

Mike Gaul for his meritorious service as an SEG and industry educator.

Distinguished Achievement: Exxon Production Research Company for inventing and developing 3-D seismic exploration, the most important geophysical innovation of the past 30 years.

Best Paper in GEOPHYSICS 1998: *3-D seismic attributes using a semblance-based coherency algorithm* by K. J. Marfurt, R. L. Kirlin, S. L. Farmer, and M. S. Bahorich.
Honorable Mention:

3-D symmetric sampling by G. J. O. Vermeer

Bounds on low frequency seismic velocities in partially saturated rocks by G. Mavko and T. Mukerji

Smiles and frowns in migration/velocity analysis by J. Zhu, L. R. Lines, and S. Gray

Some remarks on surface multiple attenuation by W. H. Dragoset and Z. Jeričević.

Best Paper Presented at the 1998 Annual Meeting:

Improving prestack imaging by using a new ray selection method by David E. Nichols; coauthors: Paul A. Farmer and Gopal K. Palacharla

Honorable Mention: Ground truth results of 3-D prestack subsalt imaging for structure and stratigraphy by William L. Abriël; coauthors: David C. Bartel, Elisha A. Buckner, Greg S. Raskin, and Joseph P. Stefani

Best Poster Paper Presented at the 1998 Annual Meeting:

3-D seismic survey design as an optimization by Christopher L. Liner; coauthors: William D. Underwood, and Ralph R. Gobeli

Honorable Mention: Symmetric Alford Diagonalization by Joe A. Dellinger;

coauthors: John T. Etgen and Bertram J. Nolte

Best Student Paper Presented at the 1998 Annual Meeting:

Separating aeromagnetic anomalies using wavelet matched filters by Thomas Alan Ridsdill-Smith, University of Western Australia

Awards of Merit:

Improving seismic resolution with nonstationary deconvolution by Alana R. Schoepp, University of Calgary

Focusing of inversion images by Oleg Nikolaevic Portniaguine, University of Utah

Best Student Poster Paper Presented at the 1998 Annual Meeting:

Comparison of imaging in anisotropic media using P-wave and S-wave data by M. Graziella Kirtland-Grech, University of Calgary

Award of Merit:

Land vertical cable acquisition and analysis: Results from the Blackfoot high-resolution 3-C seismic survey by Jitendra Sudeshkuma Gulati, University of Calgary

I extend, on behalf of the Honors and Awards Committee, congratulations to the distinguished recipients of these honors and awards, and thank them for their contributions. The Honors and Awards process succeeds by receiving nominations from individual SEG members, SEG Sections and Associated Societies, and SEG committees. We thank all who submitted nominations for 1999 awards. Nominations for those who were not selected will be retained for consideration by future Honors and Awards Committees.

Nominations are researched by members of the committee, relying on colleagues to provide insight into their special areas of expertise. Those nominations that receive unanimous approval by members of the committee are submitted to the Executive Committee for unanimous approval by its members.

The Honors and Awards Committee comprises the past five SEG Presidents, who, this year, are Michael Schoenberger, Jamie Robertson, Gordon Greve, Fred Hilterman, and Rutt Bridges. Chairing this committee concludes my Presidential obligations to SEG in a most satisfying fashion. It has been a pleasure working with the other members of the committee, who are both talented and dedicated to SEG.

International Affairs

Eulogio Del Pino, Chairman

The International Affairs Committee has been trying to improve the way in which SEG can serve its international membership and the international geophysical community. The report highlights some of the actions taken over the 1998-99 year. I thank Ali Tura, vice-chair-

man of this committee, and Pamela Terekhova for assisting in the implementation of the ideas proposed by the committee this year.

The activities of this committee have been organized in the last few years in the following four sub-regions:

Region I: Africa and Middle East

Region II: Asia (South and East) and Australia

Region III: Europe (East and West) and CIS

Region IV: Latin America

Although SEG has an International Affairs Committee, each subcommittee of SEG deals with international issues independently. This structure makes it difficult to coordinate international representation of SEG. Fundamental changes in the structure of the organization are urgently required to allow coordination between the different committees, awareness of international events, and appropriate representation of our international members.

Based on this need, IAC brought a proposal for reorganization of SEG to the Executive Committee. The proposal was published in the June issue of THE LEADING EDGE.

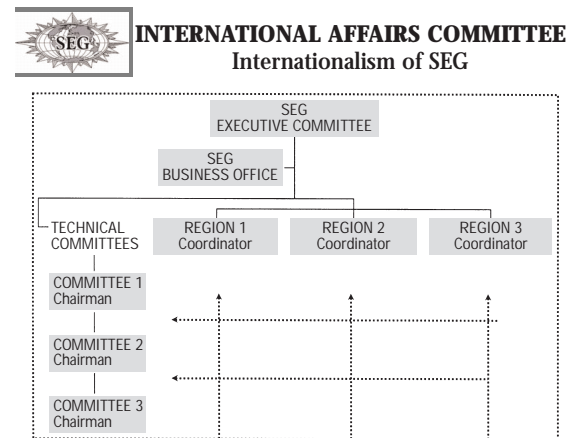


Figure 1: Reorganization of the SEG by geological regional coordinator allowing all international activities to be aligned.

In the proposed structure (Figure 1) geographic region coordinators would communicate with the SEG Executive Committee and all other committees to facilitate any business in their regions. Members of the Executive Committee would be the liaison to each coordinator of those geologic regions. The geographic regions could be the following:

- Northwestern United States and Canada
- Southwestern United States
- Northeastern United States
- Southeastern United States
- Latin America
- Southern, Central, and Eastern Europe

- Middle East
- Africa
- Asia
- Australia

Each geologic region would have two chairmen, one of whom would have to reside in that region. The responsibilities of the elected chairman for the geographic regions would be to:

- Attend a geographic region meeting per year
- Promote SEG within their region
- Interact with associated sister societies (AAPG, SPE, EAGE) and sections in their region
- Appoint and coordinate country representatives from their region to assist with:
 - Conferences supported by SEG by appointing an SEG member to the Organizing Committee
 - All SEG education programs (CE, DISC, Lecturer, Educator)
 - Coordinate publicity, promote membership, and provide information on SEG services
- Serve as liaison to all SEG standing committees for activities in the region
- Coordinate DISC, Distinguished Lecturer, and Distinguished Educator programs
- Organize a regional event at the Annual Meeting
- Work with International Showcase (IS) Committee for selection and sponsorship of appropriate exhibitors from their region
- Coordinate with *TLE* on special editorial sections about their region
- Maintain and update the Web page for their region

Finally, I acknowledge the support and encouragement of the Executive Committee at all IAC events and for ideas proposed during last year.

Interpretation

Gary Yu, Chairman

The Interpretation Committee is truly an integrated committee in that our members come from many disciplines and practice skills to face various challenges of exploration and production. The Interpretation Committee and her sister committee the AAPG Geophysical Integrated Committee, traditionally hold joint meetings to exchange ideas and pursue common interests. We normally meet on Sunday morning prior to the annual meetings of SEG and AAPG at the headquarters hotel. Many of our members are in both societies and are on both committees. The SEG IC continues its goal to serve the interpretation community by encouraging interpreters to publish their case histories in SEG journals, promoting continuation, and sponsoring workshops. Facing today's competitive environment, the SEG IC wants to be the sounding board of what interpreters want, the conduit of providing what services they need, and the catalyst of making their jobs easier.

The IC is very active in helping its constituents. Fortunately we have quite a few active members who form subcommittees to focus on special needs or organize workshops during the annual conventions. We also have members who attend the meetings and make their contributions. Without them, this committee would not be where it is today. Nevertheless, we are always looking for new ideas and people who are willing to contribute their time.

This past year the SEG IC sponsored two workshops at the Annual Meeting. Steve Henry and Gene Sparkman organized a *Pitfalls in Seismic Interpretation* workshop. We also cosponsored with the Research Committee another workshop *The Future of 3-D Seismic Interpretation and Visualization* for which Tracy Stark and Chris Thompson were the organizers. Both workshops were very successful. A thousand thanks to those involved in the workshops, particularly panelists. Strong interest was also expressed from many workshop attendees for having another workshop on *Pitfalls in Acquisition* or *Pitfalls in Seismic Processing* at a future meeting. Another exciting development followed the Annual Meeting, the Seismic Interpretation Pitfalls Subcommittee (SIPS) is providing our members with access to an updated *Pitfalls*; Gene Sparkman, Roger Entralgo, and Steve Henry proposed and received a \$20 000 grant from the SEG Executive Committee to set up an online pitfalls services. We are hoping to have a working online version up and running by the SEG Annual Meeting in October. In addition, a series of pitfall articles is planned for *THE LEADING EDGE*.

We are also more active in helping to keep interpreters current and broaden our members' visions through publications. M. Ray Thomasson continued to lead the efforts to solicit papers for the *Geophysical Notes for Geologists* which appears in the *AAPG Explorer*. He has also teamed up with Lee Lawyer to generate a *Geologic Column* that appears in *THE LEADING EDGE*. The columns provide tutorial-type articles with good illustrations and simple examples that are very popular with our members. *TLE* reports that advertisers are requesting that their ads be placed near the *Geologic Column*. *TLE* and *Explorer* articles may become less regular than the current monthly timetables but will continue as long as good papers can be found. Possible reprinting of *Geophysical Notes* as a separate volume has also been considered after a review of any missing topics considered to be needed to round out the volume.

Earlier this year, we updated our member roster. A current list of members, addresses, email addresses, and phone numbers in MS Excel will be sent to each member in the fall. For those of you who are interested in joining, please contact me at: gyu@elfexp.com. I would like to hear your suggestions. What would you like to see? What would you like to help on? What else can we do for you to make your life easier?

THE LEADING EDGE Editorial Board

Allen Bertagne, Chairman

After several years of evolution, the content, structure, and look of THE LEADING EDGE has now reached a point where the Editorial Board and staff are relatively satisfied. The breadth of material ensures there is "something for everyone," the regular sections provide some predictability, and the cover, internal layout, and perfect binding make for an attractive magazine that most members want to keep around and refer to regularly. Several recent issues of *TLE* have received high praise from the Executive Committee as well as other members. Perhaps the highest praise came from a speaker at the 1999 Development and Production forum who stated on a slide "Everything I know about Time-Lapse 3-D, I learned from THE LEADING EDGE" with a picture of the appropriate *TLE* cover!

The concept of the Special Sections continues to work well in 1999, and there have been many excellent issues. Particularly notable were the issues on Deepwater (April), West Africa (May), and the multicomponent issue (which will appear in the November issue). The Special Sections continue to be popular with both the readership as well as advertisers. A great part of the credit for the Special Sections belongs to the guest editors who have in-depth knowledge of the topics being covered and coordinate many aspects of the issue.

Given the low oil prices in early 1999, the financial aspects of *TLE* become a focus for the Board. Early in the year, it appeared that advertising revenue for *TLE* would be down, and the Board was asked by the Executive Committee to try to avoid the possibility of *TLE* losing money (while maintaining the quality of the publication). At the February meeting, financial projections showed an expected loss for the year. The Board went on record as being committed to keeping *TLE* "in the black" and proceeded to implement some cost-cutting measures. Most significantly it was agreed that each issue of *TLE* would be restricted to 112 pages unless advertising revenue paid for any extra pages. By the time of the July meeting, it appeared that the Board's actions had started to take effect and the new projections showed *TLE* to again be profitable and going forward.

At the Annual Meeting Allen Bertagne will have completed his four-year term on the Editorial Board and will hand over the Chairman's reins to Guillaume Cambois. As of the time of writing, the selection of Bertagne's replacement was in progress and the goal was to try to choose an individual with an interpretation background that could continue to represent the "average" reader.

Dean Clark, Dolores Proubasta, and the rest of the *TLE* staff continue to do the majority of the work related to *TLE* and ensure the smooth day-to-day running of the

magazine. While the Board sets the overall philosophy and makes specific contributions or decisions, the staff's role is well recognized and appreciated.

There is every expectation that *TLE* will continue to provide timely, high-quality material and that the magazine will remain one of the major benefits of being a member of the Society of Exploration Geophysicists.

Membership

Howell W. Pardue, Chairman

This has been a very interesting and gratifying year for me as the chairman of the Membership Committee. I started the year off by attending the meeting of the AAPG Committee on Committees as an invited representative of the SEG. The meeting was very productive, and one idea that came out of this was the proposal to both SEG and AAPG Executive Committees that a joint Membership be offered to our members with one dues statement. Later I attended the AAPG Membership Committee meeting in San Antonio where, by unanimous vote, the committee approved the joint dues concept. The proposal was then referred to the AAPG Executive Committee for further action. I must stress, however, that the idea is still in the investigation stage and that we welcome your input.

Along with all the excitement of cooperative effort between AAPG and SEG have come difficult and sobering times with the oil-price shock and the mergers of many of the world's largest oil companies. This has contributed to the relocation and, in many cases, the dislocation of some of our members. As I write this, the geographical activity in the United States is near an all-time low. But there has been a significant increase in product prices with many of the mergers being complete; thus, industry expectations for the last quarter of 1999 are positive.

During the past year, the Membership Committee members have conducted an informal poll in their geographical areas concerning the service that SEG offers. Almost all members agree that SEG serves them well, but there are a few hot button issues that we need to be aware of, such as the SEG Web site, publications, and the museum. These issues invoke the most passion. Many of the comments were very constructive and were passed along to the Executive Committee.

The SEG membership, as of June 30, 1999 and including all classes of membership, stands at 16 784, an increase of 1285 over last year's count. This seems to indicate a healthy growth rate. If you analyze the sector where the growth is the most pronounced in Figure 3, you will note that it is the Associate Member category. This increase in part should be credited to the ongoing initiatives that the leadership of SEG has put in place. I want to encourage all qualified Associate Members to upgrade their membership status to Active and become

voting members. As shown in Figure 4, the Non-U.S. share of the SEG membership continues to grow at a very healthy rate. A small dark cloud is on the horizon as the number of members who are included in the membership total but have not yet renewed their memberships this year has increased by 1089 when compared to the same period last year. In the attached figures the membership numbers are broken out both currently and historically. As you can observe, the SEG is healthy and back on a positive track after the swoon of the early part of this decade.

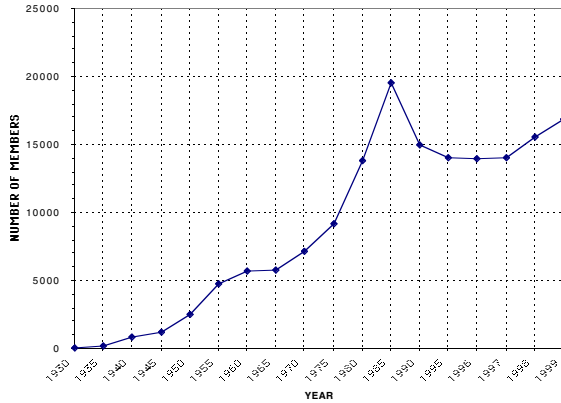


Figure 1. Total SEG members as of June 30, 1939-99

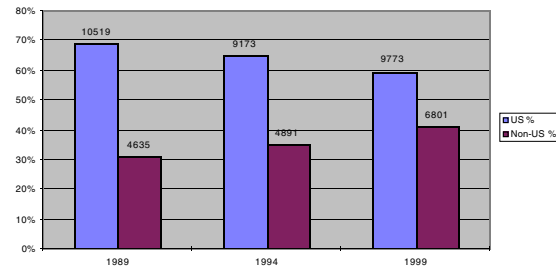


Figure 2. Membership Percentage & Counts U.S. vs. Non-U.S.

	1997-98	1998-99
Active Members	8692	8749
Associate Members	5654	6692
Student Members	958	1131
Corporate	285	300
Total	15589	16874
Membership as of June 30	14093	15589
New Members Elected	2234	2023
Reinstatements	274	292
Deaths	-58	-45
Resignations	-87	-118
Dropped (nonpayment of dues)	-867	-867
Total	15589	16874
Net (Decrease)	1496	1285

Figure 3. Membership Report: Fiscal Years 1997-98 and 1998-99 (July 1-June 30)

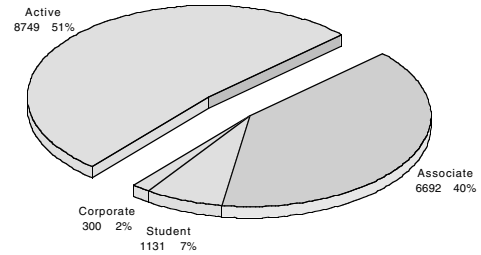


Figure 4. Membership by Classification — 1999

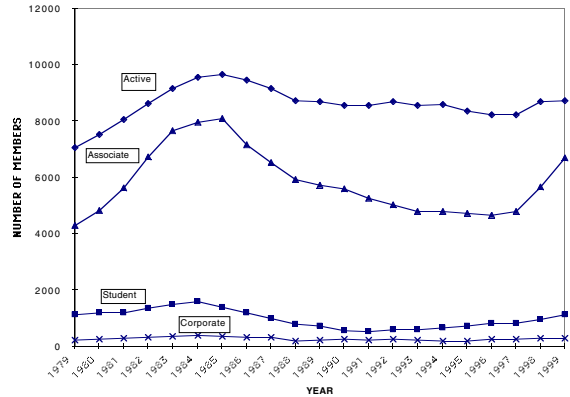


Figure 5. Membership by Classification 1979-99

Mining and Geothermal

Alan King, Chairman

The Mining and Geothermal Committee held two meetings since the last committee report: one in New Orleans at the 1998 SEG Annual Meeting and one roving meeting in Denver and Toronto via email in conjunction with the March 1999 Society of Mining Engineers (SME) meeting in Denver.

At the New Orleans Annual Meeting Ken Witherly was selected by the committee to serve as its vice-chairman. In keeping with tradition, Ken will be heading up our next major effort to bring the mining geophysical community together at the SEG 2000 Annual Meeting in Calgary.

Current members of the committee are:

Alan King, Chairman (kinga@inco.com)

Ken Witherly,

Vice Chairman (witherly.ken.k@bhp.com.au)

Joe Inman (inmanj@kec-slc.com)

Colin Barnett (ctb@nel.newmont.com)

Craig Beasley (craigwb@ix.netcom.com)

Jack Corbett (corbettjd@aol.com)

Terry Crebs (tjcrebs@aol.com)

Jan Klein (janklein@compuserve.com)

Peter Kowalczyk (peter_kowalczyk@placerdome.com)

Vic Labson (vlabson@usgs.gov)

Bob Lo (boblo@ibm.net)
 Ian MacLeod (ian@geosoft.com)
 Frank Morrison (HFMENGEO@socrates.berkeley.edu)
 Jim Taranik (jtaranik@mines.unr.edu)
 Jeff Wynn (jwynn@usgs.gov)
 Ken Zonge (ken@zonge.com)

Any SEG members interested in mining and geothermal geophysics and seeking to be actively involved in the committee are encouraged to contact Alan King or Ken Witherly.

Activities of the Committee over the last year include:

- **SEG Annual Meeting—New Orleans.** With a lot of effort from the committee members this meeting was a stimulating and relatively well attended event in spite of the general hard times in the mining industry. In addition to three interesting and well attended technical sessions there were three excellent workshops on *Magnetotellurics in Mining*, *Seismic in Mining*, and *Aviation Safety* organized by Frank Morrison and Karen Christopherson, John McGaughey, and Ken Witherly, respectively. These workshops brought together some of the most active participants in these areas with enthusiastic audiences in informal sessions. This allowed the presentation and discussion of leading-edge material in these areas of rapid technological change.

In New Orleans, some representatives of the geothermal community attended our meetings, and we hope that the committee will be able to provide better representation for this group as well as continue our historical strong association with mining.

Jeff Wynn did an excellent job organizing the mining exhibitions, and exhibitor attendance was good given that state of the industry.

- **Awards and Scholarships.** In 1998, the G.W. Hohmann Memorial Trust in applied electrical methods went to David Alumbaugh of Sandia National Laboratory for his outstanding work as a researcher and teacher in the field of applied electrical methods. David was nominated by his colleagues for this award based on more than a decade of outstanding work and his enthusiasm for communicating with students.
- **In-Mine Geophysics.** Max Maxwell of Golder Associates chaired a special session on *In-Mine Geophysics* at the March 1999 SME meeting in Denver. Representatives from Inco, Noranda, WMC, and other companies discussed how their companies are using in-mine geophysics to lower the cost of finding, developing, and producing ore in the immediate mine environment. A number of engineers from the main SME sessions attended this session and, we hope, came away with ideas for applications of geophysics to mines engineering. This developing area of mining geophysics is similar to reservoir definition geophysics in the petroleum industry and has the same potential for rapid growth that field has undergone in the last few years.

- **SEG Annual Meeting—Calgary 2000.** The committee has been working hard to ensure a strong mining presence at the 2000 SEG in Calgary. In keeping with our practice, we are concentrating on every other SEG meeting which tend to be located in mining-friendly areas, such as Denver, New Orleans (just friendly) and Calgary! Calgary is a hub of major mining activities in coal, oil sands, diamonds, and uranium, and is close to the mineral wealth of the Western Cordillera, and as such is a great venue for our next mining geophysical get-together.

Ken Witherly is organizing the event and has planned three to four technical sessions, as well as several short courses and workshops. We're still in the planning stage, so contact Ken if you have any suggestions for this event.

- **List Server.** A mining list server has been set up and is being maintained by Geosoft in Toronto. The goal of this list server is to provide a focus for contacts among the scattered members of the mining and geothermal community. Contact segmin@lists.geosoft to subscribe.
- **Web Page.** Plans are under way to produce a mining and geothermal Web page hosted by SEG. The format is still evolving, but we hope to have hot links to suppliers, bulletin boards, discussion areas, etc. Contact Alan King with any suggestions.
- **Future Meetings.** The Mining and Geothermal Committee is working hard on plans for Calgary 2000. There will be several meetings between now and then to carry on our regular business and prepare for Calgary. Please contact one of the committee members if you would like to be more involved.

SEG Foundation Museum

Jennifer S. Swanson, Chairman

The SEG Foundation Museum Committee consists of the following members: Angela M. Baron, Paul L. Beale, S. Norman Domenico, John N. Gallagher, Robert M. Iverson, John S. Knapp, Margi Oldani, Terry A. Quinn, Art H. Ross, Richard E. Schneider, Gene W. Sparkman, and Kay D. Wyatt. Jennifer S. Swanson served as Chairman until June of 1999 when she accepted employment at the SEG Business Office. Gary M. Hoover, former Vice-Chairman, now holds the responsibility of Chairman. Robert A. Wyckoff continues to serve as liaison to the SEG Business Office, and John P. Castagna serves as SEG Executive Committee liaison.

The interest and activity of the museum has continued to grow since last year's report. Beginning with the SEG Annual Meeting in New Orleans, Louisiana, a traveling display was set up, complete with a promotional video, a computer demonstration of the Virtual Museum, two display cases filled with instruments, and poster dis-

plays describing the history and use of various displayed instruments. Seventeen volunteers served as docents for the week. A presentation of progress and plans was made to the SEG Council and Executive Committee and later to the Trustee Associates. The new Museum plan was met with words of encouragement and anticipation, and a \$34 050 budget was approved for the 1998-99 fiscal year. The annual Museum Committee meeting was also well attended by enthusiastic supporters. For more details regarding the museum's Annual Meeting activities, please refer to the full report in the December 1998 issue of THE LEADING EDGE.

Four additional Museum Committee meetings have been held since the 1998 Annual Meeting (as of June 1999). Also, a progress report was presented at the SEG Executive Committee meeting in December 1998. Meetings have focused on the following aspects: Virtual Museum, Traveling Museum, physical displays, fund-raising/promotion, basement storage organization, and information gathering.

Virtual Museum. The Virtual Museum has been enhanced, and development continues through the leadership of John Knapp. The new Virtual Museum is organized in a hierarchical system designed to increase the level in difficulty according to the user's understanding and interest. Introductory pages focus on basic ideas, while more advanced topics are accessed by exploring deeper into the Web structure. Feedback is greatly appreciated, and new Virtual Museum Subcommittee members are invited to help provide ideas of format and content. Please visit <http://seg.org/museum/VM/>.

Traveling Museum. In April, a traveling display was taken to Energy Days in Bartlesville, Oklahoma. Approximately 1000 fifth-grade students from 22 schools in Oklahoma and Kansas attended. Several other requests have been received from SEG members desiring to borrow museum artifacts to showcase at their local meetings.

Art Ross has been facilitating cooperation between the SEG Museum and the Geophysical Society of Houston (GSH) Museum. Exciting plans for the 1999 SEG Annual Meeting include a seismic truck cab with geophones and other equipment, historical instruments, poster displays, the Virtual Museum, and the promotional video.

Information Seeking. Norm Domenico has been leading the effort to learn more about the instruments housed in the museum. About 300 questionnaires were received in response to a mailing sent to members with more than 25 years of membership in SEG. These members indicated their willingness to share their expertise to further the goals for the museum. The responses were entered into a data base for convenient access.

Videotaping of guest geophysicists has begun. Four presentations have been recorded, and more recording is planned for the 1999 Annual Meeting in Houston, Texas. These presentations will be incorporated into a new video display.

Budget. The SEG Executive Committee approved a \$34 050 budget for the 1998-99 fiscal year, and approximately \$6 500 was spent by July 1, 1999. Additionally, \$14 643 was spent of the \$60 000 specially-allocated start-up funds approved by the 1997-98 Executive Committee (see the 1998 Annual Report for more details). A budget for the 1999-2000 fiscal year is currently under review.

Fundraising/Promotion. Gary Hoover has led the fundraising effort this year, beginning with the Trustee Associates Luncheon held during the SEG 1998 Annual Meeting. Between July 1998 and June 1999, a total of \$110 550 was donated to the museum: \$55 550 from individual donors and \$55 000 from SEG Foundation matching funds (gifts between \$1000 and \$100 000 qualify for matching). Donors included: Claire M. Bresnahan, Graydon L. Brown, Colin Dunkeld, Cecil and Ida Green Foundation, Hugh M. Hardy, Gary M. Hoover, Geophysical Society of Tulsa, Jane Phillips Society, Elly Perner Family, Raymond J. St. Germain, Robert H. Tatham, Glen E. Vague Jr., Mike S. Wolfson, and J. Lamar Worzel.

Attractive brochures have been printed to promote the museum and to solicit funding. These brochures coordinate with other SEG Foundation promotional material and are now included in SEG Foundation information packets.

A new Founding Members plaque is displayed at the museum in Tulsa, Oklahoma. Donors may contribute \$10 000 each in honor of an SEG founding member. Bill Laing and Craig Ferris contributed to the program in honor of Donald C. Barton and Stuart Sherar, respectively.

Nonfinancial donations included:

- Geophysical Research Corporation research reports dated 1932, donated anonymously
- Seismic record dated November 9, 1939, donated by Ronald Genter
- "Phillips Ekofisk Oil Field—30 Years of Technology" poster display, donated by Chip Feazel, Phillips Petroleum Company
- SeisCrop film, donated by Tom LaHouse, Vastar Resources, Inc.

In May 1999, approximately 140 visitors attended the SEG/GST (Geophysical Society of Tulsa) picnic and museum open house.

Basement. Bob Wyckoff has been instrumental in successfully reorganizing the storage space in the basement of the Geophysical Research Center (GRC). This reorganization has freed storage space that can now be leased to building tenants. Photographs have been taken of the articles stored in the basement and are ready to be added to the Virtual Museum.

Plans in progress. The following new displays are currently in progress:

- An attractive sign to be displayed outside the Museum of Geophysical Exploration.
- A large, interactive, hands-on display featuring land seismic data acquisition.
- A video display featuring guest geophysicists shar-

ing their knowledge and experience with museum items and/or other geophysical technologies.

- Various audio displays introducing visitors to museum artifacts.
- Large, colorful murals depicting exploration geophysics.

Plans for the future. Plans for 1999-2000 include:

- Add more recent technology (items circa 1970-90) to the Virtual Museum.
- Continue to emphasize fundraising.
- Organize a volunteer group to manage the museum office, catalog museum items, and serve as docents.
- Affiliate with the American Association of Museums and begin to seek grants for the SEG museum. (Full accreditation was considered, but the committee determined that it was too early to invest money in the intensive study. Accreditation will be reconsidered after further museum progress is made.)
- Publicize the SEG museum locally; advertise "open hours" for museum tours.
- Investigate the possibility of showcasing the Traveling Museum internationally.

Committee on Nominations

Rutt Bridges, Chairman

The Committee on Nominations consists of the SEG's most recent three past presidents plus four Active Members each representing an SEG Section or Associated Society. The immediate past president serves as chairman. Each year two of the four Sections/Associated Societies representatives are replaced through a drawing conducted by the Tellers Committee. This year's members included past presidents Rutt Bridges (chairman), Fred Hilterman, and Gordon Greve, plus Section/Associated Society representatives Bradley A. Birkelo, Betty Jones Green, C. Riley Hanger, and Karl J. Kaufmann.

Suggestions for candidates come from a variety of sources, ranging from members to past and present members who have been active in various SEG activities. Those elected to the 1999-2000 SEG Executive Committee will have the opportunity to work with Bill Barkhouse, who will move up from President-Elect to President following this year's Annual Meeting. Nominees submitted for SEG offices by the Committee on Nominations include:

President-Elect:	Peter M. Duncan Sally G. Zinke
First Vice-President:	Mike Bahorich Damir S. Skerl
Second Vice-President:	Simon Spitz Zhijing (Zee) Wang
Vice-President:	Peter Pangman Steven (Steve) L. Roche

Secretary-Treasurer:	Howell W. Pardue John (Jack) Kruppenbach
Editor:	Christopher (Chris) L. Liner

No candidates were nominated by petition for this election cycle. I would like to thank my fellow committee members for the long hours and thoughtful consideration they put into the process of selecting and recruiting this outstanding slate of candidates.

Online Governing Board

Joe Dellinger, Chairman

The spectrum of online services provided by the SEG continued to improve in both quality and breadth during 1998-99. The most obvious change is the complete redesign of the SEG's Web site, which took place in spring 1999. It was clear the time had come to reorganize and rationalize the SEG Web site's structure. As part of this process, eight new broad top-level categories were created: Publications, Meetings, Technical, Sections and Societies, About SEG, Business, Services, and You and Geophysics. Great care was then taken to logically arrange all lower-level Web pages within these categories. While the reshuffling of the site did cause some temporary inconvenience, the feedback from users has generally been positive, and the Web site is now far more logically structured internally, facilitating maintenance and future growth. Partially as a result of the new design of the SEG's Web site, online advertising revenue has increased (although revenue is still less compared to revenue from traditional print advertising).

Other changes to the Web site are less obvious. The number of full-time staff members maintaining SEG's Internet presence has increased from two to three. The Web site itself is now running on a powerful new Sun Enterprise 3500 Server, greatly increasing its capacity. The capacity of the SEG staff has also increased because many processes that used to require considerable manual intervention have been more thoroughly automated. These include online submission of SEG abstracts (which mostly went without a hitch this year), email submission of authors' biographies, online registration for the Annual Meeting, updating of the bibliographic database, updating of membership information, and posting of classified ads.

Automation of "mundane" tasks has left the staff more time to make progress on the continued development of the Web site. *TLE* and Geoarchives and are now available online back to 1993, with plans for steadily adding more archival material soon. The Digital Cumulative Index has been brought up to date. The online Book Mart has been brought back online. A "new and improved" version of the 1999 Annual Meeting Technical Program is online this year. Two especially popular new Web projects include the online Buyer's Guide, and (for helping SEG

members to deal with the repercussions of the oil price collapse of late 1998) "career transitions" pages.

As always, associated societies, sections, committees, and individual members are encouraged to contribute to the SEG Web site. By following the simple guidelines in the new templates and standards page, contributors can ensure that their pages will seamlessly fit into the overall SEG Web structure. The number of SEG sections with Web pages hosted on the SEG site continues to increase. Other volunteer efforts include the SEG museum Web page, the SEG student connection, and the guide to exploration geophysical consortia.

All SEG members are encouraged to include their email addresses with their membership data!

Future Plans. To date, SEG has followed a policy of making all information on their Web site freely available to all users, members or not. (This includes current and back issues of *GEOPHYSICS* and *THE LEADING EDGE*.) While SEG is now realizing a small amount of income from online advertising, as the breadth and depth of services available online continues to grow, the time will soon come when SEG may also need to start restricting access to members for some online services, and charging on a per-use basis for others. Our goal in doing this is to avoid providing so many free services online that we remove the advantages of membership of libraries subscribing to SEG journals. We will be seeking feedback from the Executive Committee and the general SEG membership to help guide our future policies on this critical issue; a survey is already in the works. Our initial plans are to begin charging for reprints of complete *GEOPHYSICS* articles more than one year old. However, cumulative index searches and abstracts of articles will remain freely available online.

Publications

Bill Dragoset, Chairman

The Publications Committee is responsible for working with the SEG Publications staff to produce all Special Publications other than *GEOPHYSICS* and *THE LEADING EDGE*. Our objective is to provide SEG members and anyone who is engaged in geophysical work or study the technical geophysical information they require in their jobs or studies.

Books published in fiscal year 1999 include:

- *A Practical Understanding of Pre- and Poststack Migrations, Volume 2 (Prestack)* by John C. Bancroft
- *Awards Citations of the SEG, 1930-Present*
- *Comparison of Seismic Inversion Methods on a Single Real Data Set* edited by Robert G. Keys and Douglas J. Foster
- *Geologic Applications of Gravity and Magnetics: Case Histories* edited by R. I. Gibson and P. S. Millegan (copublished with AAPG)

- *Model-Based Depth Imaging* by Stuart Fagin
- *Tensors of Geophysics, Volume 2—Generalized Functions and Curvilinear Coordinates* by Frank Hadsell and Richard Hansen
- *Time-Lapse Seismic in Reservoir Management* by Ian G. Jack (1998 Distinguished Instructor Short Course Series, No. 1)

Books expected to be published by the end of calendar 1999:

- *Advances in Anisotropy: Selected Theory, Modeling, and Case Studies* edited by Julia A. Hood
- *Covariance Analysis for Seismic Signal Processing* edited by R. Lynn Kirlin and William J. Done
- *Interpretation of Three-Dimensional Seismic Data—Fifth Edition* by Alistair R. Brown (copublished with AAPG)
- *Seismic and Acoustic Velocities in Reservoir Rocks, Volume 3: Recent Development* edited by Amos M. Nur and Zhijiang Wang
- *Shallow-Reflection Seismic Processing—Practical Examples and Pitfalls* by Gregory S. Baker
- *Static Corrections for Seismic Reflection Surveys* by Mike Cox
- *The Seismic Velocity Model as an Interpretation Asset* by Phil Schultz (1999 Distinguished Instructor Short Course Series, No. 2)
- *Three-Dimensional Electromagnetics* edited by Michael Oristaglio and Brian Spies

Also during fiscal 1999, after a two-year hiatus in publication, SEG reissued a revised and updated version of GEOROM, the CD-ROM set bearing archives of papers published in *GEOPHYSICS* and *THE LEADING EDGE*. SEG also issued a revised and updated version of the Expanded Abstracts Historical Series CD-ROM set.

Inventories of some Special Publications were depleted during the year. Due to continuing sales interest, SEG recently has reprinted the following books:

- *A Practical Understanding of Pre- and Poststack Migration, Volume 1 (Poststack)* by John C. Bancroft
- *A Practical Understanding of Pre- and Poststack Migration, Volume 2 (Prestack)* by John C. Bancroft
- *Amplitude Variation with Offset—Gulf Coast Case Studies* by J. L. Allen and C. Peddy
- *Comparison of Seismic Inversion Methods on a Single Real Data Set* edited by Robert G. Keys and Douglas J. Foster
- *Deconvolution* edited by G. M. Webster
- *Encyclopedic Dictionary of Exploration Geophysics, Third Edition* by Robert E. Sheriff
- *Exploration Seismic Tomography: Fundamentals* by Robert R. Stewart
- *Introduction to Seismic Inversion Methods* by Brian H. Russell
- *Migration of Seismic Data* edited by G. H. F. Gardner
- *Numerical Modeling of Seismic Wave Propagation* edited by K. R. Kelly and K. J. Marfurt

- *Offset-Dependent-Reflectivity—Theory and Practice of AVO Analysis* edited by John Castagna and Milo Backus
- *Reservoir Geophysics* by Robert Sheriff
- *Seismic and Acoustic Velocities in Reservoir Rocks, Volume 2: Theoretical and Model Studies* edited by Zhijing Wang and Amos Nur
- *Seismic Anisotropy* edited by Erling Fjær, Rune M. Holt, and Jaswant S. Rathore
- *Seismic Data Processing* by Oz Yilmaz
- *Seismic Modeling and Imaging with the Complete Wave Equation* by Ralph Phillip Bording and Larry R. Lines
- *Seismic Wavefield Sampling* by Gijs J.O. Vermeer
- *Theory of Seismic Diffractions* by Kamill Klem-Musatov
- *VSP Interpretive Processing: Theory and Practice* by Ronald C. Hinds, Neil L. Anderson, and Richard D. Kuzmiski

The 1996-97 SEG Executive Committee gave the Publications Committee a mandate to produce a new series of books that encompass all aspects of the technology used in planning, acquiring, processing, and interpreting 3-D seismic data. This effort is now well under way under the moniker 3-D Library, with the following five manuscripts in the publication pipeline:

- *3-D Seismic Exploration*, a reprint volume, Bob Graebner, volume editor
- *3-D Seismic Imaging*, Biondo Biondi, author; Gerry Gardner, volume editor
- *4-D Seismic Reservoir Monitoring*, David Lumley, Ron Behrens, Zhijing Wang, authors; Bob Hardage, volume editor
- *Fundamentals of 3-D Seismic Survey Design*, Gijs Vermeer, author; Craig Beasley, volume editor
- *Planning and Operating a Land 3-D Seismic Survey*, John Peirce, Andreas Cordsen, Mike Galbraith, authors; Bob Hardage, volume editor

Income from publication sales for the 1999 fiscal year totaled \$588 866, approximately the same as it was the previous year. Sales revenue from the Expanded Abstracts book was \$69 910, and revenue from sales of both GEOROM and the Expanded Abstracts Historical Series CD-ROM was \$53 888.

SEG's policy for Special Publications is to offer products at a price low enough to be affordable by the membership yet adequate to cover production and sales costs.

The Publications Committee is composed of Series Editors who generously donate their time to make the publication process work. These editors, the additional editorial help that they recruit, the book authors, and the SEG Publications staff perform important functions for the Society.

Series Editors are:

Name	Technical Area
Cynthia Menant Berlier	Slide Sets
Michael R. Cooper	Investigations in Geophysics
Dan A. Ebrom	Geophysics Reprints
Eugene F. Scherrer	Geophysical References
David V. Fitterman	Geophysical Monographs
Stephen Hill	Geophysical Developments
Roger A. Young	Continuing Education Course Notes
Eike Rietsch	Translations Committee Chairman

Research

Leon Thomsen, Chairman

Your Research Committee is one of the largest and most active of the standing committees; we currently have 82 members and at least as many opinions on every issue. Our general purpose is to foster research in exploration geophysics, and we do this in a variety of ways. Chief among these is the organization of Special Sessions at the Annual Meeting each year, Research Workshops following the Annual Meeting, and week-long Summer Research Workshops held each year in more bucolic settings. We accomplish this via active email exchanges, in a brief meeting during each Annual Meeting, and in two intense days during each winter season. In 1998 we began a new era of closer cooperation with the EAGE by meeting also during the EAGE convention. This year in Helsinki we celebrated the creation of the EAGE Research Committee with the first-ever joint SEGRC/EAGERC meeting.

This report covers activities which saw to fruition plans which were laid the previous year (with Bob Tatham as chairman), as well as those planned in this year. Each of the following events required significant efforts from its own organizing committee; details are given on our Web site, <http://seg.org/research>.

1998 Convention Special Session

- *Recent Advances and the Road Ahead* organized by Fred Aminzadeh and Bob Whitsett

1998 Post Convention Workshops

- *Deep Water Exploration and Production Geophysics* organized by Rick Gibson and Nader Dutta
- *Fluid Substitution in Seismic Monitoring* organized by Arthur Cheng, Larry Myer, and Quincy Chen
- *Can P-wave AVO Be Quantitative, or Do We Need Multicomponent Data?* organized by Guillaume Cambois and Ali Tura
- *Acquisition and Processing for 4-D Seismic* organized by David Lumley and Wendell Wiggins
- *The Future of 3-D Seismic Interpretation and Visualization* organized by Chris Thompson, Tracy Stark, Geoffrey Dorn, Bin Wang, Ben Winkelman, Huw James, and Quincy Chen

1999 Summer Research Workshop

- *GEOINVERSION: Model-based Inversion Challenges the Technology Transfer*, held in Taos in August, organized by Kurt-Martin Strack, Jim Berryman, Nader Dutta, Fernanda Gasparotto, Mrinal Sengupta, Sven Treitel, Keeva Vozoff, and Art Weglein

1999 Convention Special Sessions

- *Recent Advances and the Road Ahead*, organized by Laurent Meister, will concentrate on time-lapse reservoir monitoring.
- *E&P Technology Development in Times of Uncertain and Soft Economy*, organized by Yoram Shoham, a postconvention technology forum (no additional registration fee!) will feature a blue-ribbon panel discussion of industry leaders in technology management.

1999 Post Convention Workshops

- *Is True Amplitude Processing and Imaging Possible in 3-D?* organized by Simon Spitz, Fabio Rocca, and Graham Winbow
 - *The Next SEG/EAGE Seismic Mode* organized by Leon Thomsen and Leigh House
 - *Recent Advances in Logging Methods* organized by Kurt-Martin Strack and H. H. Yuan
 - *Dynamic Reservoir Characterization and Seismically Constrained Production Optimization* organized by Ali Tura and Fred Aminzadeh
 - *Fracture Characterization and Imaging* organized by Mike Schoenberg, Ilya Tsvankin, and Colin Sayers
 - *Research in Visualization* organized by Geoff Dorn
- Looking still further ahead:

2000 Summer Research Workshop

- *Processing and Imaging with Converted Waves* jointly sponsored by the EAGERC, organized by Reinaldo Michelena, Maria Donati, Jim Geiser, Nick Moldoveanu, Simon Spitz, will be held in Boise in the early fall of 2000.

In addition, the **SEG/EAGE 3-D Modeling** subcommittee finished a major phase of its work with the establishment of two numerical acoustic models <http://seg.org/research/3Dmodel/index.html> available for use in testing processing and interpretational algorithms. The entire committee, chaired by Fred Aminzadeh, won a Special Commendation for this feat and was recognized at the 1998 Annual Meeting. (Note: a postconvention workshop will attempt to decide what we should be doing next.)

As you can see from these activities, research in exploration geophysics is alive and well, in fact is given new urgency by the uncertain and soft economic environment. We see a healthy level of ongoing research as the indispensable key to the survival of our profession throughout the next millennium.

Reviews

Paul Docherty, Chairman

The goal of the Reviews Committee is to provide timely and critical reviews of geophysical and exploration-related publications to assist members in selecting state-of-the-art literature to enhance their professional skills. Reviews appear monthly in *THE LEADING EDGE*. During the reporting period (July 1998-July 1999), 59 books were reviewed by 32 reviewers from nine different countries. Five books received more than one review, including a record four reviews for the SEG/AAPG joint publication *Geologic Applications of Gravity and Magnetism: Case Histories* edited by R. I. Gibson and P. S. Millegan. Once again, committee members were asked to vote on the best geoscience books reviewed during the year; their selections appeared in the July 1999 issue of *TLE*.

Soliciting reviews electronically continues to be a success. Currently, 90 members worldwide receive a monthly notice of recent publications. Reviewers request books by email and are encouraged to submit their reviews by email. Interested members are invited to participate by contacting pdocherty@fairfield.com.

It is always a pleasure to work with the SEG staff in Tulsa. In particular, the committee is indebted to Merrily Sanzalone, who handles all communications with publishers, and to Dean Clark for his considerate editing of reviews.

SEG Student Section/Academic Liaison

Kay D. Wyatt, Chairman

This past year, we have seen a tremendous growth in activities of the SEG Student Section/Academic Liaison Committee. Available space in this report doesn't allow detailed description of all of these programs. However, the reader is encouraged to check the newly announced SEG Student Connection at: <http://students.seg.org>.

The Student Connection Online. This new SEG Web page is the place to look for all SEG student activities, programs, and events. It also has a wealth of educational information on geophysics for "kids" of all ages. Information on scholarships, jobs, student sections, etc., is just the beginning of available information. Much of the information on this Web page is described briefly below. Others include an SEG student message board, basic introductory material on exploration geophysics, and the fun "Just for Kids" Web page with lots of neat links for the younger folks, and much, much more.

SEG/EAGE Geo-Applet Contest. A new initiative, the SEG/EAGE Geo-Applet Contest, began in late summer 1998. This competition was a joint effort between SEG

and EAGE. The aim was to promote the interest and professional competence in this new field of software applications for the benefit of fellow students, SEG and EAGE members, and ultimately, the world at large.

The criteria by which they were judged was creativity, effectiveness in demonstrating a geophysical principle, use of Java applets' unique capabilities, and coding skills. Results of the competition were announced in May 1999. Winners include:

- First Prize: Kimmo Korhonen, Helsinki University of Technology (a visualization of the International Geomagnetic Reference Field model)
- Second Prize: Alejandro E. Murillo, University of Colorado (a visualization of seismic reflection concepts)
- Third Prize: Christian Scullard, University of British Columbia (a GPR simulation for a layered media)
- Honorable Mention: Fritz Keller, Technical University of Clausthal (a VES sounding applet and a simulation of a long-period seismometer)
- Honorable Mention: Benjamin Seto, Westlane Secondary School Niagara Falls (a demonstration of EM disturbances caused by Northern Lights)
- Honorable Mention: Alexei Shevchenko, Moscow (a VSP simulation)
- Honorable Mention: Satoshi Urata, The University of Tokyo (a visualization "Seven Pieces of the World")

As you can see, we have a very international group of winners, and all of them are to be congratulated for their fine effort. You may see their JAVA Geo-Applets for yourself at the SEG Student Connection Web page. We have received funding to continue this program into the 1999-2000 year and look forward to seeing what next year's winners will come up with.

AAPG/SEG Student Expo. The AAPG/SEG Student Expo was inaugurated as an American Association of Petroleum Geologists (AAPG) program in 1997 and has grown to include SEG participation in the third Student Expo event in October 1999. This program is designed to mutually benefit students interested in petroleum careers and petroleum industry representatives seeking future employees. The two-day Expo provides opportunities for students to showcase their work in poster sessions, network with industry representatives, attend a career workshop, and visit petroleum company offices.

In turn, industry representatives are given a cost-efficient avenue to link with potential new hires and interns and see their work and skills in a unique environment. Representatives of the sponsoring companies are invited to present exhibits to promote their exploration activities or services. These companies are provided student résumés prior to the Expo and are encouraged to invite students to their office for exposure to industry and/or interviews. This is most certainly an exciting program, and we are delighted to assist AAPG in putting this program on in 1999.

SEG Student Newsletter. It has been many years since the SS/AL Committee has published the SEG

Student Newsletter. Thanks to the boundless energy of Alison Begeman, we distributed the first copy of the newsletter this summer, now temporarily called the *SEG Student "Something."* A contest is currently under way for SEG student members to submit a name for this newsletter. This newsletter is an example of the newly energized SEG outreach program to its student membership. You can find an online version of this newsletter on the SEG Student Connection Web page <http://students.seg.org>.

SEG Electronic Mentor Program. This is a new program launched this summer by the SS/AL committee. It is designed to provide online SEG members to answer questions from students of all ages about all aspects of exploration geophysics. We currently have 42 electronic mentor volunteers. Kids (of all ages) may submit their questions by an electronic form on this Web page. The questions are then routed to various mentors who respond directly to the individual who submitted the question. Our jobs are way too much fun to keep to ourselves! SEG members can volunteer to be an Electronic Mentor from the "Ask a Geophysicist" Web page (accessible from the SEG Student Connection).

SEG K-12 Slide Sets. The SEG K-12 slide sets (accessible from the SEG Student Connection) are designed to easily enable SEG members to make presentations to their local elementary and secondary schools about exploration geophysics and the petroleum industry. Both a Web-based version of the slide sets and Microsoft PowerPoint slide files are available to download.

We currently have two slide sets available. Slide set #1 is on *Exploration Geophysics*, and slide set #2 is on *Exploring and Drilling for Oil and Gas*, created by Tom Sheeran. Thanks to the efforts of Eulogio Del Pino and Kurt-Martin Strack, our slide set #1 is now available in Spanish and German. Volunteers are being sought for translations to French, Japanese, Chinese, and Russian.

1998-99 SEG Student Paper Contest. The SS/AL each year conducts the Student Paper Contest at the Annual Meeting. This year, this effort was led by Raghu Chunduru. Winners include:

- Best Student Paper Presented at the 1998 Annual Meeting:
Separating aeromagnetic anomalies using wavelet matched filters by Thomas A. Ridsdill-Smith, University of Western Australia
- Awards of Merit:
Improving seismic resolution with nonstationary deconvolution by Alana R. Schoepp, University of Calgary
and
Focusing of inversion images by Oleg Nikolaevic Portniaguine, University of Utah
- Best Student Poster Paper Presented at the 1998 Annual Meeting:
Comparison of imaging in anisotropic media using P-wave and S-wave data by M. Graziella Kirtland-Grech, University of Calgary

- Award of Merit:

Land vertical cable acquisition and analysis: Results from the Blackfoot high-resolution 3-C seismic survey by Jitendra Sudeshkuma Gulati, University of Calgary

1999 ISEF Awards from SEG. SEG is a strong supporter of the International Science and Engineering Fair (ISEF) and provides judges and cash awards in its "Special Awards" division. This year, the SEG Executive Board increased the SEG cash awards to a total of \$3000 distributed as follows: \$1000 to our first-place winner, \$500 to the second-place winner, \$250 each for up to four third-place winners, and a \$500 team award.

This year, the 50th Intel ISEF was held May 2-8 in Philadelphia. Students from all 50 states and several territories, along with students from 49 countries participated. This year's judge team included Doug Wyatt (SEG ISEF Subcommittee Chairman), Harold Geller, Jonathan Nyquist, and Jay Pulli. The team reviewed all 1140 projects while placing special emphasis on projects from the earth and space sciences, environmental sciences, physics, engineering, mathematics, and computer sciences fields. All of the projects were very deserving and many were simply outstanding; however, seven projects were agreed upon by our team as "winners" for SEG.

This year's Distinguished Achievement Award was presented to Sarah M. Tam, a junior from Hamilton-Wenham Regional High School in Hamilton, Massachusetts. Ms. Tam's project, from the Earth Science category, titled *Free Energy in the Backyard*, was a creative approach into modeling the generation of useful geothermal energy from shallow soils. She hypothesized that Fourier's law of heat conductivity in a solid can be applied to heat transfer in a homogeneous soil. By using multiple XYZ temperature measurements, Fourier's law and statistical analysis, she was able to develop a model for temperature flow in soils. In addition to the \$1000 associated with this award, Ms. Tam will be invited and sponsored to attend the Annual Meeting in Houston. She and her school will receive plaques and a subscription to *TLE*.

The second-place SEG winner was Morgan Danielle Dusch, a junior from Paoli Junior-Senior High School in Paoli, Indiana. Ms. Dusch's Environmental Science project, the *Emergence & Transport of Contaminants from Confined Feeding Operations in Lost River's Indiana Karst Terrane* was a detailed subsurface study of contaminant flow in karst systems. Using standard geological techniques such as map and aerial photo interpretation, as well as cavern exploration, she and her advisor mapped potential and actual contaminant flow originating from confined hog lot operations. Hog feeding lots are a topical and emerging environmental concern.

This year's four Merit Awards went to a variety of interesting projects.

- **Erin A. Stoesz**, a sophomore from Laramie Senior High School in Laramie, Wyoming, continued her Earth Sciences research from last year. Her project, *Textural and Chemical Effects on Sound*

Transmission in Rocks, compared rock properties with sound qualities. Ms. Stoesz was an SEG Merit Award winner last year.

- **Nathaniel C. Hart**, from the Cape Cod Academy in Osterville, Massachusetts, completed a very interesting Environmental Science experiment in *Measuring the Rise of Sea Level Following Deglaciation*. His study used C-14 dating from core sediments and wood samples from drowned trees to determine the relative rate of sea level rise over the last 4000 years.
- **Lev B. Horodyskyj**, a senior from Padua Franciscan High School in Parma, Ohio, completed an engineering project titled *Earthquake Resistance: Magnetic Magnitude Reduction*. His project demonstrated a method to decrease structural vibrations of a building during an earthquake by magnetically varying the properties of a magneto-rheological fluid.
- **Karen Christine Sulit Braganza** from Cayetano Arellano High School in Manila, Philippines, completed a unique environmental sciences project. Her project, *A Feasibility Study on the Utilization of Mine Tailings as Alternative Raw Material for Earthenware* was a unique approach helping to solve mine wastes and tailings problems.

Each merit awardee received \$250, a plaque, and a subscription to *TLE*.

The SEG Team Award was made to Stuart Gardoll and Gabrielle Gough for their project *Nature Today*. These students are from St. Johns College in Dubbo, New South Wales, Australia. Their Computer Science project involved the creation of an interactive environmental/geoscience CD program for high school students to use in earth studies. It was an excellent project emphasizing the need for earth science education. These team winners will split the \$500 SEG Team award.

Many thanks go to Doug Wyatt and his team for serving as the SEG International Science and Engineering Fair judges.

Technical Standards

Michael Norris, Chairman

ANCILLARY DATA STANDARD

The Ancillary Data Standard, ADS, and its associated Trace Attribute and Trace Edit formats were presented at the Annual Meeting of the Technical Standards committee. ADS provides a means of capturing all ancillary data pertaining to a geophysical survey into a single file. The ADS metafile format describes the structure used to achieve this. The Ancillary Data Standard satisfies two needs within the seismic industry:

- Many types of ancillary data are currently stored in individual operator and contractor specific formats. There is a need to standardize formats for informa-

tion of this type. The ADS provides a standard format that should lead to simpler and more cost-effective data transfer.

- The variety of data types and sensors presents the processor with the problem of synchronizing information from various sources, and archiving the information, as a composite whole can be difficult. ADS provides a means of relating and storing different data types together as a single entity.

The second need is satisfied by providing a framework in which to collate and relate the different data types. The metafile format has been developed to satisfy a set of criteria defined by a joint committee of United Kingdom Offshore Operators Association (UKOOA), Society of Exploration Geophysicists (SEG), International Geophysical Operations Coordinating Committee (IGOCC), European Petroleum Survey Group (EPSG) and the International Association of Geophysical Contractors (IAGC) members responsible for the development of the Ancillary Data Standard. The actual development was conducted by joint working groups consisting of SEG and UKOOA representatives.

Part of the criteria for the ADS standard was the ability to record trace attributes and trace edits. Current acquisition and processing practice can distribute the computation of the trace attributes and edits both spatially and temporally. Single trace edit and attribute files which encompass all of the processing involved in a 3-D data volume can become complex and unwieldy. By taking advantage of the ADS' dependency features, the trace edit and attribute problem can be sequenced into a series of individual data sets that can be physically combined and logically connected together.

ADS has undergone a lengthy period of public and peer review. The review period was announced via email distributions, the SEG Web site, and notices published in *THE LEADING EDGE* and in *First Break*. ADS will be presented to the SEG Executive Committee for adoption. UKOOA has already accepted the ADS format.

SEG-Y Rev. 1

The PESGB Data Management Group has worked with the SEG Technical Standards Committee to recommend changes to the 1975 SEG-Y data standard. PESGB is a United Kingdom based group concerned with data processing. They formed a subcommittee to investigate the usage of the headers in the SEG-Y format, particularly with a view to easing the task of loading seismic data into data banks.

With the introduction of 3-D acquisition, seismic data processing requires header entries that were not defined in the original SEG-Y standard. The SEG-Y Rev. 1 effort is not an attempt to replace the SEG-Y standard but is a set of recommendations for the usage of SEG-Y, codifying existing practice wherever possible. The use of some header fields defined in the original standard is clarified in the context of contemporary data usage. Where new fields are required they have been defined in the unas-

signed portion of the headers if possible using locations that are already commonly used for the purpose. None of the new fields are specified as mandatory but rather provide a "home" for the information if it is available. In addition to syntax revisions, the SEG-Y standard will be updated to current media and standards practices.

Grid eXchange Format, GXF, Version 3

Dale Bird, the current Chairman of the SEG Gravity and Magnetics Committee, is working with the SEG Technical Standards Committee to develop grid and point data standards for the gravity and magnetics community. Currently the gravity and magnetics community has adopted the GXF format as the de facto grid data standard for their community. The Gravity and Magnetics Committee is working with the Technical Standards Committee to move the de facto standard to an official SEG standard.

Technical Standards on SEG Web site

In addition to placing the ADS review notice on the SEG Web site, the proposed standards were made available for downloading. This is an extension of the current practice to make all new SEG standards available via the SEG Web site. Currently all of the standards, which were in an electronic form, have been made available for downloading. An effort is under way to convert the older SEG standards to electronic form so they can be added to the available standards. In addition, UKOOA has been contacted about providing links to or copies of the UKOOA positioning standards for inclusion on the SEG Web site.

Tellers

Stephen Hill, Chairman

This report covers the term July 1, 1998 to June 30, 1999.

Southwestern Computing Service, Inc. in Tulsa was retained for the tabulation of the ballots for the SEG Officers and District Representatives.

Of the 8189 ballots mailed, 2498 were received through July 31, 1998. The ballots were opened under my supervision. They were delivered to Southwestern Computing where the votes were entered, verified, tabulated, and returned to the SEG Business Office.

The Tellers Committee was unable to verify the tabulation. The error in Southwestern Computing Service was found and corrected. The Tellers Committee verified the correctness of the second tabulation by a statistical sampling of the votes for all of the offices. In addition, the Tellers Committee recounted all of the votes for one of the SEG offices.

1999-2000 SEG Officers and District Representative ballots were mailed to the voting membership by June 15, 1999.

Translations

Eike Rietsch, Chairman

The Translations Committee, at its meeting in New Orleans, September 14, 1998, discussed several foreign-language books and, for various reasons, decided against recommending translation and publication by SEG.

Among the books presently proposed for translation and publication is *Vertical Seismic Profiling, Experiments and Results* by the late Russian geophysicist E. I. Galperin, which is a follow-up to his pioneering first book on this subject. Another proposed book is *The Dynamic Fluid Method* by Vladimir Pisetski, which will be reviewed once a copy becomes available to the committee.

The Tables of Contents of the following foreign journals are presently published in *GEOPHYSICS* on a regular basis.

China

Oil Geophysical Prospecting
Journal of the University of Petroleum
Journal of the University of Petroleum, China

India

Journal of Geophysics (formerly Journal of Association of Exploration Geophysicists)

Japan

Butsuri-Tansa (Geophysical Exploration) of the SEG
Japan

Russia

Geology and Geophysics, Russian Academy of Sciences, Siberian Branch

Ukraine

Journal of Geophysics, Ukrainian Academy of Sciences

Tables of Contents of other journals and one-time reports of possible interest to the readership of *GEOPHYSICS* are published as they become available.

Reports of the Ad Hoc Committee Chairmen

Annual Meeting Funding

Martin L. Brandt, Chairman

Statement of Issue

There are numerous parts of SEG that raise money for their programs. Examples of the various parts include, but are not limited to, the SEG Foundation, the International Exposition and Annual Meeting, regional expositions and meetings, and advertising for THE LEADING EDGE and GEOPHYSICS. The needs of each are great and each merits financial support, as they all provide a useful product to the membership of the SEG.

Currently each of these various parts raise money independent of one another. In addition many of these various parts change committee members each year, limiting memory continuity. During industry up cycles there is generally enough funding to meet program objectives. The independence and potential low continuity, coupled with industry down cycles, leads to funding shortfalls. Individuals and organizations being asked to provide repeated financial assistance are also affected by the down cycles. In short, the need for financial support always exceeds the supply but becomes acute in down cycles.

This committee was asked to do an integrated study across the various parts of SEG describing the financial needs, current fund-raising techniques and areas for improvement focusing on the independence and continuity committee issues as well as the cyclical nature of our industry.

The Deliverables

- This Annual Meeting Funding Ad Hoc Committee has been formed to understand the various funding needs and prepare an integrated description of those needs of SEG.
- Prepare a funding process map for SEG.
- Identify improvements to help raise financial support for SEG.
- Review and recommend improvements to the Sponsorship Policies for the International Exposition and Annual Meeting.

Respectfully submitted by the Annual Meeting Funding Ad Hoc Committee Members: William N. Barkhouse, Phyllis Connor, Randy S. Ewasko, Deborah K. Grieco, Merry Lynn Southers, Gene W. Sparkman, Jim Thomas, Richard W. Verm, and Martin L. Brandt, Chairman.

Election Procedures

Stephen Hill, Chairman

The Election Procedures Committee members are Stephen Hill (Chairman), Rutt Bridges, Fred Hilterman, Norman Domenico, and Ian Jack. I am very grateful for the active contributions of all of the members.

The SEG Executive Committee created the SEG Election Procedures Committee during fall of 1998. The committee was charged with the goal of improving the SEG's annual election procedures. The committee provided the Executive Committee with the following recommendations in May 1999:

I. Double Envelope System

- A. SEG will use a double envelope system for balloting. The voting member will place the ballot inside of a ballot secrecy envelope, seal the ballot secrecy envelope, place the ballot envelope inside of the mailing envelope, sign and note their section on that mailing envelope. The outer envelope is sealed and mailed. The envelope in which the ballot is placed should have the words, "Ballot Security Envelope" clearly printed on the outside cover.
- B. The Tellers Committee will supervise the sorting of the unopened mailing envelopes by SEG section, and the opening of the mailing envelopes. When the mailing envelopes are opened, the ballot secrecy envelopes will be removed and disassociated from the mailing envelopes to ensure secrecy.
- C. At the completion of the opening of the mailing envelopes, the Tellers Committee will then supervise the opening of the inner ballot envelope. Because the ballot envelopes were previously sorted by section, it is then possible to confirm that each member received an appropriate ballot for their SEG section. (Through the application of a similar procedure in the 1998 election, we recovered from an error in the inappropriate mailing of Section Representative ballots. The SEG Business Office is aware of the necessity to improve its internal procedure for reducing the possibility of errors in the initial ballot mailing.)
- D. Upon opening, the ballots are further sorted by the ballots' printed ordering of the President-Elect candidates. (SEG creates a series of nearly

identical ballots, differing by only the printed order of the candidates for the President-Elect office.)

- E. These sorted ballots are then provided to the tabulation firm.

II. Postage

SEG will use return-postage-guaranteed for the ballots' mailing envelopes.

III. Post-Office Box

The mailing address for the return envelopes will be a rented post-office box that is used only for the accumulation of returned ballots.

IV. Ballot Invalidation

Recommendation 1: Alter the SEG Bylaws, Article VII, Section 7, which currently reads, "The Executive Director shall indicate which ballots are valid..." to read, "The Executive Director shall identify potentially invalid ballots..."

Recommendation 2: The member's return address and section code will be printed directly on the outer return envelope.

Recommendation 3: At present, ballots are ruled invalid if the ballot envelope does not contain the member's signature or if they arrived after the advertised deadline. We propose that obscuration of the member's printed return address will also invalidate a ballot. A following paragraph contains our proposed, revised ballot instructions.

Recommendation 4: SEG ballots will contain the following instructions: "After marking the ballot, place it in the ballot secrecy envelope, then seal the ballot secrecy envelope. Place the ballot secrecy envelope in the return-mailing envelope, sign and write in the name of your SEG Section on the outer, mailing envelope. PLEASE NOTE: Immediately after opening the outer mailing envelope, the ballot secrecy envelope is removed, separated and disassociated from the mailing envelopes to ensure secrecy. ALSO NOTE: SEG Bylaws require your signature on the ballot envelope to validate your ballot. Typed names do not replace your handwritten signature. In addition, obscuration of the printed return address invalidates the ballot. Add revised address information if appropriate. Seal the mailing envelope, affix adequate postage, and mail to the SEG Business Office election post office box. Your ballot envelope must be received by <date> to be counted. Officers' terms begin immediately following adjournment of the next Annual Meeting, <date>."

V. Ballot Alteration

Along with the above-stated "ballot invalidation" causes, the ballots will also contain instructions for vote alteration. The instructions will read, "To change your written vote, write the word "no" adjacent to your first vote and then mark your desired vote."

VI. Ballot Tabulation

SEG will continue to use Southwest Computing Services for ballot tabulation.

VII. Election Mechanics

The SEG Business Office will use a type size of 9 points or larger for the candidates' biographical information provided with the ballot.

VIII. Tellers Committee

The Tellers Committee section of the Procedures Manual will contain the following addition: It is strongly recommended that there be three members of the Tellers Committee present when ballots are being handled. It is suggested, but not mandated, that the Tellers Committee Chairman is the current Geophysical Society of Tulsa (GST) President and that the additional Tellers Committee members are the immediate Past-President and President-Elect of the GST.

IX. Observers

SEG will add the following to the Tellers Committee portion of the Procedures Manual: To the degree that it does not violate the confidentiality of the vote, the Tellers Committee may invite any active SEG members to observe the operation of the Tellers Committee.

X. Recount

The following recount instructions will be placed in the Procedures Manual for the Tellers Committee and a reference in the Nominations Committee's section of the Procedures Manual. The Nominations Committee will inform the candidate of the recount procedure well in advance of the announcement of the election results.

Recount Instructions:

- A. An active SEG member may request a recount of votes for those nominated to an SEG office. The request must be in writing to the President.
- B. The request is presented to the Executive Committee for discussion and a vote. Affirmation requires a majority vote of all members of this committee.
- C. The request for a recount must be made within one month following publication of election results in THE LEADING EDGE.
- D. The President appoints an impartial Active SEG Member as observer of the recounting to ensure its integrity.
- E. The SEG member requesting the recount may, if he wishes, observe the recounting or, alternately, appoint an Active SEG Member to do so.
- F. Each candidate for the office for which votes are to be recounted is advised of the impending recount and invited to observe the recounting or to appoint an SEG member to represent them at the recounting.
- G. Results of the recounting are final.

XI. No-Change Recommendations

In addition to the above-listed recommendations, the Elections Procedures Committee did consider additional aspects of the election. In the following cases, we recommend SEG continue with present practice.

A. Votes per Office

SEG will continue the practice of one-vote-per-office-per-member.

B. Candidate Biographies and Position Statements

Observation: We are comfortable with the present procedures. The Nominations Committee is a home for possible, future concerns.

XII. Tellers Committee Authority

Observation: The Tellers Committee has the authority to ensure the integrity and accuracy of the tabulation. It does not have blanket authority to rule on matters not authorized by the Constitution, Bylaws, Procedures Manual, or the *Robert's Rules of Order*.

XIII. SEG Governance Hierarchy

Observation: We have learned that the hierarchy of the SEG governance is on firm ground. It is: Constitution, Bylaws, Procedures Manual, and the *Robert's Rules of Order*.

XIV. Return of Invalid Ballots

Observation: With the implementation of the proposed membership notification of additional items for ballot invalidation, it is not necessary to return an invalid ballot to its voting member.

XV. Candidates for Office

Recommendation: We do not propose that SEG restrict the number of candidates for any office even though a large number of candidates may increase the closeness of the vote for that office.

Reports of the Representatives

AGI Member Society Council

Craig J. Beasley, Representative

The American Geological Institute (AGI) is made up of 34 member geoscience societies. These societies include academic, industrial, and governmental bodies. One of the primary goals of the AGI organization is to communicate between the various earth sciences, and thus establish a common voice for educational, environmental, and governmental issues.

AGI serves the member societies in a number of tangible ways. News, trends, and general information concerning the geosciences are disseminated through AGI's primary publication, *Geotimes*. Particular attention is paid to governmental issues and funding for the geosciences. Realizing that public opinion plays a significant role in policy decisions, AGI has focused its efforts on promoting Earth Science Week to raise public awareness of issues that relate to earth sciences. This year's Earth Science Week, October 10-16, will include field trips, classroom visits, seminars, special exhibits, and activities with scout and youth groups. Information can be found at www.earthsciweek.org.

AGI celebrated its Fiftieth Anniversary in November 1998 with an event at the National Academy of Sciences building. It also held its first Academic and Corporate Associates Conference in February 1999 hosted by Exxon in Houston. The Governmental Affairs Program of AGI is focused on monitoring Congress and the various meetings, hearings, and reports concerning the geosciences to advise the member societies of salient activities. It also aims to provide geoscience information to policy makers through actions such as funding a Congressional Science Fellowship.

AGI is continuing its commitment to education through the Environmental Awareness Series (EAS) which covers such topics as soils, water, metals and mining, petroleum and the environment, global change, cities and geology, and other topics. Another thrust of AGI is to increase awareness of national science awards among its member societies, and thereby increase participation in these awards by geoscientists. For more information, please visit the AGI Web site at www.agiweb.org.

API Central Committee for Telecommunications

Ben B. Thigpen, Representative

I attended a meeting in Washington last October (1998) where we met with representatives from the Federal Communications Commission (FCC) and another meeting in San Francisco in May (1999) where we reviewed the status of a number of items that would have adverse effect on radio frequencies commonly used by SEG members.

There are several items that we were able to complete, and these have been posted on the SEG Web site. Key items were:

1. Geophysical users are now a part of the Public Safety Group that consists of utilities, railroads, and petroleum. As such we have our own frequency coordination group, the PFCC (Petroleum Frequency Coordination Committee).

2. The FCC intended to restrict our bandwidths in the frequencies used by our service to 6.25 kHz. This would have been disastrous because our transmission of time zero data would have to be redesigned to get the accuracy down to a millisecond. Adjacent channel interference proved to be excessively high (based on some tests the API performed that were accepted by the FCC). The end result is that the existing equipment can be used until 2015 and that will likely be extended if there is still not enough discrimination to allow clear communications with 6.25 kHz spacing.

3. The Universal Licensing System rules were relaxed a bit so that round-off errors in calculation of transmitter site elevations and locations would not result in having licenses rejected.

4. Potential interference from LEOs (Low Earth Orbit satellite services) was prevented by denying them access to frequencies in our bands.

The next meeting will be held in Washington in October, and a report will be posted to the SEG Web site in early November.

I have served on this committee for nearly 30 years and consider it a privilege to continue to do so. My thanks again to Western Geophysical for continuing to bear the expenses of these meetings.

International Association of Geophysical Contractors (IAGC)

Louis I. Schneider Jr., Representative

With the global geophysical contracting industry facing perhaps the most difficult economic challenges in its 60-plus-year history, IAGC is focusing its activities on two primary goals: (1) to further internationalize the organization, and (2) to assure that each step it takes during the next 12 months results in "value-added" performance.

This internationalization will include replicating the successes of IAGC's Europe, Africa, and Middle East (EAME) Chapter throughout the association, starting in Latin America, Austral-Asia, and even in its North America home base.

By applying the value-adding elements of IAGC's growth, development, and accomplishments in the EAME region, especially during the last couple of years, to the association's other international chapters, this systematic approach is expected to bring about greater industry influence in addressing unnecessary or unreasonable governmental rules...in building a more favorable image for our industry with its many publics...and effectively resolving operational and administrative problems that prevent our industry from functioning in the most effective and efficient manner.

The association's highest profile activity during 1999 will be the sponsorship of a special "spec" data conference titled *Current Issues in Non-Exclusive Geophysical Data...The Exploration Tool of Choice* on November 16-17 at the Doubletree Hotel at Post Oak in Houston. Topics will include legal issues in the transfer of "spec" data and the fiduciary obligations in handling these data, including security issues and disclosure rules. There also will be presentations on the implications of recent court decisions affecting non-exclusive data, practical issues in structuring license agreements, and brokering oil company proprietary data. Attendees also will learn what E&P companies really want in "spec" data.

During the past year, IAGC produced several important new industry publications including the fourth edition of the *IAGC USA Geophysical Contract Manual* and the *IAGC Guidelines for Geophysical Data-Use Licenses*. The association also added a third health, safety, and environmental (HSE) training video to its library: *Helicopter Safety in Land and Marine Geophysical Operations*. (The other videos in this series are *Doodlebug Driving Safety* and *Safety Is An Attitude: An HSE Orientation to Land Geophysical Operations*.)

A special work group continues to make progress in developing the second edition of the *IAGC Environmental Guidelines for Worldwide Geophysical Operations*. A new feature of this publication will be an extensive, country-by-country reference section containing the addresses, phone numbers, and Web site links to

organizations and governmental agencies offering/specifying environmental operating guidelines or regulations on international, national, and state levels. Publication is expected in early 2000.

Current information about IAGC and its varied activities to benefit the entire geophysical community are available on the association's Houston www.iagc.org and London www.cix.co.uk/~iagc Web sites. Email addresses for the Houston and London offices are iagc@wt.net and covil@iagc.compulink.co.uk, respectively.

Offshore Technology Conference (OTC) Board of Directors

James D. Robertson, Representative

SEG is a sponsoring organization of the Offshore Technology Conference, a relationship which dates back to 1968 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. I have just finished the first year of a four-year term as SEG's representative to the Board.

The 1999 Offshore Technology Conference was held on May 3-6, 1999 at the Astrodome in Houston. Attendance was 44 749, which was somewhat lower than the 49 641 in 1998, but otherwise the highest since the 56 438 registrants in 1985. A total of 272 technical papers were presented, and 1900 exhibitors from 28 countries occupied 377 000 square feet of exhibit space. Two OTC General Sessions covered the topics of *The Energy Industry in the Next Millennium* and *Doing Business in the Caspian*, and the Active Arena focused on technology, opportunities, and developments in the Caspian Sea. The 1999 OTC Distinguished Achievement Award for Individuals was presented to Jay P. Simpson for his contributions to the development of aqueous and non-aqueous mud systems, in particular the invert-emulsion type of oil-based muds commonly used today offshore. The 1999 OTC Distinguished Achievement Award for Companies, Organizations, and Institutions was presented to BP Petroleum Development Ltd. for its Foinaven and Schiehallion FPSO/Subsea projects along the Atlantic Margin, West of Shetlands. A Special Citation was presented to the DeepStar Project, an industry-wide cooperative effort to examine and progress subsea and floating production systems for oil and gas development in greater than 3000 feet of water.

Exploration geophysics was exceptionally well represented in the 1999 OTC technical program by SEG-sponsored technical sessions on *Technology Integration for Reservoir Characterization and Monitoring*, *Deep-*

water Exploration and Development, Multicomponent 3-D Seismic Technology, and Geophysical Imaging Techniques. Details are covered in Woody Nestvold's report following this report. I thank Woody (Chairman), Linda Zimmerman (Vice-Chairman), and the other members of the Technical Program Committee for their diligent efforts in assembling these excellent papers, which were very well attended and strong contributors to making the 1999 OTC an outstanding meeting.

OTC Technical Program

E. O. (Woody) Nestvold, Representative

The 1999 Offshore Technology Conference Technical Program, held May 3-6 in Houston, upheld a tradition of excellent technical programs for SEG. Record crowds attended the four SEG-sponsored sessions, which showcased the leading edge of marine geophysical technology. One highlight of the conference was a Technical Luncheon Address by Jamie Robertson of ARCO who discussed *preparing for the forthcoming oil price rise*, a scenario that likely will ensue near the time that peak worldwide production occurs and production starts its inexorable decline. He argued that investing in E&P technology is essential to preparing for this scenario in order to cushion the impact of a sharp oil price rise on global growth and stability.

A session titled *Technology Integration for Reservoir Characterization and Monitoring* opened the technical portion of the conference on May 3. This all-day session, which was cosponsored by SEG, SPE, and AAPG, explored the topic through case studies and talks from the geophysical, geological, and engineering communities. Robert Heming of Chevron, morning keynote speaker, began the session by calling for radical changes in work practices. The morning session had a case history flavor with examples that spanned the globe from the North Sea to the Gulf of Mexico. Afternoon keynote speaker, John Hopkins of Conoco, provided a perspective of reservoir technology into the next millennium. The afternoon session had an *applied techniques* flavor. This session was developed and coordinated by Ed Stoessel, formerly of BP Amoco.

On May 4, keynote speaker William T. Drennen III of Exxon set the stage for a session titled *Deepwater Exploration and Development* by contributing a high-level perspective of the economic and technical issues involved in deepwater exploration and development. This session illustrates key geological and geophysical techniques for prediction of favorable reservoir properties and reservoir connectivity, as well as structure and stratigraphy, which have led to economical and technical successes in deepwater areas. Emphasis in the morning session was on the geophysical technology, while the afternoon session accented getting the stratigraphy right in the structure/stratigraphy relationship. This joint

SEG/AAPG session was developed and coordinated by Jim Robinson, formerly of Shell.

On May 5, a session titled *Multicomponent 3-D Seismic Technology* examined the issues surrounding how oil companies are managing the use of marine multicomponent seismic to find and produce oil and gas more economically. Keynote speaker Jack Caldwell of Schlumberger set a context for the competitive arena of multiple vendors and multiple acquisition/processing technologies. Talks in the morning session focused on the geographical theme of 4-C seismic in the North Sea. Afternoon presentations put the current achievements of ocean-bottom acquisition in their historical perspective, with illustrative data examples of both successes and failures of this technology and a look to the future. Authors discussed where the technology is going and how it will impact the exploration and development objectives. The session was developed and coordinated by Dan Ebrom of Texaco.

SEG also sponsored a Wednesday afternoon session that highlighted recent developments in seismic imaging technology titled *Geophysical Imaging Techniques*. The papers in this session familiarized the audience with some of the most promising emerging technologies in seismic imaging including new visualization methods.

The committee members who were instrumental in organizing this superior program were: Chairman E. O. (Woody) Nestvold, Vice-Chair Linda Zimmerman, Sen-Tsuen Chen, Dan Ebrom, Warren Franz, Tom Fulton, John MacDonald, Norman Neidell, Jim Robinson, and Ed Stoessel.

Meanwhile, starting in February, the committee began work on the SEG-sponsored sessions for the 2000 OTC. Plans are now well under way for a technical program that promises to be as exciting as this year's program. We look forward to another great event next year with the continuing support of the SEG membership.

Petroleum Technology Transfer Council (PTTC) Board of Directors

Glenn R. Breed, Representative

Why is the Petroleum Technology Transfer Council (PTTC) important to the United States and the petroleum industry? There are approximately 7000 independent oil and gas companies in the United States who drill 85% of all domestic wells, produce 65% of all domestic natural gas, and produce 60% of all the oil in the lower 48 states. As the major petroleum companies continue to sell their properties in the United States, the independents will produce more and more of the domestic U.S. oil and gas. If the United States is not going to import all of its oil and gas, then independents will need to find new reserves to replace current production, and they will need to produce the United States known reservoirs at

the highest recovery factor possible under existing economic conditions. Technology will have a major role to play if we are to find new reserves and increase the recovery factor of existing reservoirs. This brings up the question of where the technology comes from. The PTTC is one place where technology can be ascertained and shared.

The PTTC is focused on transferring exploration and production technology to petroleum companies operating in the United States. The PTTC is comprised of a head office in Washington D.C. and Producers Advisory Groups and Regional Leadership Organizations for each major oil and gas-producing region in the United States. A designated university for each region has the role of the Regional Leadership Organization. The technology transfer process works as follows:

The Producers Advisory Group defines an oil and gas issue such as produced water. The university that is designated as the Regional Leadership Organization then takes up that defined problem and pursues a solution. The PTTC also uses workshops, case histories, and the PTTC Web site to assist in the transfer of technology to the oil and gas operators. The operators find the workshops and the case histories to be very beneficial in solving their day-to-day problems and in helping to lower their cost, increase their production, and improve their profitability.

The United States Department of Energy's Office of Fossil Energy awarded a five-year grant to PTTC. The grant became effective May 1, 1998 and goes through April 30, 2003. The total DOE commitment is \$12.7 million and is contingent on annual federal appropriations. The funds will be used to transfer technology to the U.S. independent exploration and production companies. PTTC receives additional funding from several state governments, as well as significant contributions from universities and state geological surveys that host the PTTC Regional Leadership Organizations, and from industry. The additional funds provided by the states and independents represent a cost-share-ratio to date of approximately 40%.

In a recent study the independent oil and gas producers ranked their current technology needs as follows: (1) produce more from existing wells by identifying behind-pipe potential or through advanced stimulation, (2) prioritize in-field development through geologic targeting, and (3) increase output through improved oil recovery methods using realistic screening criteria and benefiting from sound operating practices, as documented in case studies.

The PTTC and its Regional Lead Organization were hosts for approximately 100 workshops with nearly 4000 attendees over the past year. The workshops are a primary means of transferring technology to independent oil and gas producers.

The following represents a few topics for the workshops held last year: 3-D Reservoir Characterization, 3-D

Seismic for Independent Operators, 2-D and 3-D Seismic: Effective Application Can Improve Your Bottom Line, Applied 3-D Seismic Interpretation, Recent Advances in Drilling Technology, Horizontal Drilling, Microbial Options for Increased Oil and Gas Recovery, Fractured Reservoirs, H₂S, CO₂ flooding, Produced Water, Coal bed Methane Rules, Coiled Tubing Applications and Safety Applications, and Minimizing Energy Cost in Oil and Gas Production.

As you can see from the workshop topics, the PTTC is a valuable resource for the industry, and SEG has a major role to play with PTTC and the independent producers it represents.

Please refer to the PTTC home page for more detailed information on the PTTC activities at <http://www.pttc.org> or call 1-888-THE-PTTC.