AAPG Honorees, 2006

ROBERT M. MITCHUM, JR.
Sidney Powers Memorial Award

Citation—To Bob Mitchum, a geoscientist extraordinaire; researcher, author, and applier of sequence stratigraphic concepts for exploration and development geology; an inspirational teacher and peerless mentor for three generations of geoscientists on six continents.

Robert M. Mitchum, Jr. is well known to geoscientists throughout the world for his seminal contributions in the development and application of seismic and sequence stratigraphy for petroleum exploration and development. During his five-decade career, he has had global influence as a researcher, consultant, and mentor. The first 34 years of Bob's career were with Exxon Research (and its predecessors), and for the past 18 years, he has been a consultant and teacher of short courses. The Powers Medal recognizes his scientific contributions in both of these phases, as well as his extensive teaching and mentoring throughout industry and academia.

Bob's extraordinary influence as a geologist must be traced back to his beginnings. Born in 1928, he is a native of Nashville, Tennessee, where he split his time between the city and on a nearby farm. He formalized his social status as a southern gentleman by attending Vanderbilt University, where he received a solid background in geology, with B.A. (1950) and M.S. (1951) degrees. His Ph.D. (1954) was done at Northwestern University under the supervision of Ed Dapples, Larry Sloss, and William Krumbein. This was an especially creative time, as students helped professors detail the new concepts of continental-wide unconformities bounding the Phanerozoic strata of North America. New ideas were developing regarding facies relationships, mapping techniques, and regional geology. Important lifelong friendships developed with fellow students including Peter Vail and John Sangree, with whom he worked extensively later in his career.

In 1956, he married his life's partner, Naomi, a director of Christian education and an accomplished author of children's books, a playwright, and a poet. They have three children (Ann, Robert, and Paul), and raised them in three different cities: Tulsa (10 years), Midland (2 years), and Houston (40 years). They have five grandchildren and one great grandchild.

Bob joined Carter Oil Company Research Lab (later Exxon Production Research and now ExxonMobil Upstream Research) in Tulsa in 1954, where he began his career studying regional fractures and joint patterns in contractional folds in Wyoming and the Appalachians. Two years later, he started researching carbonate facies, focusing on the Paradox Basin, Devonian strata of western Canada, and Ellenburger Formation of the Midland Basin. He moved to Houston in 1965. He also developed and led carbonate-stratigraphy field trips to the Guadalupe Mountains and Bahamas. One especially critical study—later published in AAPG Studies in Geology 1—used sparker seismic data and sedimentology on the west Florida slope carbonates, and was his first adventure into seismic stratigraphy.

In 1969, Bob joined the seismic stratigraphic section at Exxon Research, led by Peter Vail, and began to work on regional studies around the world. With his extensive interpretive and communicative skills, he established himself as a key troubleshooter for the company. Many of his service projects resulted in important research spin-offs, especially involving concepts of sequence stratigraphy and eustatic cycles. These projects allowed him to develop a global database of experience, with areas including offshore west Africa (Morocco to Ivory Coast), Argentine basins (including the Neuquen, Malvinas, Magallanes, and San Jorge basins), Australian basins (Gippsland Basin and northwestern Australia), Canadian Beaufort Basin, circum-Caribbean, offshore China, interior African rift basins (Chad and Niger), Gulf of Alaska, the North Sea Paleocene deep-water sandstones, northern Gulf of Mexico, southern U.S. Atlantic, South Atlantic salt basin (eastern South America and west Africa), and Yemen. Since becoming a consultant in 1988, Bob has added many more basins, including Indonesia, Malaysia, and several in Mexico, to his resume. All total, he has worked in detail in more than 60 sedimentary basins.

These are the basic facts of Bob's jobs and accomplishments over the course of 52 years. Few geoscientists have resumes similar to this one, but the real scientific accomplishments and contributions that make Bob so deserving of this award are best summarized in three sets of influential publications, and in his work as an inspiring consultant and mentor.

The first of these publications is AAPG Memoir 26 (1977), which defines and organizes the concepts of seismic stratigraphy (later sequence stratigraphy). These concepts were the brainchild of Peter Vail, and were developed into working systems by the seismic stratigraphy group at Exxon, including Bob, John Sangree, and many others over a period of 10 years or more

before publication. Bob co-authored nine of the eleven Exxon papers in Memoir 26. He also wrote the key definitions in the chapter 11 glossary—definitions that, today, are part of geoscientists' daily scientific vocabulary. Bob was critical to the early development of seismic stratigraphy at Exxon and beyond. Most of modern stratigraphic thought, academic and applied, is organized around the concepts of Peter Vail, Bob, John Sangree, and others, as articulated in Memoir 26.

Memoir 26 was a landmark publication because, for the first time, Pete Vail, Bob, and his co-authors defined a systematic way to integrate exploration data into a routine workflow. Many earth scientists approach their stratigraphic work today—outcrop, wire-line logs, and seismic interpretation—using this framework. This memoir literally changed how people think and, more importantly, how they work in the broad field of stratigraphy and applied geology. Bob's major contribution was to take Pete's ideas and merge them with his own observations, translating and articulating the concepts, and applying them to real-world problems, thus ensuring the success of the emerging discipline.

AAPG Memoir 26 was one of the all-time best sellers for AAPG, and certainly one of the most influential publications ever in the broad field of stratigraphy. In 1979, AAPG recognized the significance of these contributions by giving Bob and his colleagues the President's Award (best paper) for their paper titled "Stratigraphic Interpretation of Seismic Reflection Patterns in Depositional Sequences."

In another area, Bob was the first to recognize key stratigraphic relationships in deep-water stratigraphy involved in petroleum exploration and development. These observations are summarized in his seminal publications in the 1984 Gulf Coast Section SEPM Conference and 1985 AAPG Memoir 39. Both these publications were based on his work in the North Sea and other deep-water basins. He accurately proposed the sequence stratigraphic occurrence of deep-water sands, described their seismic stratigraphic signature in 2-D data, as well as the lateral, vertical, and temporal changes in reservoir architecture and sand content.

These concepts affect deep-water exploration and development at every petroleum company, every day. Consider the kinds of issues that geoscientists routinely address in their workflow for deep-water settings. In exploration, people are concerned about the presence of sands, their stratigraphic occurrence, their seismic stratigraphic appearance, their overall stacking patterns, and their relationship to the petroleum systems. In development, as companies study their large channel-fill reservoirs, important vertical changes are now recognized in the stratal architecture from (at the base) distributary channel complexes (high net:gross with good lateral and vertical continuity), changing upward to isolated channel levees (lower net:gross with poor lateral and vertical continuity) (e.g., the offshore areas of Angola, Egypt, Nigeria, Mauritania, Norway, India, northern Gulf Basin, and Brazil). Companies are still struggling with how best to develop these reservoirs in remote areas where development costs are extremely high, few data points are collected (seismic data, few wells, fewer cores or image logs, few reservoir tests), and fields are developed with minimum intervention. Application of sequence stratigraphic concepts helps optimize exploration and development in these remote areas.

Bob's pioneering observations on these matters were at least ten years ahead of the rest of industry. Geoscientists now routinely use these concepts in their daily workflow, probably without knowing that Bob initially helped to develop them.

The third area where Bob made significant contributions was in the application of sequence stratigraphy in development geology, as evidenced by his coauthoring the 1990 AAPG Studies in Geology 7 (with John Van Wagoner, Kurt Campion, and Victor Rahmanian). The primary contribution of this important volume was integrating wire-line logs, cores, and outcrop data in new ways for development geology and reservoir management. The book also challenged a new generation of geoscientists to rethink their ideas of stratigraphic correlation. Bob's influence on the presentation of these concepts was critical to the success of this book. It has been one of AAPG's best sellers, and the four coauthors received the Robert H. Dott, Senior Memorial Award for best publication in 1992.

Finally, it is always the human element that makes each Powers Medal recipient so richly deserving. Bob's most enduring contributions are in the training and mentoring of thousands of geoscientists at Exxon and other companies around the world. He has been on a mission to disseminate important sequence stratigraphic concepts to companies, and apply them to exploration and development. He has taught sequence and seismic stratigraphic schools to thousands of professionals around the world, with groups ranging from major and national oil companies, to geological and geophysical societies, to student groups. In addition, he has served as an influential, gifted, and inspiring mentor to many individuals and companies in different countries. For example, after Peter Vail's accident and surgery in 1993, Bob helped several of Pete's graduate students finish at Rice University.

Several societies have already acknowledged Bob's lifetime contributions. For example, honorary memberships were bestowed in 2000 by the AAPG and the Gulf Coast Section-SEPM, and in 1997 from the Geophysical Society of Houston.

Like many people in our profession, I've been inspired by Bob as well. I was first introduced to Bob's work in 1979, when I purchased and devoured AAPG Memoir 26. I first met Bob in late 1984, where he cleverly avoided answering my scientific questions ("proprietary reasons"). Four years later, once he had begun consulting, we developed a scientific dialog in earnest about many topics. He always served as a patient listener and sounding board, and has generously shared his wealth of global knowledge. Bob was essential in helping to establish my teaching and research program, and he remains the best technical reviewer that I have ever had. Acting as the citationist for Bob is a singular pleasure, privilege, and honor.

In summary, the Sidney Powers medal is a fitting tribute to Bob's extraordinary career.

Bob's greatest characteristics—his dedication to his family, friends, colleagues, and to our profession—are well known to all those who have ever known him.

Paul Weimer

Response

I am greatly honored by being given the Sidney Powers Memorial Award. I never dreamed of such an honor. When I look at the list of past recipients from Wallace Pratt to the present, I wonder how this has happened to me. Many thanks to all of you and especially to Paul Weimer, my citationist, and all the friends who recommended me.

I have been a geologist for 52 years and a member of AAPG for 50 years. My greatest professional joys are still in applying and teaching sequence stratigraphy, but one of the most satisfying aspects of my career is that of mentoring younger geologists. Getting to know younger people who want to learn from me is a great pleasure. John Sangree and I often mention those special people we think of as our geologic sons and daughters. They are the ones who keep the basic ideas of sequence stratigraphy moving along.

Paul Weimer is one of these special people. As my citationist, he is symbolic of the best of the later generations of sequence stratigraphers. There are many others: John Van Wagoner who still carries on at ExxonMobil, Miguel Uliana who died too young, Leo Legarreta his best friend, Frank Brown who is as old as I am but young at heart, Victor Vega, Jose Foucoult, Paul Lawless, Kevin Biddle, Mike Fitzgerald, Barbara Radovich, Mary Rainey, Sebastian Galliani, John Sneider, Tom Mooney, Grant Wach, and many others.

As a university professor, Paul is also one of the best examples of interplay between our industry and academia. Unfortunately, many university professors as well as students have become discouraged with industry, and the way we have treated people entering petroleum geology and engineering. Students do not trust us for long-term employment. Our history of shortsighted, short-term, bottom-line emphasis has produced rapid cyclic swings of hiring and unemployment, which have discouraged the best students from entering our industry. Let's hope we can learn from our past, and again attract students and professors like Paul.

In my youth I had no idea of becoming a geologist, but seem to have been guided that way in the major turning points of my life. At Vanderbilt University in Nashville, my hometown, I started as a business major, evolved into economics, and soon was bored to tears with my choice. My mother, in her wisdom, suggested I try introductory geology because she had enjoyed it so much. Two weeks into the course, taught vividly by Willard Jewell, I was convinced that I had found my career. My senior year was a scramble to change my major and to get all my course work in. I graduated in 1950 and got a master's degree in 1951. A great debt of gratitude goes to Charles Wilson, my major professor, who also recommended I go to Northwestern University for my Ph.D.

Probably my most life-changing professional event was my friendship with Peter Vail and John Sangree at Northwestern University as graduate students, working with professors Krumbein, Sloss, and Dapples, where Pete got many of his ideas on cyclicity. It turned out that Pete's dissertation field area directly underlay mine in the Cumberland Plateau of Tennessee. There were many lasting friendships there, including Andy Baillie, John Hefner, Jim Forgotson, and King Huber. After Parke Dickey recruited me for the Carter Oil Company Research Center in Tulsa in 1954, I like to think I influenced Pete and John to come there in the following years.

After two years of bachelorhood in Tulsa, I met and was lucky enough to marry Naomi Estopy, who was youth director at Boston Avenue Methodist Church. After our marriage in 1956, we both continued to be active in the church, as we are today. Our daughter Ann was born in 1959, Robert in 1961, and Paul in 1966. We have five grandchildren and one great grandchild. Naomi also has her own career of writing and Christian teaching, as well as sponsoring disability awareness and mentally challenged groups in our local church and conference. This activity continues despite her health problems.

When I look back on the formative years of sequence stratigraphy, it is difficult to use the word "I" in describing them. The word is "we" because we were, and still are, a group that worked together in the very best sense of the word.

Pete Vail was our leader and visionary. He was the man with the concepts of how sedimentary rocks were deposited in response to cyclic changes in sea level. John Sangree and I, as well as others like Rick Sarg, Bob Todd, and John Van Wagoner, did our best to figure out what he was thinking and talking about. Without him there would have been no group or no sequence stratigraphy. In the early 1970s, we were formulating fundamental ideas about the chronostratigraphic significance of bedding surfaces, unconformities, and seismic reflection patterns, and about the worldwide synchroneity of sequence boundaries on Pete's cycle charts. We had a wonderful group, but Chuck Campbell was our mentor in understanding bedding surfaces and depositional environments. My role was to look for practical applications of sequence stratigraphy in the rocks, and I am still doing that. John Sangree was in and out of operations management several times, so he saw other types of exploration applications.

In the mid 1970s, the publication of seismic stratigraphic concepts in an AAPG Memoir (Memoir 26, 1977) was considered. A poll of Exxon exploration managers showed that they thought seismic stratigraphy had been applied about as far as it would ever go, and that there would be no loss of competitive advantage in its release. I could spell better than Pete, so I got to do a lot of the writing, and in that way finally got the concepts into my head. One important person who made a remarkable contribution was Sam Thompson, who joined our group from operations. He lived and breathed geology, had a firm grasp of the problems of stratigraphic nomenclature, and as an editor demanded clarity and accuracy in our writing.

During my many years as a stratigraphic troubleshooter, other interests and concepts became part of the story. These included the seismic recognition of deep-sea fans, the accommodation model, and sequence

interpretation of well logs. These changes broadened our scope, and evoked the name change to sequence stratigraphy. John Van Wagoner and Miguel Uliana played significant roles during this period.

In 1988, I retired from Exxon after 34 years with the company. Pete was by then a professor at Rice University, and John Sangree had retired to consult on his own. I joined John Sangree and Bob Sneider to explore, consult, and give in-house sequence stratigraphy schools, ultimately working with nearly every major company and national oil company worldwide, and teaching innumerable explorationists in our short courses. I met many wonderful people, and my horizons expanded exponentially as I discovered there really was a world outside of Exxon.

And then along came computers. For many years at Exxon I saw computers being developed with all their growth problems, and it appeared they were more trouble than they were worth. Unwisely I decided to avoid them as much as I could. This separation was more or less forced upon me later when I started consulting and had no access to computers except with a client geologist as the interface between the machine and me. I fell far behind. In my present consulting job with Chevron, formerly Texaco, I started out with paper copies of seismic lines and the ever-faithful Prismacolor pencils. The back of my room then began filling up with paper, and I had a space problem. They finally told me, "You've got to learn to use the workstation," so I've gradually learned to interpret on the computer.

I have seen all the gorgeous and innovative computer attribute analyses and programs. They are wonderful. However, my theme has always been that unless you put good basic stratigraphy into the interpretation, then the beautiful images mean little. Know where the sequence boundaries are, what systems tract you are in, and have a mental image of the depositional body you are dealing with. Then the splendid images mean something. It is much easier to see the beautiful meanders of a leveed channel on a computer-derived amplitude extraction or edge map than to recognize the sheet-like frontal splay that may underlie it, although the sheet sand may have much more reservoir capacity than the channel.

In conclusion, my most valued prizes are the friendships evolving throughout the years that have greatly enriched my life. I still feel great enthusiasm about geology, and plan to continue as long as I enjoy it and feel I am making a contribution.

Thanks again to all my friends who have made this award possible. May God's blessings continue to follow us all.

Robert Mitchum

RICHARD S. BISHOP

Honorary Member

Citation—To Richard S. Bishop, in recognition of his visionary leadership and his extraordinary personal contributions of time and energy to the membership of the Association and to the broader profession.

Richard Stearns Bishop was born in Dowagiac, Michigan on April 14, 1945, to Margaret and Barton Bishop—both geoscientists who had met at the Pure Oil Company. Dick and his family moved to Texas in 1953. His mother anchored the family as a professor of geology at the University of Houston, and his father set up a consultancy, thus avoiding the confusion and stress of the oil-field moves common during the 1950s and 1960s. Dick progressed through the normal process of general education in Houston schools and enrolled at Texas Christian University (TCU) in the fall of 1963 to study pre-law.

Although he was clearly introduced to the field by his parents as a child, at TCU Dick became an academic student of geology and graduated with the Gayle Scott Award for outstanding geology undergraduate.

Following his successful career at TCU, he enrolled at the University of Missouri and received his Master of Science degree in geology in 1969. At Missouri, Dick was a teaching assistant and prepared a thesis on the fractures in the flat rocks occurring in central Missouri.

Anxious and excited about his first full-time paying job in geology at Union of California (successor to the Pure Oil Company), Dick moved into a below-sea-level apartment in New Orleans just in time for Hurricane Camille to hit the coast. After the storm passed, Dick began his training in development geology. Ship Shoal 253 was his first major project—a complexly faulted Pleistocene salt dome outbound of most production at that time. Dick looked after the drilling of several wells on this feature before moving on to exploration in the western Gulf of Mexico.

About this time, he was introduced to Edythe Marie White, a Shell geophysical mathematician. One thing led to another and Dick and Edie were married on January 15, 1971, in a suit he borrowed from me. This (getting married, that is, not borrowing the suit) was easily Dick's best adult decision.

Understanding the importance of education ingrained in him by his parents, Dick returned to school to pursue his doctorate at Stanford University in 1971. Buying a small house in Menlo Park turned out to be an especially good investment for the new family, and when he took employment at Exxon in 1975, he started work with a small nest egg thanks to the California land boom. At Exxon, Dick signed on with Exxon Production Research Company (EPR)

as a research geologist. His dissertation at Stanford was on shale diapirism, but he seized the opportunity to expand his knowledge to new fields in the stimulating environment of EPR, developing expertise in basin modeling; material balance; and trap integrity, prospect, and petroleum system assessment. Dick enjoyed seeing the "big picture" of global exploration and developed many assessment guidelines; among them was gas displacing oil as an additional consideration in assessing the chance of oil or gas in traps.

Following six years at EPR, Dick moved back into the line and worked for the Exxon USA–East Texas Exploration Division, evaluating the potential of tight sand reservoirs. He also served as a group leader for the Texas State Waters group and participated in exploration planning.

In 1984, Dick became the district geologist for the Central Production Division and in 1986 moved back to exploration for Exxon USA's Offshore/Alaska Division.

Because of his knowledge of petroleum systems and his special ability to generalize, he returned to EPR in their international program. There, he was able to look for the "universal truths" in the hydrocarbon systems of the world and provide assessments of many producing and nonproducing basins for Exxon.

Dick really got into the service aspect of our profession when he edited the Houston Geological Society's (HGS) *Bulletin* from 1981 to 1983 and laid a foundation contributing to its present format. In 1989, he was elected president of the HGS and served with distinction, earning both an Honorary Life Membership as well as the Distinguished Service Award.

Along with many other honors, Dick is a Distinguished Alumnus of the University of Missouri, a Fellow in the Geological Society of America and has been recognized by AAPG with the Sproule Award, two Certificates of Merit, and the Distinguished Service Award, as well as serving as secretary in 1990–1993 and president in 1998–1999. He chaired the very large annual AAPG convention in Houston in 1988, coorganized three Hedberg conferences and chaired numerous committees. During his AAPG presidency, the Association entered into the digital era with the authorization of the purchase of "Datapages." Dick has also tirelessly pressed the Association to add GIS projects to its agenda. His energy and dedication to the Association is exemplary.

Dick has published several papers on subjects as diverse as source rock maturation, hydrocarbon volume estimation, genesis of abnormal pore pressure, and mechanics of diapirism and has lectured on a broad range of topics including geochemistry and rock properties. He has written many Exxon technical reports on a variety of subjects and has taught in-house courses on basin modeling, basin and prospect assessment, material balance methods of prospect assessment, and analysis of global exploration opportunities. His knowledge base is quite sophisticated and extensive, and he has shared generously with his fellow professionals, while respecting the ethics of good business practices.

Dick has been a good friend to many. His love for Edie and their two sons, Ryan and Timothy, form the core value of his life.

I consider him a good and loyal friend, and I am honored to pen this citation. Dick has given freely and honestly of his time and energy to this organization and has served with honor and dignity during some difficult times. His respect for his peers should serve as an example for all members of this great Association.

Bob Ardell

Response

I was recently chatting with a friend and mentioned an offer one of our sons had received and his excitement with the new project. My friend commented that there just is not anything like recognition to make a person feel good. And that's how I feel with this wonderful recognition from AAPG. I've had a wonderfully enjoyable career in which I was able to do almost all of the things I wanted to do, and to now be in the company of some of the most distinguished geologists in the profession is very special.

My biggest honor, however, is not professional but personal. Nearly 35 years ago I convinced my then girlfriend, Edie, that it was a good idea to marry me. I've kept her fooled ever since, and we have a delightful, fun, and loving relationship. She's my perfect partner. Along the way, she has made it possible for me to pursue the many things I found fun to do both within AAPG and at ExxonMobil. Edie is just as much a recipient of this award as I am for she has fully participated in many of the activities, been a sounding board for ideas, and has been a leader on her own, such as president of the Geological Auxiliary. Along the way, this lovely and smart mathematician has also worked in geophysics at Shell, finance at Stanford University, taught high school, and together we raised our two marvelous young men, Ryan and Timothy—or perhaps I should say three and include myself as a beneficiary of her philosophy and remarkable insight. The saying "be all you can be" is great advice but possible only with support and help from a wonderful family.

It may seem self evident that my career started with Mom and Dad, but they were an unusual couple: They were a geologist and geophysicist, respectively, and the proprietors of Bishop and Bishop Consultants, Cassopolis, Michigan. We later moved to Houston where I learned not to say "wrong number" when someone asked for Dr. Bishop. That was Mom, who was then a professor at the University of Houston. My parents, however, did not encourage me into earth science; they just expected us to do our best and taught us by their own example of hard work, fairness to all, and recognition of and appreciation for others. When I left for college, I was going to be a constitutional lawyer until Jack Walper introduced me to the fun of geology.

In looking over the requirements of the award, it says recipients "have distinguished themselves in science and service to the profession of petroleum geology. . . ." What constitutes distinguished is not defined and I suppose, largely dependent on the evaluator. Looking back over the last 35 to 40 years, I cannot say what is distinguished about it, but I can identify some of the things I value greatly. Among them includes my great delight in unraveling and interpreting geological processes. How things work provides one

with many insights to interpreting the sequence of geologic events. The thrill comes from solving the problem, and the pleasure comes from working with great people. Along the way I learned how difficult it is to communicate new ideas and concepts and hopefully learned that I am probably as guilty as the ones I could not convince.

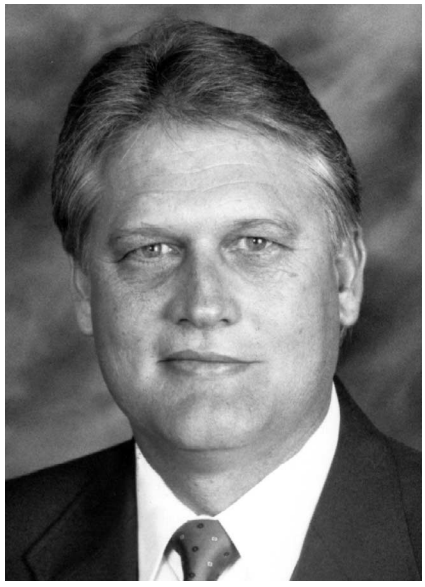
Two processes I have particularly enjoyed were the work on mechanics of diapirism and developing methods to unravel the history of hydrocarbon charge to traps. In addition, I have enjoyed developing a global perspective. I was very fortunate to have the opportunity to develop guidelines for assessing plays and prospects and integrating those results into a global picture of exploration potential. Today, after retiring from ExxonMobil, I continue to have great enthusiasm doing geology both domestically and internationally. Ten years from now, I expect to still be doing geology, and I suspect I'll still be trying to get AAPG to do more with GIS.

Throughout my career, I have been fortunate to work not only with good people but also with many great ones. This commentary is probably as good a spot as any that I shall have to recognize them for the positive impact they had on me. The list is longer than the following, but it shows you the exceptional people required to influence a stubborn person like me, and it shows my great fortune to know such wonderful people.

My biographer, Bob Ardell, was not just an early mentor at Unocal but has been an inspiration not only to me but also to many others through his business skill, technical excellence, integrity, and generosity. At Exxon Production Research, Al Young was an example of practicing rigorous yet practical science and helped me "keep the faith" when our significant discovery was doubted (and later proved correct). Mike Johnson, also of Exxon, always made the business case for how the company benefits from employee involvement in professional societies and made it possible for many employees to be active in them. His saying, "Do the right thing right," was always very encouraging during some bumpy times. During my time with Exxon Exploration, I worked with many wonderful folks, but coworker Parke Snavely stands out not only for his many outrageous ideas but also as one who focused on doing things right, even when business practicalities resisted. Within the area of professional matters, Jim Lewis provided some of the best advice I ever received: "Don't explain something that is complicated; just ask the right question and your audience will understand." I give a special thanks to John Harbaugh, Bill Dickinson, and Ben Page of Stanford University. Early in my career, they showed the value of personal courage and faith in individuals.

In closing, it has been a privilege to have been president of AAPG just as it was a privilege to work for an outstanding company with so many exceptional people. It is always a privilege to be expected to do your best every day, in everything you do, no matter the organization. So thank you, AAPG, for this recognition; thank you, ExxonMobil, for supporting the vision of an even better AAPG; and most of all, thank you, Edie, for the marvelous, and continuing, journey.

Dick Bishop



TERRY L. HOLLRAH

Honorary Member

Citation—To Terry Hollrah, for distinguished and wide-ranging service to AAPG, outstanding contributions to petroleum geology and the industry, and impeccable personal and professional integrity.

Terry Hollrah has been an AAPG member for 31 years and an independent geologist/explorationist for 25 years. During this time Terry has had a distinguished, successful career and has provided an unusual amount of invaluable service to AAPG. In recognition of his remarkable achievements and dedication to the Association, Terry L. Hollrah is fittingly named an Honorary Member.

Terry was born June 30, 1953, in Garfield County, Oklahoma; he is the youngest of four sons of Roy and Grace Hollrah, who were wheat and dairy farmers. After graduation from Pioneer High School, he attended Oklahoma State University (OSU), earning a Bachelor of Science degree in 1975 and a Master of Science degree in 1977. Terry and Betty Hollrah, who live in Edmond, Oklahoma, are proud parents of 16-year-old son, Nicholas.

Terry's M.S. thesis, entitled "Subsurface Lithostratigraphy of the Hunton Group, in Parts of Payne, Lincoln and Logan Counties, Oklahoma" and later published by the Oklahoma City Geological Society, was under the direction of Gary Stewart, an invaluable mentor and friend. As a student, Terry worked part-time for a small oil company under the tutelage of the late Joe Newcomb, also a valued mentor and friend. After George Moore encouraged Wally Saultz, recruiter for Union Oil Company of California, to visit Oklahoma State, Terry became one of the first OSU graduates Unocal employed. His assignments in Oklahoma City with Unocal from 1977 to 1979 included exploration of the Arkoma basin and part of the Anadarko basin. He joined Samedan Oil Corporation as division geologist in Oklahoma City before forming Hollrah Exploration Company in 1981. Even though the industry experienced two major depressions after the company's inception, Terry has had phenomenal success, finding oil and gas mainly in central Oklahoma, a very mature hydrocarbon province and in the general area of his roots. In some of his exploration activities, Terry worked with the late Oklahoma exploration pioneer,

Lon Turk. He has found production in a wide range of reservoirs, from Pennsylvanian Cherokee sandstones to Ordovician Simpson sandstones, and most recently an oil-bearing section 75 feet below the top of the "Second Wilcox."

Terry has provided distinguished service to the Association across a broad spectrum of activities involving committees, divisions, the Advisory Council, the House of Delegates, and the Executive Committee. He has served the House of Delegates since 1988 in a wide range of positions, including delegate from the Oklahoma City Geological Society, serving as group chairman for two years; member of the Nomination and Election Committee, Rules and Procedures Committee, Credentials Committee, and Newsletter Committee; chairman-elect; and chairman in 2002–2003. In addition, he served on the ad hoc committees for Election of Editor and for Independent Audit. In 2003, the House of Delegates honored Terry with the Recognition of Service Award.

As a certified petroleum geologist by the Division of Professional Affairs since 1985, Terry has been equally active in providing invaluable services to the DPA, first in 1992 as Mid-Continent Section Council Member and subsequently as member of the Nominating and Government Affairs committees, chairman of the Honors and Awards Committee, vice president, president-elect, and president in 1995–1996. In 2000, Terry received the DPA's Distinguished Service Award.

From 1989 to 1993, Terry was a member of the Advisory Council as the Mid-Continent representative. He served two additional terms on the Advisory Council, the more recent being 2003–2004. He served on the Executive Committee when he was AAPG treasurer in 1998–2000, and in 2002–2003 as chairman of the House of Delegates.

Terry has served on the Investment Committee since 1998, coinciding with his election as AAPG treasurer. He is also a member of the GeoVest Committee, and he was a founding participant in the GeoVest program. He also served on the Ethics Committee. While treasurer, his responsibilities included membership of the Budget Review and Finance Committee, Pension Review Committee, and Headquarters Operations Committee. Additionally, he serves on the Committee on Committees and the all-important Group Insurance Committee, vice chairman from 2001 to 2004 and current chairman. While treasurer he insisted on a financially viable Association during some potentially difficult fiscal times. He has been aggressive in the expansion of the base of the Group Insurance by including other associations, thereby giving the insurance program much better bargaining power with the carriers, providing additional plans and improved coverage and service, while keeping costs as low as possible in comparison to claims. Terry received AAPG's Distinguished Service Award in 1997.

He has been a Trustee Associate of the AAPG Foundation since 1997.

Terry is a member of the Oklahoma City Geological Society, the Tulsa Geological Society, and the Society of Independent Professional Earth Scientists. In SIPES, he has been Oklahoma City Chapter vice chairman and chairman. Nationally, he has served as vice president of natural resources, as director, and as SIPES Foundation vice president. He was Technical Program chairman for the 2005 AAPG Mid-Continent Section Meeting. In 1997, Terry was the recipient of the Mid-Continent Section's Roger N. Planalp Memorial Award. He has also been active in his support of the geology program at Oklahoma State University, in particular, with time and money for students. He is most proud of the drilling rig tours he leads for geology students.

Terry is obviously very talented and willing to use those talents for the betterment of the Association, the profession, and the industry. His leadership and management skills, in addition to his business acumen, have been invaluable to the Association. Terry's unselfish service and loyalty to the Association, which have been abundantly demonstrated in a quiet, unassuming manner, are deeply appreciated by both the membership and headquarters staff. The high esteem in which the membership holds Terry is reflected by his elections, appointments, and awards. Those members of the headquarters staff who have worked with him most closely hold Terry in high regard in large measure because he "personifies great character, integrity, and excellence" and because of his "good-natured mannerism." The Association is proud to have Terry Hollrah as one of its Honorary Members.

John Shelton

Response

Being recognized by one's colleagues and peer group is the ultimate form of acknowledgement and achievement. To receive an award of this magnitude affords me the opportunity to thank many individuals who have been instrumental in the guidance of my career.

I truly believe that being blessed in having been raised with a hard-working family was indeed the background of any success that I have had throughout my life endeavors. My parents instilled the fortitude to "be thankful every morning when you get up, that you have something to do which must be done, whether you like it or not. Being forced to work and do your best will build in you temperance, self-control, diligence, strength of will, content, and a hundred other virtues which the idle will never know." Growing up on a dairy farm certainly instilled a desire to appreciate the fruits of one's labor.

Nearly 35 years ago, I was fortunate in two distinct occurrences. First, I changed my major from chemistry to geology. Second, the group of geology professors I had throughout my professional education could not have been better selected. To Gary Stewart, John Shelton, Nowell Donovan, and the late Zuhair Al-Shaieb, I'm indebted for the patience each exhibited and the education each provided. None of this would have happened without the teaching ability of these individuals.

My professional career actually started when I was still in graduate school. Again, fate smiled on me when I met two icons of the oil industry: Thomas E. Berry and Joe Newcomb. Both of these individuals were the defining basis for honesty and integrity of the business and both are sorely missed.

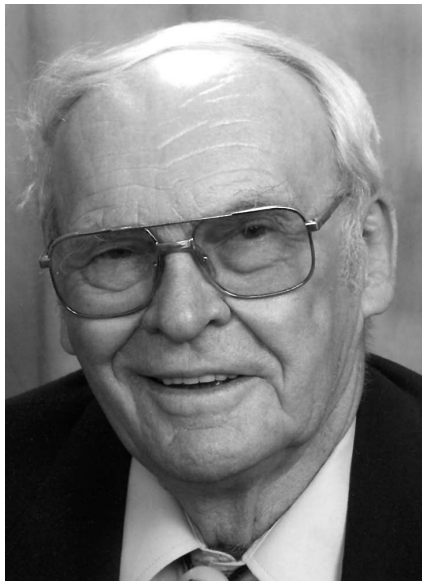
As I continued my career journey, a better script could not have been written. I met my future wife, Betty, and I never had a boss I didn't like. Geologists are an interesting breed. The comradeship among our colleagues is amazing. In good times or bad times, geologists continually help and support each other in need. This was certainly true when I took the independent leap in 1981. Having joined AAPG in 1975, I quickly realized the importance for networking with the vast talent of the men and women geologists who I met through the various committees I served on.

Because of the importance of associating with other geologists, I was able to meet and befriend an elderly gentleman by the name of Lon Turk. He became my ultimate mentor in the field of geology. He took it upon himself to teach me certain "old style" exploration techniques that one cannot learn from a textbook. When Lon Turk passed away at the young age of 91, I was still taking electric logs to him for both of us to look for that next big prospect. Still today, his office door (though long abandoned) bears the lettering of his name and the simple words: Petroleum Geologist and Explorationist. Hopefully, I have been able to pass on a small part of that educational experience to some of today's bright young minds.

Over the past 30 years, I have had the privilege to serve with scores of individuals that have volunteered to serve on AAPG committees. Space limitations prohibit the acknowledgement of the individuals that I have come to know through that association. Through the ups and downs of the industry, AAPG has survived because of and through the foresight and intuitive ideas from the leaders of our organization. Similarly, the employed staff of AAPG should be thanked and commended for their hard work for enjoining the proposals put forth by the leadership of AAPG.

I will be forever grateful for being allowed to be a part of the decision-making process of AAPG for the last three decades, and I am truly humbled by receiving this honor. Thanks to all of those involved for bestowing this award on me.

Terry L. Hollrah



JOHN W. ROLD
Honorary Member

Citation—To John W. Rold, for contributions to professional excellence through public service, leadership, research, and as a respected public spokesman for the indispensable need of geology in our society.

Honorary membership is the Association's second highest award and is conferred to members who have distinguished themselves in service and devotion to geology and the Association. Having known John W. Rold for 56 years, I can attest that he is eminently qualified for this high honor.

Born in Kirkman, Iowa, in 1927, John moved at age 5 with his family to a ranch near Salida, Colorado. His father died when John was 12 years old, and he then assisted his mother in running the ranch during the depression years. Many of his personal traits of honesty, integrity, morality, fairness, individuality, practicality, personal responsibility, and leadership were formulated during this difficult time. Moreover, to put food on the table, he developed a lifelong interest in hunting, fishing, and the outdoors, an interest that served him well as a field geologist.

Following service in the U.S. Navy during World War II, John received B.A. (1948) and M.S. degrees (1950) in geology from the University of Colorado. John then worked for the California Co. (now Chevron) for 20 years, where assignments included field geologist, geophysical supervisor, and district geologist of the Plains and the Montana-Dakotas districts. Appointment as the director, Colorado Geological Survey and State Geologist in 1969 broadened his career in new directions. In retirement after 23.5 years of dedicated service to Colorado, John is now a private consultant specializing in geologic impacts on development and geologic hazards.

As a petroleum geologist in the Rocky Mountain states and Gulf Coast, John recognized the professional importance of AAPG (member 1950). He volunteered for many committees from 1965 until the present and served in the House of Delegates (1971–1973 [as vice chairman], and 1980–1983). He was general vice chairman of the 1972 National Convention in Denver and was elected vice president and then president (1980) of the Rocky Mountain Section. John was awarded the Public Service Award in 1984.

Moreover, John made significant contributions to the AAPG affiliated society, the Rocky Mountain Association of Geologists (RMAG). He chaired many committees, published articles on Denver basin petroleum fields, and co-edited an important symposium on Lower and Middle Paleozoic Rocks of Colorado. He was elected president in 1964, and has received the RMAG Public Service Award, and been named an Honorary Member.

With the reestablishment of the Colorado Geological Survey (CGS) in 1969 after 40 years of dormancy, John, as the first Director, played the key role in hiring staff to plan for and implement the new statutes. By dedicated leadership ability and unusual personal commitments, John built the CGS into a highly respected problem-oriented and research organization. Statutes obligate the CGS to inventory and promote

Colorado's mineral resources, identify geologic hazards, and provide service to other governmental agencies. John and staff effectively carried out those directives, but with occasional opposition and rancor from state politicians.

Minerals became Colorado's heritage after the 1859 gold discovery in the Front Range, coal mining near Boulder in 1859, and the 1862 discovery of oil in the Canon City area. Under John's capable leadership, the CGS staff conducted research in the broad field of natural resources, but in particular an international reputation was developed in coalbed methane research aiding in commercialization. CGS studies over the past three decades have contributed to an increase in the value of minerals produced in Colorado, which reached a high in 2004 of $8.5 billion, an important part of the state's economy.

A lasting favorable impact of CGS during John's reign as director is the statutory codification of geology as a required consideration in public and private decision making in land use and mineral resource issues. With this development, John became an effective geology spokesman to legislators, the news media, and the general public.

John's broad interest in geology is reflected in membership and service in societies other than AAPG. Some of these are the American Institute of Professional Geologists (president 1981); American Association of State Geologists (hon.); Geological Society of America; American Geological Institute; Colorado Scientific Society (president 1975, hon. 1978); and the Colorado Wildlife Federation (Board of Directors).

In addition, John has contributed to state and federal activities by serving on the following committees and boards: chairman of the National Research Council Committee for Research Needs for Managing Federal Mineral Resources; five years on the Colorado Mined Land Reclamation Board; Colorado Low Level Radioactive Waste Advisory Board; Colorado National Hazard Mitigation Council; State-Federal Oil Shale Task Force; Scientific Manpower Commission; and the Research Committee of the Interstate Oil Compact Commission. He received the Colorado Governor's Award for Distinguished Service in 1992.

Despite the time commitment to a successful career, John found family time for Phyllis, his wife of 49 years, and their four children, Marc, Becky, Cindy, and Gregory. In retirement John does consulting and volunteer work, but travel and time for the family now have the highest priority.

From humble beginnings in rural Colorado, John's remarkable career is a model of success brought about by talent, dedication to noble purposes, and opportunities presented by a free and open society. This honor is richly deserved by a man who has never forgotten where it all started.

Bob Weimer

Response

AAPG President Pete Rose surprised, exhilarated, and humbled me when he notified me of being named an Honorary Member, AAPG's second highest award. Although in the past I had received my share of recognition for activities with AAPG, RMAG, and the American Institute of Professional Geologists, my involvement with AAPG had diminished following retirement from the Colorado Geological Survey (CGS). The thought of honorary membership had never crossed my mind.

I first met citationist Bob Weimer in 1949 at a weekend geologist recruiting party hosted in Denver by the California Company (now Chevron). They had invited Bob from Wyoming University and me from Colorado University. This chance meeting sprouted our 56-year personal and professional friendship. Although we kept in touch through meetings, field trips, and my reading his publications, I never envisioned the impact he would later have on my career.

In 1968 the legislature passed a statute reviving the 30-plus-year defunct CGS. Probably my experience with Colorado geology and my leadership experience with the Rocky Mountain Association of Geologists (RMAG), AAPG committees, and as a district geologist caused several people whom I respected to urge me to apply for directorship of the yet-to-be-reestablished state survey. I sought Bob's advice on the matter. He tactfully but firmly pointed out that I did not have a Ph.D., only had oil company experience, and that the state's geologic problems would require much broader experience than mine. That temporarily cooled my ardor for the job. However, I couldn't pass up the challenge of starting a new state agency and building a geological survey to address the geological problems in a state that I loved. I decided to go for it and learned the position would be selected by competitive merit examinations not political appointment. Cognizant of Bob's valid comments I devoured textbooks on mining geology, engineering geology, industrial minerals, groundwater, and Colorado's mineral resources.

Imagine my shock when I appeared for my oral competitive exam and discovered that Bob chaired the three-person selection committee. The sign-in sheet said I could disbar any committee member if I felt he might not give me an unbiased evaluation. Remembering our conversation I considered removing Bob from the committee. However, I decided that if I were appointing people for the committee, Bob was someone I would pick so I left him on the panel. Hopefully, I justified the panel's faith in me when they selected me for the position. To Bob's credit and my benefit he was always a strong but critical supporter of the survey and me.

My first involvement with AAPG occurred in 1950. My supervisor Julian Low told me that because I had conducted such an excellent stratigraphic study of the Dakota Group in the Denver Basin, the company would send me to the upcoming national AAPG Convention. However, company policy was to only send members to such meetings. Immediately I filled out a membership application, wrote a check, and mailed it. Throughout my career I used similar approaches to recruit subordinates and peers to join AAPG. My strong encouragement of staff and peer involvement in scientific and professional activities resulted in career-long service by many to AAPG and other societies.

Space allows me to list only a few of those people that affected my life and career in such a positive way that I could merit this award.

My mother acquired ranch management and dual parenting responsibility after my dad died when I was only 12. She instilled a set of core values that I've followed all my life. She convinced my two younger sisters and me that somehow we'd all go to college. She preached that I should strive to be the best I could be in whatever I was doing and that I should leave every situation I encountered in better condition than I found it. She set high goals. I had a knack for spelling so we set a goal that I would win the county spelling contest. After countless hours of her grilling me, I won the county contest in my 6th, 7th, and 8th grades. When I told her that my scores in a nationwide test qualified me for Navy V-12 officer training she cried and then said, "You can be a good officer."

My high school football coach taught me the value of teamwork; that 11 individuals could accomplish little but a team of 11 could accomplish wonders. We proved it when Salida, the smallest school in class A football, won state championship runners-up in my sophomore, junior, and senior years.

My naval officer training taught me that "one should delegate as much authority as possible but one should never delegate one's responsibility." Often I've seen poor supervisors do the opposite.

Warren O. "Doc" Thompson, geology professor and department chair at Colorado University, became my advisor, mentor, and father figure. He used sayings such as "If you think you're right stand firm until somebody or something proves you're wrong. Then admit your mistake and move on." "If you can't sell your ideas to your boss, a consultant, or financial backer, your ideas are not worth much." He and other CU geology professors provided me a practical geological education that allowed me to earn my pay the first day on the job.

Julian Low, my first supervisor and mentor with Calco, taught me subsurface geology and the value of looking at the rocks, and refined my field techniques. The staff there covered for me when I was engaged in AAPG and other society activities.

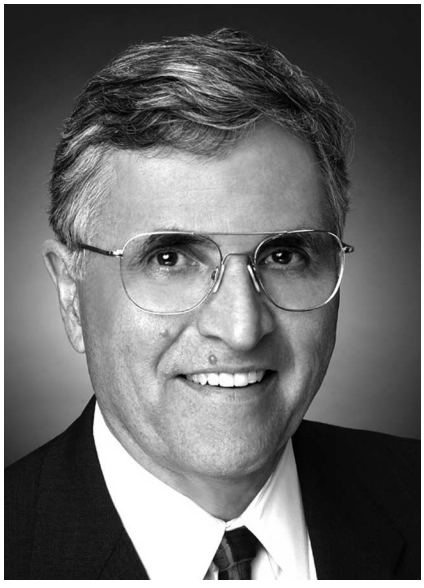
The competent staff at CGS, particularly "Pat" Rogers, my right-hand man for more than 20 years, accomplished much for which I received credit. We recruited hard. Through the state's competitive hiring procedures we hired good people and provided them with challenging work.

Ken Wright of Wright Water Engineers started me on my third career (consulting geology) when I retired from CGS in 1992. I furnish the geologic component of their interdisciplinary teams investigating water resources, landslides, rockfall, and other geologic hazards. The last few years I've worked with Ken investigating fascinating paleohydrologic facilities of the Anasazi at Mesa Verde.

Most important of all, I thank my wife Phyllis. At a Calco Christmas party in 1955 the geologists invited ladies from the sales department to join our revelry. I took the prettiest lady in the group to dinner afterward. A year later we married on Christmas Eve. She's been our homemaker ever since. Much of that time the family consisted of four growing children and two Weimaraners. We always had hot breakfast before work and school. She kept the home fires burning when I was on fishing, hunting, or business trips. When times were tough, she provided a psychological safety net. Now the four grown children have provided us seven grandchildren for Phyl's grandmothering. She now accompanies me on trips mixing pleasure with business.

I experienced three distinct but related careers—21 years in petroleum exploration, 23.5 years as State Geologist, and 13 years consulting. Today the AAPG honorary membership forms a pinnacle to those careers. My heartfelt thanks goes to everyone who made my award possible.

John W. Rold



HARRISON HAGAN SCHMITT

Honorary Member

Citation—To Harrison Hagan "Jack" Schmitt, only geologist-astronaut to walk on the moon, administrator, U.S. Senator, educator, and businessman dedicated to lunar exploration, developing lunar resources and helium-3 fusion power, and national energy security.

Secretary of State Colin L. Powell on July 29, 2003, made the following remarks in the Benjamin Franklin Room of the Department of State Building, Washington, D.C., at the First Presentation of the Harrison H. Schmitt Leadership Award for Fulbright Student Alumni:

"Few embody the American spirit that we want to present to the world as completely as Dr. Schmitt. As a senator, as a scientist, as a teacher, as a businessman, he has made extraordinary contributions to his fellow Americans, to his nation, and to human knowledge.

"Dr. Schmitt, we have created this award in recognition of the very inspirational role that you have played in public service and in international exchanges. We hope that this award will motivate future leaders to venture to distant lands, or even to the stars, in the spirit of adventure and understanding. Thank you for allowing us to use your name, sir."

Harrison Hagan "Jack" Schmitt, a native of Silver City, New Mexico, is a geologist and businessman. He has been a geologist-astronaut (the only geologist to sample and explore the surface of the Moon in person), administrator for NASA's Energy Program Office (1975–1976), and a U.S. Senator (1977–1983). Currently he is an adjunct professor of engineering at the University of Wisconsin-Madison, teaching "Resources from Space"; the chairman of Interlune-Intermars Initiative, Inc; chairman of the AAPG Astrogeology Committee; and author of the recently published book *Return to the Moon*, as well as being a member of many boards.

After receiving his B.S. degree from Caltech (1957), he studied under a Fulbright Scholarship at the University of Oslo, Norway (1957–1958). His doctoral studies evolved from his Norwegian work and resulted in a Ph.D. in geology from Harvard (1964). In addition to his geological fieldwork in Norway, he has worked in New Mexico, Montana, and southeastern Alaska. Before joining NASA, he worked with the U.S. Geological Survey's Astrogeology Branch in Flagstaff, Arizona as project chief developing tools and techniques for doing geology on the Moon in a space suit as well as lunar geological mapping (by photos and telescope) of the Copernicus Quadrangle.

He was selected for the Scientist-Astronaut program in June 1965. He was promptly sent to pilot school, and after 53 weeks of training he received Air Force jet pilot wings in 1965 and Navy helicopter wings in 1967 (as a civilian). In addition to training for future manned space flights, he organized the lunar science training for the Apollo astronauts. He represented the crews during the development of hardware and procedures for lunar surface exploration. He was designated Mission Scientist in support of the Apollo 11 mission to the moon. After training as back-up Lunar Module Pilot for Apollo 15, Jack became the Lunar Module Pilot for Apollo 17—the last Apollo mission to the Moon. On December 11, 1972, he landed in the Valley of Taurus-Littrow as the only scientist and the last of 12 men to step on the Moon. This last Apollo mission to the Moon for the United States broke several records set by previous flights and includes the following: longest manned lunar landing flight (12 days, 13 hours, 51 minutes); longest lunar surface extravehicular activities (3 EVA's totaling 22 hours, 4 minutes); largest lunar sample return (an estimated 115 kg, 249 lbs); and longest time in lunar orbit (147 hours, 48 minutes). Apollo 17 splashed down in the Pacific Ocean only 0.4 miles from the target point and 4.3 miles from the prime recovery ship, *USS Ticonderoga*).

In July 1973, he was appointed as one of the first Sherman Fairchild Distinguished Scholars at the California Institute of Technology (Caltech). His appointment was extended to run through July 1975. This appointment ran concurrently with his other duties in NASA. In February 1974, he assumed additional duties as chief of Scientist-Astronauts.

In 1975, after two years as NASA assistant administrator for Energy Programs, he entered politics and was elected Senator from New Mexico serving a 6-year term beginning in 1977. His major committee assignments were on the Senate's Commerce, Banking, Appropriations, Intelligence, and Ethics committees. For his last two years he was the chairman of the Commerce Subcommittee on Science, Technology, and Space and of the Appropriation Subcommittee on Labor, Health, and Human Services, and Education.

Jack consults, speaks, and writes on policy issues of the future, the science of the Moon and Planets, and the American Southwest. His scientific research concentrates primarily on the synthesis of data related to the origin and evolution of the Moon and the terrestrial planets and on the economic geology of the lunar regolith and its resources. He currently is chairman of the NASA Advisory Council, the principal external advisory group assisting the administrator of that agency.

His Fulbright award is only the first of a long list of awards that Jack has received. His career at Harvard lists a different scholarship or fellowship for each year he attended (1958–1964); these were followed by Johnson Space Center Superior Achievement Award (1970); NASA Distinguished Service Medal (1973); Fairchild Fellow, Caltech (1973–1974); Distinguished Graduate, Caltech (1973); Honorary Fellow, Geological Society of America (1973); Arthur S. Fleming Award (1973); Honorary Doctorate of Engineering, Colorado School of Mines (1973); Republic of Senegal's National Order of the Lion (1973); Honorary Life Member, New Mexico Geological Society (1973); Honorary Member, Norwegian Geographical Society (1973); Honorary Fellow, American Institute of Mining, Metallurgical, and Petroleum Engineers (1973); Honorary Fellow, The Geological Society, London (1974); Honorary Doctorate, Rensselaer Polytechnic Institute (1975); Honorary Doctorate, Franklin and Marshall College (1977); International Space Hall of Fame (1977); Fellow, American Institute of Aeronautics and Astronautics (1977); Engineer of the Year Award, National Society of Professional Engineers, Legislative Recognition Award (1981); National Security Award, highest Civil Defense Award (1981); Honorary Doctorate of Astronautical Science, Salem College (1982); NASA Distinguished Public Service Medal (1982); Lovelace Award, Society of NASA Flight Surgeons (1989); G. K. Gilbert Award, Planetary Geology Division, Geological Society of America (1989); Award for Excellence, Presbyterian Healthcare Foundation (1990).

He is a member of many organizations: Geological Society of America, American Geophysical Union, American Association for the Advancement of Science, American Institute of Aeronautics and Astronautics, Sigma Xi, AAPG, American Institute of Mining, Metallurgical and Petroleum Engineers, New Mexico Geological Society, and the American Astronomical Society. Yet with all these obligations he enjoys skiing, fishing, carpentry, hiking, handball, squash, running, and being married to Teresa Fitzgibbon.

W. R. Muehlberger

Response

Thank you deeply, Bill, for serving as my Honorary Member biographer. Bill Muehlberger has a resume and a life that should be the envy of all. Although well-aware of "Mully's" reputation from his exploits as a United States Marine and a student at Caltech, having been mutually encouraged in our geological and water balloon activism by Dick Jahns, I did not really get to know him until he was recruited to run the Apollo Field Geology Experiment for Missions 16 and 17. Mully had the boundless ability to keep a bunch of training prima donnas, including the crew, going in the same direction. Thanks again, Bill.

The telephone call from Pat Gratton and the letter from Pete Rose informing me of the extraordinary honor to become an AAPG Honorary Member were received with great appreciation. I was working at our family cabin in northern Minnesota, my mining geologist father's home state, and was in the final editing throes of my recently published book, *Return to the Moon*.

The subtitle of that book, *Exploration, Enterprise, and Energy in the Human Settlement of Space*, caps an intellectual journey that began at the AAPG Annual Meeting in Calgary in 1969. There, I took the liberty of warning geologists in attendance of the adverse security consequences of our then growing dependence on imports of foreign oil.

On October 3, 1973, less than a year after returning from the geological exploration of the valley of Taurus-Littrow, I was in a car with Caswell and Lee Silver and Vince Kelley when the first OPEC oil embargo was announced. Headed for the annual meeting of the New Mexico Geological Society, we agreed that the country needed to know the magnitude of its national potential resource base for petroleum.

A group to study this issue convened at Caltech on December 7, 1973, and included Mike Halbouty, Mason Hill, Daniel Busch, Grover Murray, James Boyd, Robert Berg, Barkley Kamb, and the Silvers, names of remarkable men familiar to most of you. The group recommended to President Richard Nixon that a Petroleum Resource Assessment Commission be established to oversee a joint government and industry assessment of offshore petroleum resources. Industry did not meet this recommendation with enthusiasm, *World Oil* editorializing that it opposed "establishment of yet another tax-funded government commission which could not help but compete with the private sector of the petroleum industry." Somehow, this national assessment by government and industry still seems like a good idea to me.

George Low, deputy administrator of NASA and one of the top engineering managers of Apollo, then asked me, in 1974, to come to NASA headquarters and organize an office that could provide a NASA response to the "energy crisis." This became the Office of Energy Programs that attempted to convince other government agencies that technologies derived from the Apollo Program and NASA's aeronautical research could help them with their energy related missions. We failed, however, to make much of a dent in the bureaucratic shields other agencies erect as a matter of course in Washington. Our naiveté knew no bounds.

Continuing my naive approach to energy policy, I ran for the U.S. Senate, for that and many other reasons. After being elected, thanks to the much-appreciated help of many AAPG members, I tried to contribute geological, environmental, and marketplace reality to the debates on legislation related to the illogical proposals coming from the Carter Administration between 1976 and 1980. As you are aware, those proposals attempted to meet the growing energy supply crisis through regulation and taxation rather than through production. Sound familiar?

Since leaving the Senate, I have concentrated on the development of a potential long-term source of electrical power from resources on the Moon. Despite this and other future energy alternatives, it will take all the fossil fuels, advanced fission power, and other new sources of energy and conservation to meet the rapidly rising global demand for economic growth and improved living standards. It can be demonstrated that by 2050 global demand will reach eight to ten times the current per capita consumption of about 15 BBOE.

Lunar helium-3 fusion electrical power represents an environmentally benign means of helping to meet an eight-fold or higher increase in global energy demand by 2050. Embedded continuously in the lunar dust over almost four billion years of time, as part of the solar wind, concentrations of helium-3 have reached levels that can legitimately be considered to be of economic interest, particularly in titanium-rich basaltic areas and potentially at the lunar poles. Two square kilometers of large portions of the basaltic lunar surface, to a depth of three meters, contain about 100 kg (220 pounds) of helium-3, that is, more than enough to power a 1000-megawatt (one gigawatt) fusion power plant for a year. There is evidence of a three to four times higher grade in the lunar polar regions. In 2005, helium-3's energy equivalent value relative to $2.50 per million BTU industrial coal equaled about $1.4 billion a metric tonne. In this context, the economic geology of lunar helium-3 should be of significant interest to the formulation of space, energy, and international policies.

Ladies and gentlemen, the entrepreneurial private sector has an obligation to follow its own path to get to the Moon in order to be additive to the overall goals of settling the solar system and improving lives for those who remain on Earth. Traversing that path, with an ideally funded business plan, would require about $15 billon and 15 years. The initial financial threshold, however, for a private sector initiative to return to the Moon is low: about $15 million. This first investment would initiate the first fusion-based bridging business, that is, production of medical isotopes for point-of-use support of diagnostic procedures using positron-emission tomography (PET).

Whenever and however a return to the Moon occurs, one thing is certain: it will be historically comparable to the movement of our species out of Africa about 150,000 years ago. Further, if led by America, representing the democracies of the Earth, a return to the Moon to stay will be politically comparable to the first permanent settlement of North America by European immigrants.

Harrison H. Schmitt

RICHARD L. FINDLEY
Outstanding Explorer Award

Citation—To Richard L. Findley, an intrepid oil finder, accomplished stratigrapher, and entrepreneur, for his efforts and imagination in discovering the "sleeping" giant Elm Coulee oil field in the Bakken Formation, Williston Basin, Richland County, Montana.

The Outstanding Explorer Award is given in recognition of distinguished and outstanding achievement in exploration for petroleum or mineral resources. Being successful as an explorer requires faith, persistence, vision, and imagination. Richard L. "Dick" Findley is being given this award for his accomplishments in discovering the "sleeping" giant Elm Coulee Bakken oil field in Richland County, Montana. Currently the field is approximately 40 miles long and 10 miles wide and is being developed by multi-operators. Elm Coulee has approximately 175 wells producing and 100 wells being permitted or drilled. The field is anticipated to become a giant once it is fully defined and developed. It has also set off a play that has expanded to almost all corners of the Williston Basin.

The Devonian–Mississippian Bakken is recognized as a world-class source bed and is divided into three members: lower black carbonaceous shale, a heterolithic middle member (siltstone, sandstone, limestone, dolomite), and an upper black carbonaceous shale. Dick's accomplishments include recognizing the middle member of the Bakken being the potential pay, recognizing the potential size of the accumulation, selling the play to an industry partner, and recognizing the potential applicability of the horizontal technology targeting the middle member despite two unsuccessful attempts by previous operators. Horizontal drilling activity of the middle member began in late 2000 in Richland County, Montana. Dick's involvement in the play goes back to the middle 1990s. The Bakken is a technology driven play with long-reach horizontal drilling and fracture stimulation playing key roles.

Dick first became aware of the Bakken potential in the area while exploring for the deeper Nisku on structure. He had participated with Cenex in a reentry of the Albin 1-33 well (Sec. 33, T24N, R57E, Richland County Montana) to test a possible bypassed Nisku zone. The reentry found uneconomic oil in the Nisku, and the well was completed in the upper and middle Bakken for 66 BOPD (viewed by most operators as the bail-out zone). The well had a rapid decline. He persisted in the area and he and his partner, Bob Robinson, drilled the Albin 2-33 well, which again found uneconomic oil in the Nisku. Dick observed and noted that while drilling the well and upon encountering the upper Bakken shale, total gas went from 6 units to 110 units, which was typical of this source-bed interval. When they encountered the middle Bakken, they encountered a drilling break (2 minutes per foot vs. 7 minutes per foot), and the total gas readings increased to 400 units. He thought at the time that the zone must have porosity and that most of the oil must be contained in the middle member. Following the Nisku completion attempt, he decided to perforate and fracture stimulate only the middle member of the Bakken. The upper shale was determined to have a lower fracture gradient than the middle member, so wells that perforated both the upper and middle members and later were fracture stimulated probably saw results from the upper shale only (most of the fracture treatment stayed in the upper shale); thus, the poor results from the first Albin completion. The Albin 2-33 following a fracture stimulation treatment flowed 157 BOPD and three months later was still flowing 80 BOPD. He and his partner then decided to see how much of an accumulation could be present. Dick proceeded to map out an area of porosity development 4–5 miles wide and 30 miles long! He convinced his partner that they had found a giant stratigraphic accumulation, and they proceeded to lease accordingly. They needed a partner so Dick contacted Cameron Smith, a financial expert who he had previous dealings with who then introduced them to Lyco in Dallas who bought the deal. Lyco has successfully developed the area along with other operators. Dick named his prospect Sleeping Giant and the field now is known as Elm Coulee.

Dick Findley is a geologist engaged in exploration for oil and gas. His professional work experience totals 30 years and began in February 1975 with Tenneco Oil Company, Denver, Colorado. He explored for oil and gas in various basins in Wyoming (San Juan and Williston basins) and the Sweetgrass arch. During work in the Williston Basin, he was a geologist on a team of scientists that discovered the Billings Nose complex of oil fields. He was then employed by Patrick Petroleum in Billings, Montana, in January 1978 and worked the Williston Basin. He was part of an exploration team that was responsible for Patrick Petroleum emerging as the tenth largest oil producer in Montana and eleventh largest oil producer in North Dakota. He left Patrick to form Prospector Oil, Inc. in September 1983 to build an independent company.

Prospector Oil has grown through a combination of consulting and independent exploration. Prospector has consulted from the Montana thrust belt through northern Montana and the Williston Basin for various industry operators. Since January 1993, Prospector has engaged in independent exploration. During this period, Dick discovered the major oil field mentioned above. Prospector's interest in this field has positioned it to be an independent oil company. Prospector currently explores, through a subsidiary JDX Energy, from the Sweetgrass arch through north central Montana and

into the Williston Basin. Prospector is currently participating in a shallow gas-drilling program on the east flank of Sweetgrass arch and has discovered a deeper, new gas sand in a field. This shallow-gas program is continuing to expand and has defined a very high potential gas play in this same area. Prospector is positioned to add significant oil and gas reserves.

Dick became interested in geology because of his father's influence and later through working as a field assistant to a Ph.D. candidate in west Texas. His father had studied geology at Texas A&M University but did not complete the program because of World War II. Dick later worked as a field assistant for Pete Boone who was completing a Ph.D. at Texas A&M. With this influence, he attended Texas A&M University, where he obtained a Bachelor of Science degree in 1973 and a Master of Science degree in 1975. During his undergraduate education, he worked as Robert Berg's assistant on his independent research and consulting projects for both major and independent oil companies. During 1973, he worked as a summer geologist for Union Oil Company in Lafayette, Louisiana, on a pilot project for using computers in oil and gas exploration. This early use of computers in exploration was important throughout his career. His master's thesis was related to both surface field study and subsurface research on the Stevens Sandstone in the San Joaquin Basin, California. He was awarded a Tenneco Fellowship Grant from 1973 to 1975 and received a best paper award co-authored with Robert Berg (third place, Gulf Coast Association of Geological Societies, 1973). He also received the Michael T. Halbouty Fellowship in 1974. Dick credits his understanding of stratigraphic concepts to Robert R. Berg. Upon earning his degrees, Dick had several job opportunities. His brother in law, Mickey Payne, who is also a geologist, asked, "Why not go to the Rockies?" so Dick accepted a position with Tenneco in Denver, Colorado. Thus began a very successful career in the Rocky Mountains.

Dick has been a member of the AAPG since 1974. He is also a member of the Montana Geological Society, where he served as secretary, treasurer, first and second vice president, and president (2000–2001). He is also a member of the Rocky Mountain Association of Geologists and is a licensed Wyoming Professional Geologist. He has been married to Lyn since 1976, and they have two children. He currently resides in Billings, Montana.

Dick offers one piece of advice to explorers: "Think big." He did and the result with faith, persistence, vision, and imagination is a giant accumulation.

Steve Sonnenberg

Response

I am deeply honored to receive the AAPG Outstanding Explorer Award in Houston in 2006, my home state. I accept the award with pride and feel great responsibility to continue to pursue my career in a manner befitting the honor.

I often think about the influence so many people have had on my life. It is scary to think how things would be different if one of them had not cared to make a comment, suggestion, or decision that turned out to be life influencing. I realize now that being molded by loving parents, who instilled in me traits I could not shake even if I wanted to, are the most important influences.

My first introduction to geology came during my senior year in high school when my father told me about geology. My career in geology was to begin shortly after that encounter. A dear friend, Pete Boone, a Ph.D candidate in geology at Texas A&M, asked me if I would be his field assistant for the summer following my graduation from high school in 1969. I agreed and we measured many sections and talked about his results and the significance of what he was doing. What I received most from that trip was a burning desire to be a geologist. As a result I enrolled at Texas A&M that fall in geology and had a direction from which I never wavered.

My father died at the early age of 50 while I was starting my second year in college. I felt lost at the time and wondered how I was going to get through college. I found myself sitting across the desk from Robert Berg, the head of the Department of Geology at A&M. I listened as he told me he needed a research assistant and asked if I would do that for him. I of course agreed, not realizing at the time he was doing this for me, and what an incredible career molding opportunity that was. Between that and a huge sacrifice my mother made, I was able to continue with my education.

Bob Berg was building a complete core library at A&M with examples from every conceivable environment of deposition. I slabbed, mounted, and made the initial description of the cores. He would come down and review the core with me and continued to educate me. Can you imagine this! I remember one instance when we were examining a shelf sand I had described as incomplete, small-scale Bouma turbidite sequences. He nudged me with his arm, got a grin on his face, and asked rhetorically "How do you think sand gets across the shelf?" What a priceless moment, one of many.

Following graduation there was only one apparently unending direction in the oil business and that was up. I was breathing and could spell geology so I got a job with Tenneco Oil and my choice of location. Thanks Mickey Payne for your life-changing suggestion of trying something different and steering a Texas boy to the Rockies. I found myself in Denver sitting across the desk of my supervisor listening to him tell me I had a choice to make. I could go up the management ladder or the technical ladder. I choose early on to go up the technical ladder. I was going to become an independent. Armed with my education I was ready for Tenneco, and during my three-year tenure I started the long education process, which continues today, on how to explore for oil. I was assigned to the Williston Basin group, which had outstanding explorationists that truly worked as a team and was the perfect place for me to continue my education. We had exciting results with the discovery of the Billings Nose, which led to my next job and life-changing event. I answered an ad for an exploration geologist with Patrick Petroleum in Billings, Montana, requiring 10 years experience with an emphasis on Mississippian in the Williston Basin and computer experience in exploration. This was in 1978, before PCs were cool. I only had three years experience but got the job.

I found myself sitting across the desk of Langdon Williams, Patrick's Division Manger and independent geologist. I listened over the years as he taught me to be an independent explorationist. I was part of teams comprised of many outstanding explorationists that drilled hundreds of wells and had many discoveries in the Williston. As a result of a participation pool and increasing oil prices, I enjoyed the ride until it all ended. I went out on my own in 1983 forming Prospector Oil, thinking the timing was perfect and the downturn would be short. Many years later I realized that I had just gone through the longest period of survival the industry has seen, one year at a time. I was able to survive by consulting for people like Pat Patrick and Red Robinson who believed in me.

In 1993, I made the decision to go for it. I teamed up with the late Bob Robinson of Kelly Oil and Gas from Traverse City, Michigan, and we formed a partnership and lasting friendship. We found "Sleeping Giant" in Richland County, Montana, three years later in 1996. I have to credit Bob's profound question to me after completion of the discovery well, Albin-FLB 2-33, "Do we have any place to develop this?" as the impetus to map Sleeping Giant. I later turned my working interest to a great group of investors in Northeast MT LLP, whom I still try to convince this is not a typical oil field. It has been quite a ride. Because of this, I am able to continue to pursue oil exploration for fun. I am now a partner in JDX Energy with my good friends Jim and Tony Koessler, and we are poised to do grand things.

One last influence is this reward itself as I am sure it will affect my direction from here. I will forever be indebted to my citationist and biographer, Steve Sonnenberg, for his nomination; Pete Rose and the Executive Committee for bestowing this honor on me; and all the named and unnamed friends and colleagues that have helped me along this life. Finally, I want to acknowledge my family for their unwavering support. I know it was scary, but what an exciting roller coaster ride and it only took 30 years to get here.

Richard L. "Dick" Findley

MARTIN DOUGLAS HEWITT

Distinguished Service Award

Citation—To Martin D. Hewitt, geologist, leader, and friend to many, who honorably worked for the goals of our Association and his region in order to benefit our science and industry.

Martin Douglas Hewitt was born July 6, 1959, in Hamilton, Ontario, Canada, and grew up in Canada's "steel town." Marty developed a strong interest in urban and physical geography in his high school years and decided to become a geologist when his cousin, Brian Pratt, now a professor of geology at the University of Saskatchewan, had excited Marty about the science. This, combined with his love of the outdoors from his many trips with his parents, Joan and Douglas Hewitt, to the New England states as a child sealed his fate.

Marty concluded his undergraduate schooling at McMaster University in Hamilton, Ontario, and completed an undergraduate thesis with AAPG Distinguished Educator Gerry Middleton. During his time as an undergraduate, Marty worked for McMaster's Department of Geology on the tidal flats of the Bay of Fundy, exploring for uranium with Urangesellschaft near Baker Lake, Northwest Territories, and for Petro-Canada in Calgary, Alberta, in the summer of 1981. After that summer with Petro-Canada, his mind was made up and Marty knew that the oil and gas industry was where he would pursue his career.

After graduating in 1982, Marty accepted a full-time job with Petro-Canada and worked as a geologist in their Calgary office exploring and developing assets in northeastern British Columbia and northwestern Alberta. In 1987, Marty was assigned to Petro-Canada's Frontier Development Group to work on the Petro-Canada operated Terra Nova development project, offshore Newfoundland. For the next five years, Marty was the geoscience lead for the Terra Nova project and was involved in the geology, reservoir modeling, and development of the field.

During that same period, Marty went back to school in the evening and obtained an M.B.A. degree from the University of Calgary. In 1992, Marty was assigned a business development role in Petro-Canada's Frontier and International Strategic Planning group. In 1994, Marty returned to Petro-Canada's Frontier Exploration Group assessing new opportunities in offshore Newfoundland and Nova Scotia as well as in selected international basins, most notably in Norway. In 1997, Marty moved back into the Frontier Development Group and was the geoscience lead for Petro-Canada's non-operated East Coast and Norwegian assets.

In 2000, Marty moved to PanCanadian (now EnCana) to work for Gerry Macey's highly successful Gulf of Mexico exploration team, initially as a geologist, then as a team lead working on exploration and development in the deep-water Gulf of Mexico during which time PanCanadian participated in several of ChevronTexaco's discoveries including Tahiti in 2002. In 2003, Marty moved from the Gulf of Mexico to manage EnCana's Alaska assets until 2004 when he moved to his current position as the Long Term Development Group Lead for the EnCana operated Weyburn miscible flood in the Williston Basin, southeastern Saskatchewan.

Marty's involvement with AAPG began early in his career. He was elected as a Canadian Society of Petroleum Geologists (CSPG) Delegate in 1987

and has continued to play significant roles within the AAPG House of Delegates throughout his career. Marty has also served AAPG as a member of the Distinguished Lecture Committee, and was Canada's second region president from 2000 to 2001.

Marty's list of leadership responsibilities within the house has been substantial. Through the years, Marty has served on most of the standing committees, a number of ad-hoc committees, and in 2001–2002 on the House of Delegates Executive Committee as the secretary/editor and was awarded a House Recognition of Service Award for his contributions to the House.

Beginning in 2002, Marty served as the Canada Region representative to the AAPG Advisory Council, where he completed a three-year term in June 2005.

Over the last two years, Marty's contributions to the Association, in addition to the Advisory Council, have been in the role of general vice chairman of the AAPG 2005 Annual Convention in Calgary. Marty worked diligently on the organizing committee and was involved with the sponsorship committee, which raised more than $500,000 for the first time ever.

Along with his AAPG service, Marty has been a tireless worker for his affiliated society, the CSPG, where he has been a significant contributor throughout his career and is currently a member of the CSPG Executive Committee as the finance director.

Today, Marty lives in Calgary with his wife Anne and their two children, Joey and Katie, who are both now in college. Marty is a passionate golfer, and a member of Pinebrook Golf and Country Club just west of Calgary.

As a friend of Marty's, I am honored to prepare this brief summary of his life, so far. Marty is a very caring person, who is both respected in the geological community and known by all as an honest, intelligent, business-like geologist that works hard and gives back to his community in a way that very few others have done, and he is very deserving of the Distinguished Service Award.

John Richard Hogg

NEIL F. HURLEY

Distinguished Service Award

Citation—To Neil F. Hurley, in recognition of his leadership, commitment, and continuing service to the AAPG and the entire geologic community.

Neil Hurley was born in Minneapolis, Minnesota, and grew up in Denver, Colorado. He received B.S. degrees in geology and petroleum engineering from the University of Southern California in 1976, and his M.S. degree in geology from the University of Wisconsin-Madison in 1978. His thesis work was field-based and involved stratigraphic studies in the Permian reef complex of the Guadalupe Mountains, New Mexico. From 1978 through 1982 he worked as an exploration and research geologist for Conoco Inc. in Denver, Colorado; Lafayette, Louisiana; and Ponca City, Oklahoma.

In 1982, Neil entered the University of Michigan as an Exxon Teaching Fellow. He received his Ph.D. in 1986. His dissertation dealt with the geology, geophysics, and geochemistry of Devonian reefs in Western Australia. He took this opportunity to sample the local cuisine, including donkey and the odd kangaroo.

From 1986 to 1996, he worked in the field of reservoir characterization at Marathon Oil Company's Petroleum Technology Center in Littleton, Colorado. During this time, he earned recognition throughout the petroleum industry as an expert on carbonate reservoirs, fractured reservoirs, and horizontal wells. Project areas included Egypt, Tunisia, Syria, Argentina, the North Sea, west Texas, New Mexico, east Texas, Alaska, Michigan, Wyoming, and the Austin Chalk trend in Texas. During his industry tenure, Neil served on graduate committees at the Colorado School of Mines (CSM), Pennsylvania State University, University of Colorado–Boulder, Western Michigan University, Southern Methodist University, and State University of New York–Stony Brook.

In 1996, Neil was awarded the Charles Boettcher Distinguished Chair in Petroleum Geology, and is now a professor in the Department of Geology and Geological Engineering at CSM, where he has advised or co-advised more than 70 M.S. and Ph.D. students. His research interests lie in the areas of carbonate and sandstone reservoir characterization, petrophysics, logging, and fractured reservoirs. A major goal is to integrate and apply geologic, geophysical, and engineering approaches to reservoir management. At CSM he teaches beginning and advanced log analysis, advanced carbonate field seminars, reservoir characterization, and integrated exploration courses. In 2002, he took a sabbatical leave of absence with Schlumberger in Houston and Dhahran, Saudi Arabia.

Neil is an applied geoscientist who is also a skilled petroleum engineer. He specializes in multidisciplinary studies that involve carbonate and sandstone sedimentology and diagenesis, fractured reservoirs, formation evaluation, borehole-imaging logs, and horizontal drilling. He is currently a short-course instructor for Petroskills/OGCI, teaching the subjects of (1) carbonate petrophysics, and (2) stratigraphic and structural interpretation of dipmeters and borehole images at locations on several continents.

Neil continues his distinguished career of service to AAPG and other professional societies. He is past editor (1997–2001) and past vice president (2004–2005) of AAPG, and is currently a member of the House of Delegates

from the Rocky Mountain Section. He is a member of EMD, DEG, and DPA. Neil has served on numerous committees, and was an associate editor from 1993 to 1997. Neil also co-advises the active AAPG student chapter at CSM. He is a member of the Society of Petrophysicists and Well Log Analysts, Society of Petroleum Engineers (SPE), SEPM, Society of Independent Professional Earth Scientists, International Association of Sedimentologists, Society of Exploration Geophysicists, European Association of Geoscientists and Engineers, Geological Society of America (GSA), and Rocky Mountain Association of Geologists (RMAG), and has actively served on and chaired committees for the first three organizations in the list. In 1989, Neil and co-author Dennis Swagger received the A. I. Levorsen Award for Best Paper at the AAPG Eastern Section Meeting. In 1991–1992, Neil toured the United States as an AAPG Distinguished Lecturer, and in 2003–2004, he was an SPE-AAPG Distinguished Lecturer. In 2005, he was elected a fellow of GSA. Currently, Neil is a candidate for second vice president of RMAG.

Neil Hurley continues to be an energetic, popular professor and mentor. AAPG and CSM are fortunate to have him among us.

John B. Curtis

JOHN GEORGE KALDI

Distinguished Service Award

Citation—To John Kaldi, scientist, researcher, practitioner, and educator for his enthusiasm, leadership, and unceasing efforts in advancing the globalization of the petroleum geosciences.

John Kaldi is a truly global member of this Association. He played a key role in setting up the Asia/Pacific Region, where he has since been elected to the highest leadership positions. He has sat on the Advisory Council of the Association, has served on (and chaired) numerous committees, and has been extremely active in organizing various technical conferences. He has traveled extensively as a Distinguished Lecturer and Visiting Geoscientist, and has been recognized as a leading educator. John has conducted research in the fields of both carbonate sedimentology and diagenesis, and in understanding capillary pressure relationships in the assessment of reservoir pay and seal quality. John has received numerous awards for his efforts, both in the technical area as well as for his leadership in developing professional staff at the entry level and through their careers. He has always brought his special blend of energy, enthusiasm, humor, organizational skill, and sound counsel to a range of initiatives in a career that has taken him and his family to Europe, North America, Asia, and Australasia.

Born in Budapest, Hungary, his family emigrated to Great Britain when he was very young. Another move saw him going to New York, where he completed high school, and studied for his bachelor's and master's degrees (Queens College, City of New York), awarded in 1976. John moved back to the United Kingdom and received his Ph.D. at Cambridge University. His thesis, "Sedimentology of Zechstein Carbonates of North East England," was successfully defended in 1980.

John moved to Canada to work for the Geological Survey of Saskatchewan in Regina, and there he met Paula, a British nurse who specialized in radiotherapy, and was an expert in treating frostbite in winter and mosquito bites in summer. They married and moved to Calgary, where John had secured a position as senior research geologist for Shell in Alberta, Canada, and where the winters are not as severe and the mosquitoes do not carry you off. They stayed there for five years.

The family (plus one, the bouncing baby Ana) moved to Plano, Texas, in 1987, where John started to work for ARCO as a senior reservoir geologist. He worked on diverse projects in Alaska, south Texas, Louisiana, the North Sea, and Indonesia. He got increasingly involved in the Indonesian assets, and in 1991, ARCO decided to save on their trans-Pacific travel budget by transferring the growing Kaldi family (now with bouncing baby Ben) to Jakarta. At this point John started to develop his ideas on the quantification of reservoir and seal potential using capillary pressure analysis. His applied research also got him involved in organizing the 1993 Hedberg conference on seals, and was the start of a long career in teaching industry short courses. All this led to his becoming a Distinguished Visiting Lecturer for PESA (Petroleum Exploration Society of Australia) in 1995, his receiving the Special Commendation Award from the AAPG in 1997, and his later becoming a Distinguished Lecturer for the AAPG in 2002–2003. He was also chair of the IPA's (Indonesian Petroleum Association) technical program for much of this period.

The family was so taken with life in the tropics, the fabulous range of peoples and cultures, and the closeness

of raw nature, that John turned down a move to go back to the United States in conjunction with the BP takeover, preferring to stay in Indonesia with VICO (1997).

John took over as director of the National Centre for Petroleum Geology and Geophysics (NCPGG) at Adelaide University, South Australia in 1998. The department was already successful and well known, and John viewed the move as not so much leaving the industry, but simply moving further "upstream." He brought together a dynamic staff, nurtured alliances with industry, and strengthened the master's and Ph.D. programs, increasing their size and giving them more industry bias. This helped students in their job hunting, and helped industry to get better trained new recruits. In 2001, local oil company Santos sponsored the school of Petroleum Engineering at Adelaide University, which soon merged with the NCPGG to create the Australian School of Petroleum (ASP). Under John's leadership, it became the largest petroleum school in the southern hemisphere—a great example of multidisciplinary integration of people and their projects.

In the years with the NCPGG and ASP, John was extremely active with growing the AAPG in the Asia/Pacific region. He was a member of the "brain trust" that worked to get the region set up in 1998, was secretary of the region from 1999 to 2002, and was elected as president and AC representative for the region in 2002–2005. He was on the organizing committee for the very successful IPA/AAPG Bali 2000 International Conference, organized his second Hedberg conference on Seals in 2002, and is technical chair for the Perth 2006 Petroleum Exploration Society of Australia/AAPG International Conference. He also chairs the AAPG International Regions Committee. And somehow he has found time to serve as a Distinguished Lecturer, be one of our most prolific Visiting Geoscientists, conduct industry courses across Asia, and (maybe toughest duty of all) co-lead field trips on the geology of the wine country around Adelaide.

In mid 2005, after having built a tremendous professional team in the enlarged faculty, and taking on increasing responsibilities at the Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC), John made the decision to step down as head of the ASP, but to stay with the university as professor and chair of geosequestration. This has allowed him to refocus his understanding of the subsurface to coordinating the efforts of industry and academia in the region in this exciting new area, and one where many young geoscientists are keen to contribute.

Paula, very much at home in Adelaide, does a great deal of charity work with Oxfam. Ana is in her junior year at Adelaide University taking law and international studies, and Ben is in his senior year at high school. When not hill walking, or preparing for another of those local field trips by savoring the pleasures of the South Australian vineyards, John plays a mean game of squash.

John is unique in having received both the Special Commendation Award International, given "to members who have distinguished themselves in singular and beneficial long-term service to the profession," and now this Distinguished Service Award (with which the Special Commendation Award was merged in 2000). These dual awards illustrate not only his technical prowess, but also the leadership he has shown in growing the "people side" of the business, by training and developing new blood for the industry. His energy is boundless, his enthusiasm infectious, and his track record in truly "walking the talk" with regards to integrating the geosciences and engineering, and attracting and developing young minds into the profession, is an inspiration for us all.

Peter Lloyd

LARRY C. KNAUER
Distinguished Service Award

Citation—To Larry C. Knauer, for unparalleled dedication and service to AAPG and specifically the Pacific Section. His extraordinary ability to organize, solicit, and edit has created a commitment to success.

The Pacific Section proudly endorses the selection of Larry Knauer to receive a Distinguished Service Award from the AAPG. Larry is one of the best-known and most popular geologists in the Pacific Section. Many of us owe much of own enjoyment and pride of the Pacific Section to Larry.

Larry grew up in the San Gabriel and San Fernando Valleys of the Los Angeles Basin. He attended Whittier College and obtained his B.A. degree in geology in 1976. His part-time job during those years included working on the Department of Geology's Fairchild airphoto collection and its mineral collection, an avocation that may well have presaged his interest in community service. During this time, he pursued and won the heart of his future wife Nancy, whom he had met in a donut shop several years earlier.

Larry then attended the University of California–Los Angeles (UCLA), where as an M.S. candidate he became the curator of the Department of Geology's rock and mineral collection. His master's thesis was "The Geology

of the Emerson Lake Quadrangle" near Landers, California. This work was later published as part of the San Bernardino sheet of the California Division of Mines and Geology's series of geologic quadrangle maps.

Larry was recruited out of UCLA in 1982 by Bob Countryman to work for Gulf Oil in Bakersfield as a development geologist. In 1985, Chevron bought Gulf and Larry was transferred to Ventura. A downturn in the oil business just one year later saw Larry return to Bakersfield and become the curator of the California Well Sample Repository on the campus of California State University, Bakersfield. In three short years at the repository, Larry dramatically improved industry awareness of the facility and embarked on a networking career that not only made himself one of the most recognized figures in West Coast geology but also put public service and the AAPG Pacific Section on the map.

In 1989, Larry left the Well Sample Repository for an opportunity with Bechtel Petroleum Operations at the Elk Hills field Naval Petroleum Reserve. From 1989 to 1997, Larry was the principal geologist for the Shallow Oil Zone. Larry played a critical role in two projects, low-pressure gas injection and infill drilling, that not only reversed the production decline from this pool but also dramatically impacted the decline curve for the entire field. He was the technical team leader for the gas-injection project, and he and Joe Davidson, the pool's other geologist, were able to propose enough infill wells to increase the pool's production from 12,000 BOPD to more than 19,000 BOPD. In 1997, Larry left Elk Hills to join Texaco at the Kern River field. Today he remains Chevron's principal geologist in the field office at Kern River.

Although Larry's professional accomplishments are noteworthy, they pale in comparison to his accomplishments in AAPG leadership. He has been a member of the AAPG for more than 23 years. He has held every office in the San Joaquin Geological Society and has been both the vice president and president of the Pacific Section AAPG. He is an elected delegate from the San Joaquin to the AAPG House of Delegates. He has been publication chair for the Pacific Section for more than 10 years, overseeing and editing the publication of a number of professional treatises. He was the Pacific Section newsletter editor from 1997 to 2000 and increased the size, value, and readability of the newsletter during his tenure. He was the technical program chair of the Section's annual meeting in 1997 and numerous times has chaired fund raising and exhibits committees.

Currently, Larry is the fundraising chair for the upcoming AAPG meeting in Long Beach California in 2007. As a member of the Pacific Section Conventions Committee, he helps coordinate all future meetings of the Pacific Section. As a member of the Nomination Committee, he is usually the driving force in the recruitment of officer candidates. He has been the chair of the Board of Governors of the California Well Sample Repository since 2000 and is currently an active member of the AAPG Sample and Core Preservation Committee. He is a leader in the preservation of core and well samples in California.

His volunteerism extends beyond geology. Larry was a frequent volunteer at the Science Bowl and is often a judge at Science Fairs. At Elk Hills he initiated an adopt-a-highway program, and when he went to Kern River he started one there. His name recently appeared in the newspaper as having donated more than 12 gallons of blood.

As impressive as this list is, it still fails to completely capture Larry's impact to both the geologic and general community. Many of us owe our own volunteerism to his encouragement. To his wife Nancy and to his daughters Nicole and Ashley, he is the best husband and father. To those of us who call him friend he is simply the best.

Mark L. Wilson

JEFF W. LUND
Distinguished Service Award

Citation—Jeff W. Lund is a dedicated petroleum geologist with a profound sense of duty, leadership, and professional service that inspires fellow geoscientists.

Jeff has served as a leader of professional societies on local, regional, and national levels. Jeff's distinguished service to AAPG includes chairman and vice chairman of the Membership Committee, general chairman of the AAPG Convention 2002, chairman of the Convention Committee, House of Delegates member and foreman (1992–1993), Trustee Associates member since 2001, Advisory Council AAPG Gulf Coast Section, and member of the 100th Anniversary Committee. Jeff was also president of the AAPG affiliated Houston Geological Society (HGS) and the Gulf Coast Association of Geological Societies (GCAGS). He has co-authored several papers at AAPG conventions, including the paper "Using Portfolio Models to Optimize and Communicate Strategy" while he was also general chairman for the 2002 Convention.

Jeff believes in the importance of defining the mission of a group. Similar to NASA astronauts carefully designing their mission patches as a way to define their purpose, Jeff explained the theme of the AAPG 2002 Convention logo

during the opening session. By keeping the convention committee on mission, the convention theme "Our Heritage Key to Global Discovery" came alive. Notable events included a heritage luncheon with an address by Michel T. Halbouty.

Jeff forged a special friendship with Michel T. Halbouty. They explored the possibility of a Bush speech at the 2002 convention. A flurry of White House communications ensued. For a few months, it looked like President George Bush (41), a good friend of Halbouty's, would be our all-convention speaker. Even though that did not occur, the experience was memorable!

Jeff's leadership in the HGS is exceptional. He has received all HGS awards, including the Gerald A. Cooley Award, which is the HGS's highest award. Jeff's written record of service is nicely encapsulated in his ten monthly Presidents Columns. His theme, "Practicing geology, it's my profession, not just my job," endures.

Other themes included an article on "Topgun Exploration," a reminder that, in the words of Bill Fisher, "While you must be sure you are computer literate, don't become a workstation jockey." Jeff also made the bold prediction that Houston will become not just the world's largest local geological society, but also the "center of the world for geologists." Another topic Jeff addressed was climate change, an interest that he continues. In particular, Jeff challenges journalists and politicians to make statements based on good science, and geoscientists to be proactive, to communicate, and to educate the public.

Jeff's presidential year was notable in one more way: He served during the HGS Diamond Anniversary. Events included a technical symposium titled "Countdown to the 21st Century" and a formal dance and dinner at the Petroleum Club, where money was raised for the scholarship funds through a wine auction. The *HGS Bulletin* published a special issue that included articles and photos of historical interest to the Society.

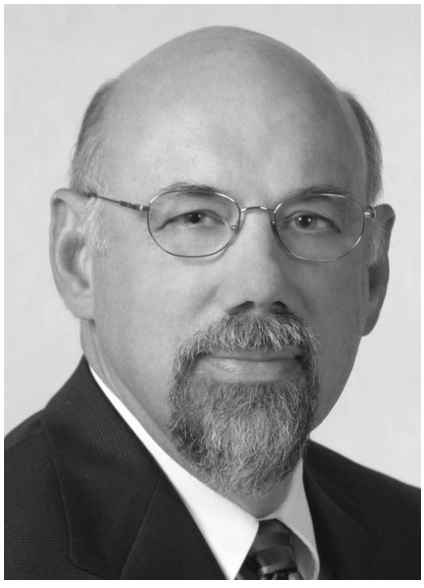
Jeff has the remarkable gift of inspiring others by example. Had it not been for Jeff, many volunteers may not have continued onward in service to HGS or AAPG. Working with Jeff afforded many volunteers a chance to see what a well-run professional society can be. This experience served to ignite a passion for service within these individuals. Jeff's positive influence on people was illustrated when, as Jeff received Honorary Membership to the HGS, he asked all of his former board members to stand and be recognized along with him. The room was full of past, current, and future society presidents and many who have gone on to distinguished service at HGS and AAPG. Bicyclists call this effect "drafting." Fortunately for us all, Jeff has taken a turn at the lead.

During his extraordinary service to professional societies, Jeff has maintained a work history at the highest corporate levels. There is no one else like him. His career started at Amoco in 1969, and in all of his jobs, Jeff rapidly rose to positions of increasing responsibility. He worked for Clark Oil between 1973 and 1978, was an exploration manager and regional manager for Burlington Resources and Southland Royalty 1978–1991, was a vice president for Ashland (Blazer Energy) 1991–1998, and a vice president for Kerr McGee 1998–2003 that included a posting in Aberdeen to oversee North Sea exploration. From 2003 to the present, Jeff was a senior exploration advisor for Ammonite Resources. Currently, he is vice president of exploration for Access Exploration Corp., Houston.

Jeff has a well-rounded education: a B.S. degree in geology from Case Western Reserve University, an M.S. degree in geophysics from the University of Houston, and an M.B.A. in finance from the University of Houston.

Jeff and his wife Marti live in Houston. Daughter Briana lives in Boston. Jeff is an amateur astronomer, jogger, and space enthusiast. Had Jeff not gone into exploration for oil and gas, he would probably have pursued becoming an astronaut like his good friend, Jim Reilly. For those of us involved in terrestrial pursuits, we are glad Jeff chose to stay with us on earth!

Charles A. Sternbach



G. RANDY KELLER, JR.

Grover E. Murray Memorial Distinguished Educator Award

Citation—To G. Randy Keller, Jr., in recognition of outstanding performance in the classroom, field, and department chairman's office informing, inspiring, counseling, and leading geoscience student professional and personal development.

G. Randy Keller, Jr. has been on the faculty at University of Texas–El Paso (UTEP) since 1976 and has served as chair for 17 of those years. He has taught thousands of students at all levels. Randy has directed 22 doctoral dissertations and 63 master's theses. Three of his graduate students have won university-wide awards as the best theses completed at UTEP in a given year. Proficient in the classroom and the field, he has provided his students with an impressive breadth of experience in the geologically spectacular terrain of Trans-Pecos Texas and New Mexico as well other parts of North America, Africa, and Europe. He has been creative in finding ways to support his students, and although he has attracted more than $25 million outside funding for research, he has been able support students and do significant work in areas of interest that were not heavily funded. Perhaps best known for his research into the crustal evolution of the southern Rocky Mountains and Rio Grande rift, Randy

has also conducted funded lithospheric research in other parts of North America, Europe, and Africa. He is a prolific publisher of papers and presenter of talks describing the results of his work.

Randy's university education was obtained at Texas Tech University, where he received a B.S. degree in mathematics and an M.S. degree and Ph.D. in geosciences, concentrating in geophysics. Following one year at the University of Utah and three years at the University of Kentucky, he accepted a position as assistant professor at the University of Texas–El Paso in 1976 and has been there since that time. During his tenure at UTEP, he has also served as director of the Kidd Seismological Observatory and founding director of the J.W. Miller Geophysical Lab. His accomplishments in teaching and research were rewarded in 1993 when he was named the L.A. Nelson Professor.

Randy has been a tireless organizer and worker in regional professional society meetings, working with geoscientists outside of academia to create opportunities for students to present papers based on their graduate research projects. He has involved students in his wide-ranging studies of lithospheric structure and evolution in North America, Africa, and Europe. He has obtained grants and contracts to develop curriculum materials in environmental science and remote sensing. His leadership in developing the NASA-supported Pan American Center for Earth and Environmental Studies at UTEP resulted in multiple-year funding that provided faculty and students with opportunities to apply sophisticated remote sensing techniques to their research.

The collection and mapping of gravity and magnetic data has been a career-long effort for Randy. He and his students have taken instruments to the field to make measurements and searched the files of numerous organizations to assemble data for local and regional maps. He has convinced an impressive list of people to provide him with their data, including many who normally wouldn't be that cooperative. His success at this is symbolic of his ability to amass useful information at little cost to the great benefit of students and ultimately of improved understanding of the Earth's crust. His appreciation of the value of large data sets and their integration has motivated his involvement in the geoinformatics initiative and the application of geographic information systems (GIS) to geoscience research.

Contributions to education come from many actions, including producing the scientific literature that communicates research findings. Randy has been especially active in this area, serving in editorial positions for a variety of journals including *Geophysics*, *Geophysical Journal International*, *Journal of Geophysical Research*, and the *Geological Society of America Bulletin*. He has recently launched the Geological Society of America's new online journal *Geosphere* as its founding editor. Randy has chaired and served on numerous panels and committees planning research programs and scientific meetings. He has been especially active in the South Central Section of the Geological Society of America, serving as chair, and in the Southwest Section of AAPG, serving as president. He has been a member of the Board of Directors of the Incorporated Research Institutions for Seismology (IRIS) since 1984.

Among his many awards are the A.I. Levorsen Memorial Award from AAPG and the Distinguished Educator Award from the AAPG Southwest Section. He has also received the George P. Woollard Award from the Geological Society of America, and UTEP has awarded him its Distinguished Achievement in Research.

This important award from AAPG is fitting recognition of Randy's many contributions to education and research.

Charles G. Groat

Response

I am extremely pleased and honored to receive the Grover E. Murray Distinguished Educator Award, and I greatly appreciate Chip Groat's citation. I first met Grover Murray when I was a graduate student at Texas Tech, and he was president of the university. I came to know him well years later thanks to our many encounters at various professional meetings, and I developed a warm spot for him and Sally. I am particularly gratified to see my name added to a list of distinguished awardees, and I am fortunate that several of them have also been valued colleagues and mentors. Above all, it is nice to think of this award as something that I can share with the many students whom I have guided to their graduate degrees and who are now active professionals in the petroleum industry. I believe that their accomplishments have played the major role in my receiving this award.

Students keep me on my toes and young at heart. Their enthusiasm is infectious, and the few who are not enthusiastic provide an interesting challenge. Traditionally, we have taught undergraduates primarily in a classroom setting. However, in recent years, many resources have been devoted to involving them in research activities, and the results have been fantastic. At the graduate level, some students are so bright and competent that all one has to do is provide them the resources to do a research project and cheer them on. Others may need substantial help, and it is particularly gratifying to see them blossom into effective professionals. In either case, they become colleagues through our interactions and often lifelong friends.

As a researcher, I am probably thought of as a geophysicist, but I have always been motivated by the search for answers to important geologic questions of all scales. I am happy to say that most of my students have come to share my zest for finding answers to geologic questions, and I presently have students working on projects that range from studies of basins in Ethiopia and the Four-Corners region, to the deep structure of the Alps, to water problems in the El Paso region. This kind of variety in my research and my students are indeed the spice of my professional life and help me to continue my education.

In my own career, I have many people to thank. I was inspired to pursue a scientific career by my math and science teachers in San Angelo, Texas. As a graduate student at Texas Tech, I was allowed to create and teach a new introductory course in geology. I was also involved in many activities beyond taking my classes and writing my thesis. Only later did I realize how much of a head start these experiences provided me in my academic career.

After a very productive year as a post-doc at the University of Utah, I was lucky to land my first faculty position at the University of Kentucky, where I learned to appreciate the geology of the Appalachians and the mid-continent region that I still study. I am now in my 30th year at the University of Texas–El Paso, where I helped develop our program and lead a renovation project that produced one of the finest geology buildings in the country. El Paso's location in the Rio Grande rift opened the door to international opportunities that began with a study of the East African rift that continues to today. We have subsequently been able to study many locales around the world, and I have been able to take many students on their first international trips. These international experiences have enlightened us all and have produced memories and friendships that will last a lifetime.

In recent years, we have seen an ever-increasing emphasis on integrated and collaborative studies in our science. This trend is primarily due to our recognition that the questions we are seeking to answer, in both the basic and applied science domains, require us to collaborate and use every tool available. We have been fortunate to be included in many large collaborative scientific experiments, and my students and I have learned a great deal from our colleagues and experiences during these endeavors.

My introduction to the geosciences was a happy accident, and I am eternally grateful for this accident that provided me with such an interesting and rewarding career. My students and colleagues around the world have played a major role in my life, but it is my wife and children who have always been supportive and patient with the long hours my position requires and my many travel commitments. They often have participated in my activities in one way or another and have made many friends around the world. My son has even gone on to pursue a career in the petroleum industry, and my daughter has specialized in the preparation of tax returns for petroleum companies.

I consider it a privilege to have the position that I occupy, and I greatly appreciate the support of the state of Texas, many funding agencies, and industry that has made it possible for me to conduct my research activities and support my students. I believe that teaching and research are inseparable parts of the education of young people who go on to jobs in the petroleum industry and related professions and that the entire educational enterprise is a partnership of the public, students, faculty, and employers. It has been a pleasure to be part of this enterprise, and I am very grateful for this recognition of the role I have played in it.

G. Randy Keller, Jr.

BRIAN E. LOCK

Grover E. Murray Memorial Distinguished Educator Award

Citation—To Brian E. Lock, for unselfish dedication and geological inspiration, a tireless educator for almost 40 years, who challenged legions of young minds by his own example to achieve their dreams.

Brian E. Lock was educated at Cambridge University in England, where he received his undergraduate degrees and Ph.D. in 1966 and 1969, respectively. Brian's role as an educator began in 1967 teaching part time at Cambridgeshire College of Arts and Technology while working on his Ph.D. Two years later he moved to South Africa and taught at Rhodes University until 1977. Mounting social and political instability in South Africa persuaded Brian to move to the United States and accept a teaching position with the University of Southwestern Louisiana (USL), now called University of Louisiana (UL) at Lafayette. Here Brian embarked on a career of teaching, publishing, and serving the geological community at local, state, and national levels with great enthusiasm, creativity, diplomacy, and wisdom that continues today.

During Brian's tenure at USL, he was associate professor 1977–1980, professor 1980–present, head of the department 1991–2004, and graduate coordinator 2004–present. Brian was also acting director of the University's Energy Institute from 2001 to 2002. His university experience included active membership of the Senate committees, the faculty Welfare Committee, and a special committee charged with recommending improvements in university governance. Brian has chaired the University Library Committee and the faculty Senate Ways and Means Committee. He was an elected member of the Graduate Council (1990–1993), elected chairman of the Graduate Council (1991–1992), and chaired the graduate faculty Peer Review Committee (1990–1991). Brian has taught numerous graduate and undergraduate courses, including stratigraphy, sedimentology, sedimentary petrology, carbonate petrology, carbonate sedimentology, advanced sedimentation, and subsurface geology. His work as an educator has benefited industry as he has taught numerous in-house short courses for both national and international companies such as Superior Oil Company; Unocal; Conoco; Mobile Gulf Coast and Nigeria groups; Pertamina, the national oil company of Indonesia; a small independent company in Myanmar; and Pemex in Mexico.

Brian's research includes more than 100 publications in the fields of stratigraphy and sedimentology (including pyroclastic sediments in the years leading up to 1977). His 1991 paper, "Sedimentology of a Modern Point Bar at Raven Camp on the Red River, Central Louisiana," co-authored with Cathy Bishop in the Gulf Coast

Association of Geological Societies (GCAGS) *Transactions*, v. 41, won the Best Published Paper by the Gulf Coast Section (GCS)-SEPM editors. Another *Transactions* paper, entitled "Modern Analytical Techniques for Fault Surface Seal Analysis: A Gulf Coast Case History," v. 45 (1995), co-authored with Mary Broussard, a student of his, was selected for the AAPG A.I. Levorsen Award for the "paper that best exemplifies creative ideas in oil and gas exploration." His paper with Ashley Walker Fife and Elizabeth Anderson on bacterial reactions leading to carbonitization of sulfate rocks in the Castile Formation of the Permian Basin won Best Paper Award at the 2004 convention. Brian has supervised 60 master's theses and guided numerous field trips, including three for the GCAGS conventions in 1980, 1984, and 1990, two for AAPG annual conventions (including one for 2006), and one for the Geological Society of America. He was a member of the GCS-SEPM Organizing Committee of the 4th Annual Research Conference and served as chairman of the Evaporites Research Group of the SEPM. He was program chairman for the 10th Annual Gulf Coast Exploration and Development Meeting and Exposition of the Society of Exploration Geophysicists. He has spent untold hours in various board positions of professional societies promoting further research and publications.

Brian is a member of no less than 13 local, regional, national, and international professional societies and has served as director, chairman, co-chairman, and/or president for at least four of these societies. Brian's most significant contribution to a professional society was serving as general chairman of the 1990 GCAGS Convention held in Lafayette, Louisiana. Preparations for this convention began more than two years prior to the convention, and Brian was responsible for coordinating 25 committees and 100 volunteers. The convention eventually attracted 2000 participants and according to the local authorities brought a $1 million impact to the city's economy.

In addition to the above awards Brian was one of the first groups of four recipients of the GCAGS Outstanding Educator Award, presented at the October 1991 AAPG Annual Convention in Houston. Brian was also honored to receive the GCAGS 2005 Distinguished Service Award, and was named the USL Foundation Distinguished Professor in 1987. He was unanimously approved by the Board of Directors of the Lafayette Geological Society (LGS) in March of 1997 to receive the 16th Honorary Life Membership in the history of the society and the first to receive the award since 1991.

Brian currently continues his legacy of teaching at the University and serves as thesis advisor to a number of M.S. students working on carbonates, evaporates, and clastics. His professional interests are focused primarily on modern and ancient evaporate sedimentation, ancient carbonates, and on related subsurface studies. His active projects involve Permian sabkhas in Utah, Cretaceous deep-water carbonates in west Texas, and bacterially modified carbonates in salt dome caprock and the Permian castiles (methane seeps) in west Texas. In addition, Brian works as a part-time consultant mapping salt dome structure and addressing salt mining issues for Morton International (Morton Salt) and Akzo Salt (now Cargill Salt) in the Weeks and Avery Island salt domes of south Louisiana. Brian continues to serve his community and professional societies through various leadership roles; e.g., Board of Officers (editor) for the 2006 GCAGS Convention, Lafayette Geological Society Scholarship Committee, and the SIPES Scholarship Committee.

Although Brian has worked as a consultant almost continuously throughout his career, including two full-time stints in industry with Norske Fina in 1969 and Geo-Consultants International in 1985–1986, teaching has always been the most important part of his career, primarily because he has worked with so many fine young people, whose career successes have given him the greatest possible satisfaction. In this regard, he feels fortunate that he was chosen to work for the University of Louisiana (then named the University of Southwestern Louisiana), with its strongly industry-related geology program. Brian's teaching philosophy is best summed up in this paraphrase, "Geology is at its greatest fascination when it is directed toward real world problems, and the students attracted to the UL program have always shared this attitude." Research, service, dedication, perseverance, mentor, and above all scientific education at the highest standards are what Brian will be remembered for, and this is why he has been chosen to receive AAPG's coveted Grover E. Murray Memorial Distinguished Educator Award.

James D. Gamble

Response

After I finished my Ph.D., I had the opportunity of working for Brian Harland with a group of other Cambridge consultants and geologists doing fieldwork in the Barents Shelf area during the initial evaluation phase of a new sedimentary basin. We had been hired and financed by Norske Fina, and I was fortunate to have the (increasingly rare) practical experience of actually looking at rocks in the field as part of petroleum geology operations, before leaving for South Africa to take up a teaching position at Rhodes University in the Easter Cape. In South Africa, the department was strongly biased toward the minerals industry, and I was again exposed to a practical side of geology that had been essentially lacking in my student training.

After seven and a half years in South Africa, I decided to apply for positions in North America, and I was fortunate that Paul Kessinger at the University of Southwestern Louisiana (now the University of Louisiana (UL) at Lafayette) agreed to hire me sight-unseen. Once again, I found myself in a department with a strong applied bias; Lafayette is home to a thriving petroleum geology community, with active geological, geophysical, and petrophysical societies, and a good proportion of our students have part-time jobs with local oil companies instead of fast food restaurants. I found that this suited me very well because I have always found geology most fascinating when it is related to practical problems. I was also fortunate that Bill Paine was still active on the faculty—he

had had a serious stroke only a little more than a year earlier and never returned to teaching. In that short time, I was greatly influenced by Bill. I sat in on his courses and saw the profound effect he had on his students, many of whom owe their subsequent successful careers in the oil and gas industry to Bill's teaching. If anyone deserves this award, it is really Bill Paine!

I had only been in Lafayette a few days when I had my first opportunity to go on a departmental field trip. In those days we had our own bus, and I remember driving out of the town, past early-morning mist rising around cypress trees in the swamp and hearing two students in the seat behind me (Joe Phillips was one) discussing drilling technology. This set a scene for me, and I quickly realized that I needed to learn more about petroleum applications if my classes were going to be considered relevant. In the intervening years, I have stressed topics like formation damage, porosity evolution, and reservoir heterogeneity in classes on sedimentology and sedimentary petrology, and find it particularly rewarding when alumni tell me that they have used what I taught them and found themselves, as new hires, with an advantage over graduates from bigger name schools.

One of the most impressive courses we have at UL, which I inherited from Bill Paine, is the subsurface project course. One of our most dedicated alumni is Bob Anderson, a successful independent geologist in Lafayette, who annually supervises the project in which each student is matched with a local geologist and given a south Louisiana field to report on. The student correlates well logs, compiles structural maps and cross-sections, then writes a full report on the history of the field and the nature of the production, and possibly suggests future development. This type of course would not be possible almost anywhere else, but our close proximity to the industry and the willingness of the community to support us gives a great advantage to the students who seize it. The project also typifies our approach to teaching petroleum geology. Before using all the advantages that modern software and hardware provide, we emphasize the basics. Students correlate paper well logs by hand with a pencil (and eraser), pick horizons across faults using 2-D seismic paper records (and a pair of scissors, sometimes), tie from one line to another with tedious paper folding, and so on. Then we feel that they are ready to move on to the high-tech facilities available, such as the $20 million immersive visualization facility currently being constructed on our campus. A graduate is much more employable because of being familiar with basic concepts than if he or she has had detailed training with a particular software package without really understanding the underlying principles. Most companies prefer to train new hires on their own software, in any case. Unfortunately, many university departments concentrate too much on impressing students with the high-tech aspects of modern geology.

In nearly 30 years in Lafayette, I have been privileged to work with a large number of students and local geologists and to get to know many of them as good friends. Among those who have been particularly important to me are Jim Gamble (who has been generous with his time in proposing me for this award), Mark Rutherford, Bryan Groves, Tim Rynott, and Robin Ferber, all of whom started as USL/UL students and have become colleagues in one endeavor or another. The opportunity to combine academic and industry ties has been a particular blessing, and the presence of organizations such as the Lafayette Geological Society (LGS) has meant much to me. In fact, I attended my first LGS meeting on the evening of my arrival in Lafayette in October of 1977, and have made many friends through the society and through the GCAGS of which LGS is a member. Working on GCAGS conventions has been particularly enjoyable, and I look forward to the one scheduled for September 2006, hosted once again in Lafayette. I have met some fine people through my professional career, and I suspect all of you already know what I have learned—there is no finer group of men and women than geologists.

Brian E. Lock

ROGER M. SLATT

Grover E. Murray Memorial Distinguished Educator Award

Citation—To Roger M. Slatt, a world-renowned educator who has exerted a wide span of influence on our profession, guiding university students, teaching professionals, and advising corporate executives.

Roger M. Slatt is currently Gungoll Family Chair Professor of Petroleum Geology and Geophysics at the University of Oklahoma. Until the start of 2006, he was director of the School of Geology and Geophysics and Eberly Family Chair Professor at the University of Oklahoma. He also formerly was head of the Department of Geology and Geological Engineering at the Colorado School of Mines (1992–2000) and director of the Rocky Mountain Region Petroleum Technology Transfer Council (1995–2000).

After receiving his Ph.D. in 1970 from the University of Alaska, he taught geology for 8 years at Memorial University of Newfoundland and Arizona State University. He then spent 14 years in the petroleum industry with Cities Service Research, ARCO Research, and ARCO International Oil and Gas Co. before joining Colorado School of Mines in 1992. He has published more than 90 papers and abstracts, and has made

numerous presentations on the subjects of petroleum geology, reservoir geology, seismic and sequence stratigraphy, shallow marine and turbidite depositional systems, geology of shale, glacial and Pleistocene–Quaternary geology, and geochemical exploration. During his academic years, he has graduated numerous M.S. and Ph.D. students, most of whom have gone on to successful careers in the oil and gas industry. He sits on various professional society committees, including past chair of the AAPG Research Committee, has organized technical conferences for AAPG, and teaches short courses for industry and AAPG on the "Introduction to the Petroleum Geology of Deep-Water (Turbidite) Depositional Systems" and on "Principles of Geologic Reservoir Characterization." He was Technical Program co-chairman for the first annual AAPG Convention (New Orleans) that introduced the use of PowerPoint presentations, which are now standard. Since 2002, he has taught a global, Web-based course through AAPG on "Introduction to Geologic Reservoir Characterization" to people from many different countries. He has taught his two courses in many places in the United States, as well as in many countries, including Colombia, Mexico, Indonesia, Malaysia, Australia, New Zealand, Scotland, Peru, India, Angola, and England.

While employed in the international oil and gas industry, he had the opportunity, as director of Reservoir Evaluation, to study numerous oil and gas fields and exploration prospects worldwide, and to make recommendations to senior management for international technical investment. Many of his publications have dealt with the subject of exploration for, and development of, deep-water submarine fan (turbidite; basin floor fan) oil and gas reservoirs. He is considered an expert on deep-water submarine-fan exploration and development, and has worked globally both in industry and as a consultant on many such reservoirs. At the present, he is co-authoring a book titled *Introduction to the Petroleum Geology of Deep-Water (Turbidite) Depositional Systems*, to be published in 2006 by AAPG. He is also completing a book titled *Introduction to Geologic Reservoir Characterization*, to be published through Elsevier in 2006.

In 1996, he received the AAPG Distinguished Service Award. In 1999, he was the Esso Australia Distinguished Lecturer in Petroleum Geology. In 2001–2002, he was an AAPG Distinguished Lecturer, giving a presentation titled "Outcrop/Behind Outcrop Characterization of Deepwater (Turbidite) Petroleum Reservoir Analogs: Why and How." In 2002–2003, he offered the same presentation as an SPE Distinguished Lecturer. In 2003, he was named an AAPG Honorary Member.

Marlan Downey

Response

It is indeed a great honor to be selected for this distinguished award. Because so much of my career has been involved with education in one form or another, I feel a special pride for this personal achievement. My educational activities fall into three broad categories: as a university professor, as a petroleum industry employee, and as an educational consultant to companies and organizations. Below, I touch on each of these categories.

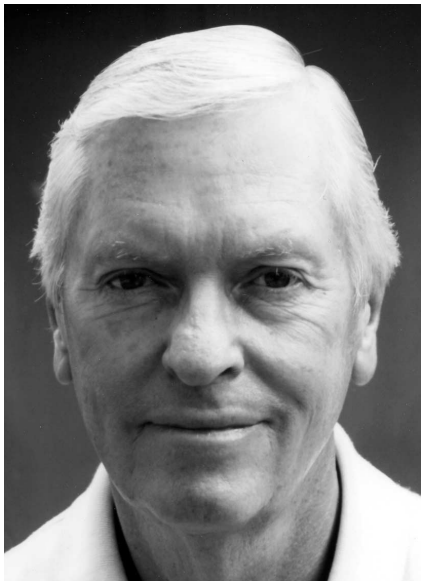
Since obtaining my Ph.D. in geology in 1970, I have taught in four universities. To summarize my academic experiences, students are great! No matter where I have taught, I have found enthusiastic, energetic, intelligent, and open-minded students willing to put in extra effort to increase their knowledge and skills. Sometimes I hear other academics joke that "universities would be ideal if there were no students" and "students get in the way of my research." Also, students too often get a bum rap for their social antics, or because their writing skills are not as good as their hand-to-eye coordination or their computing skills. I can truly say that my sole reason for being in a university is to work with students, as both a teacher and a researcher. To observe young, eager students begin graduate school, move through their paces, graduate, and then be highly recruited for a career position—mainly in the petroleum industry—is personally very rewarding.

In addition to my 22 years in academia, I spent 14 years in the petroleum industry, with ARCO Oil and Gas Co, Cities Service Research, and ARCO International Oil and Gas Co. At these companies, I was often asked to teach in-house courses to exploration and production geoscientists, as well as petroleum engineers. On occasion, I also coordinated internal geologic training. This too was a rewarding experience, especially when someone would later tell me they had used something I had taught them to the betterment of their particular project or goal. In this industry setting I first crossed paths with petroleum engineers, and to this day, I work closely with them, since we all have so much to learn and teach each other about oil and gas fields. In addition, my industry experience has been invaluable in the applied courses I now teach at the University of Oklahoma.

My third category of education takes me to many enjoyable places. I am a teaching consultant for two companies, and in addition, often receive requests to be an independent instructor for a company or a society. A reason I originally became a geologist is my desire to travel and see the world, and this facet of my career has certainly allowed me to do that. This past year, for example, I have been able to teach and give lectures in Peru, Malaysia, India, Egypt, Canada, Mexico, Angola, and in several domestic locations. I particularly enjoy international teaching as the students characteristically have boundless enthusiasm, are interested, and are interesting. One recent example in India comes to mind, where students did not want to take breaks for lunch because they did not want to waste learning and listening time—now that's enthusiasm!

To sum up my educational experiences, they have been great. I have had numerous opportunities to meet a variety of people, see wonderful places, pass on to others things that I have learned through the years, and guide many people toward their career goals. In short, I wouldn't change a thing!

Roger M. Slatt



JOHN E. WARME

Grover E. Murray Memorial Distinguished Educator Award

Citation—To John E. Warme, for stellar performance as a creative and inspiring teacher about the history of our planet and the dynamic diversity of life that has inhabited it.

To be a good teacher, you need to know your subject backward and forward. To be an exemplary teacher, you need to be 100% committed to the ideals of academic excellence. To be an inspiring teacher, you need to be a scholar of highest order. To be a stellar teacher, you need to be a tirelessly inquisitive student yourself.

John Warme is being honored today not just because he is a good and exemplary teacher, but because he is a truly inspiring and stellar teacher! It is my sincere privilege to offer some words of praise about my mentor and friend on this wonderful occasion of his receiving the prestigious Grover E. Murray Memorial Distinguished Educator Award from the AAPG.

John Warme was born in southern California and raised in the bright spotlight of Hollywood, where his father was employed in the film industry. That unique heritage has been reflected in John's scientific career, as he has always been a good example that it's not enough just to do great science, you need to be able to present your science to your students and colleagues in ways that its significance will stick with them.

After graduating from Hollywood High School, John left the beaches of southern California for the Mississippi River Valley of western Illinois, where he attended Augustana College, receiving his B.A. degree in geology in 1959. John treasured his liberal arts education at Augustana, where he was greatly influenced by the engaging teaching of professor Fritiof Fryxell, founder of the Geology Department there and one of the founding members of the National Association of Geoscience Teachers.

John returned to California to do graduate work at the University of California–Los Angeles (UCLA), where he studied under Clarence Hall and received his Ph.D. in 1966. John's dissertation was an innovative project to characterize the modern sedimentology and ecology of Mugu Lagoon, a coastal lagoon that had been protected from human interference by virtue of its location on a sensitive military base.

During his UCLA years, John taught geology classes at California Lutheran College and gained valuable practical experience doing summer fieldwork for Shell Oil Company. He accepted a postdoctoral research position at the University of Edinburgh for one year to study patterns of shell growth of marine gastropods, and he joined the faculty of Rice University in 1967. In the following year, I entered the Geology Department at Rice as a new graduate student and quickly hitched my own wagon to John Warme's star as his very first graduate student.

After 12 illustrious years at Rice, where he was appointed the Maurice Ewing Professor of Oceanography, John departed from the Gulf Coast and moved to the high country of Colorado, where he continues to thrive today as a member of the faculty at Colorado School of Mines.

As a teacher, John has a keen knack for cutting through the fog of mundane details to expose the most interesting and important aspects of any topic, often with a novel slant on the subject that grabs the attention of his students. He asserts that the most important thing in science is the idea—never lose sight of the seminal idea that underlies the scientific problem you are tackling.

Like most good Earth scientists, John is both a die-hard uniformitarianist and an ardent catastrophist! John's uniformitarian approach to understanding Earth history pervades all his work. His quantitative analyses of live-dead assemblages of modern mollusks in Mugu Lagoon produced important insights regarding the formation of mollusk assemblages in the fossil record. His interest in deep-sea sediments involved studies of modern box cores as well as ancient drill cores from the Deep Sea Drilling Project. His experience diving on coral reefs in the Caribbean and Micronesia equipped him to interpret the Jurassic coral reef tracts in the High Atlas Mountains of Morocco. He involved his graduate students in most of these adventures, and his dedication to the principle that you cannot hope to understand the past unless you first understand the present is something that was clearly passed on to all his students. In fact, he encouraged us graduate students to become scuba divers so that we could see the future fossil record on the sea floor for ourselves.

The historical geology class that John taught at Rice was unusual and innovative, in that it began with a thorough examination of the Earth today and then proceeded back in time through the Pleistocene and then into the earlier Cenozoic, Mesozoic, and Paleozoic, ending in the Precambrian. John's philosophy was that students should begin their time travels in the present, examining what they can see with their own eyes and learning what we geologists understand best, and only then move back into the dimmer and dimmer reaches of deep time to explore what we understand the least. Although this is a totally logical direction to follow for exploring Earth history, it is surprising that virtually all other historical geology classes (and historical geology textbooks) begin in the dim Precambrian and end in the present day. John took his students into the field right away to see the modern marine environments and organism communities around Galveston Island before introducing them to the rich fossil record in the well-exposed Cretaceous and Pennsylvanian strata of inland Texas.

John's catastrophist leanings are very clear in his current research on meteorite impacts in the geologic record and their effects on the paleoecology of the biota. He is especially involved in deciphering the telltale clues of the Late Devonian Alamo event in southern Nevada, where he has led many groups of students and professional geoscientists alike on thought-provoking field trips into the aftermath of an extraterrestrial impact.

John Warme has influenced and affected the lives of more than four decades of students in countless beneficial ways, both personal and professional. He is truly a creative and inspiring teacher who has spurred many students to embark on exciting explorations of the complex history of our planet and the dynamic diversity of life forms that have inhabited it through the ages. It is a fitting and well deserved honor indeed for John Warme be recognized with the Grover E. Murray Memorial Distinguished Educator Award.

Tony Ekdale

Response

What follows is sincere thanks, and a recount of much good luck, as my response to receiving a Grover E. Murray Memorial Distinguished Educator Award. I thank those who forwarded, and those who approved, my nomination. The news by phone from Pete Rose surprised and moved me. I knew Grover Murray, and treasured his friendly countenance, unequivocal interest, and moral support for me and for countless others.

Space precludes naming all of the individuals and organizations that I should mention here; please excuse the many omissions.

My deep thanks to Tony Ekdale for his spirited bio and citation. As I write, Hurricane Wilma is wrecking Yucatan; I am reminded to thank Tony for forgiving me, as his thesis advisor, for the night we spent in jail on a Yucatan island, together with his late wife Sue and two other good-spirited graduate students. It was all a mistake of course—our scuba work was all for science and we were innocent of all charges, but such events represent the glories of thesis research far and wide, and the jolly fun of later recounting such escapades.

Thanks to grade school teachers who fostered my interest in natural history; to early aptitude tests that indicated "science" as well as "fireman;" to F.M. "Doc" Fryxell at Augustana College whose carefully selected professorial staff fostered fledgling careers of so many of us, including Ekdale, who has received his own university-wide teaching awards at Utah. Doc created in students a deep respect for learning, science, and truth; he personified the perfect teacher role model.

The 1960's Geology Department at UCLA was a very special place, where professors and students mingled, taught, and learned in a heady atmosphere; sedimentary facies models dawned, paleontology shifted toward paleoecology, and seafloor and continental data combined to soon catalyze the plate-tectonic breakthrough. Professors Calvert, Cloud, Crowell, Ernst, Lane, Nelson, Oertel, Popenoe, Putnam, Rubey, Tappen, Winterer, and several others comprised the illustrious ensemble. Fellow graduate students such as Phil Kern, Jere Lipps, and Ron Surdam are still colleagues, and many others are easily recognized for their achievements. Special thanks go to Clarence Hall, my advisor, who left me to discover paleoecological principles on my own in the muck, clams, and worms of my dissertation study area, Mugu Lagoon.

I got a taste for teaching as a lab assistant at UCLA, concurrently as lecturer at the newly opened California Lutheran College, and as a lab demonstrator while on a Fulbright Grant at the University of Edinburgh, Scotland, sponsored by paleoecology pioneer Gordon Craig. The grant allowed unstructured time to study, read, travel, and investigate the purpose of gastropod ornament using collections at the British Museum of Natural History and what I could scavenge along Mediterranean coasts.

Transition from Scotland to Rice University began as a sight-unseen assistant professor, on trial. Words can't express the gratitude I still feel for the 12 years of support, guidance, friendship, and advancement extended to me from the Department of Geology and the Rice Administration. John Rogers, John Adams, and James Lee Wilson lent continuous support, and students such as Kevin Biddle, Jann Boyer, the Ekdales, Jeff May, Eric McHuron, John McCrevey, Rick Stanley, and Ross Yeo sustained me. Rice alumnus Maurice Ewing and the Doherty Foundation arranged for research funds, and eventually for an Endowed Chair in Oceanography in Ewing's name. The Chair allowed me to fund graduate students; my own research in Morocco, Italy, and California; as well as marine research in the modern seas. The Ewing Chair has been passed on to Peter Vail and now to John Anderson at Rice.

Before moving to the Colorado School of Mines (CSM), I knew L.W. Leroy, Bob Weimer, and John Haun by their publications; afterward I knew and learned from them, always in a framework of applied science. Weimer invited me to participate in numerous short courses and field excursions. Many of us continue to use the knowledge and teaching materials that he continuously evolves. Bob (geology) and Tom Davis (geophysics) developed a pioneering course, "Integrated Exploration and Development." I joined the team, and coaxed a representative from petroleum engineering to participate. The course was probably the first of its kind in the United States, where interdisciplinary student teams are prepared for careers in applied problem solving. CSM department heads, Joe Finney, Sam Adams, Roger Slatt, and Murray Hitzman, granted flexibility to teach courses ranging from cataclysmic geology to paleoecology, along with the annual applied stratigraphy inherited from Bob Weimer. I continue to marvel at the commitment of CSM undergraduate engineers, and am grateful for the string of outstanding graduate advisees, including the Moroccan team of Randy Burke, Paul Crevello, Beverly Halliwell, and Dieter Letsch, and the Alamo team of Brian Ackman, Alan Chamberlain, Hans Kuehner, Yarmanto, and currently Matt Morgan and Jesús Pinto.

Teaching posts allowed pursuit of a lifelong goal: learning from the best field geologists then applying that knowledge to my own field studies. Whether at sea with the likes of Arnold Bouma, in the Apennines with Emiliano Mutti, rubbing shoulders with Dolf Seilacher, or otherwise with numerous such luminaries, I eventually learned what to expect versus what was anomalous in

different stratigraphic settings. The anomalies were the most interesting! I stumbled across unrecognized mountain-sized olistoliths in Morocco, worked out mechanisms of a giant landslide and canyon-crossing runup in the Grand Canyon, and realized that a Devonian breccia in Nevada was derived from the impact of an object from space that I named the Alamo Breccia after a local settlement. This discovery of a lifetime remains an immense challenge to fully interpret; we now recognize different Alamo facies from this natural catastrophe in 25+ mountain ranges across Nevada and adjacent areas.

Developing field seminars for AAPG and interfacing with industry has been stimulating as well as rewarding. I thank the Association, and Barbara Davis and her staff, for unflagging approval and support over the years. Jim Helwig invited me to conduct AAPG's first field trip in North Africa, which evolved into the Morocco Field Seminar co-taught at times with Larry Meckel and Susan Landon. Former student Jeff May and I give "active margins" submarine canyon and deep-water sandstone courses in La Jolla. The first AAPG Geotour, rafting the Colorado River of the Grand Canyon, has been pleasurable as well as educational for all. I've introduced about 1000 geologists, friends, and families to the Canyon on river trips over the last 37 years, including on Geotours.

I believe that good teachers and good researchers must both be rewarded. However, I especially thank those influential mentors who were top teachers and researchers one-in-the-same, passionate about research, eager to pass along their results, and experienced enough to know what was worth passing along. I also recognize the rare administrators who understand what keeps teachers going. A simple phone call or handshake of congratulations for some small accomplishment such as a grant, publication, speaking invitation, or honor, spurs us on, often more than does salary. We work mightily for recognition; it can be given free. Finally, scores of dedicated educators should stand in line ahead of me for a Grover E. Murray Award. I propose to accept it also for all those that may never be so fortunate.

John Warme

JORGE "JORDI" FERRER
Special Award

Citation—To Jorge "Jordi" Ferrer, for his efforts to improve international communications in our industry, and for successfully organizing the 2003 Barcelona International AAPG meeting.

Jorge "Jordi" Ferrer is a true international member of the petroleum geoscience community. He was born in Maracaibo, Venezuela, in 1939, and received his early education in Venezuela and Spain. He earned a bachelor's degree in geology in 1962, and a doctorate in 1967, both from the University of Barcelona. Jorge started working in the petroleum industry in 1959 as a summer student for the Creole Corporation of Venezuela. He also worked as a student employee for Esso Iberia in the early 1960s in Barcelona, Spain. In July of 1962, Jorge joined Esso Iberia as a geologist-paleontologist, and his full-time professional career began.

In 1964, Jorge accepted a position as a biostratigrapher with Jersey Production Research (later Exxon Production Research–European Laboratories) in Bordeaux, France. He specialized in foraminifera, and undertook numerous studies and research projects in Europe and Africa. He was appointed manager of the European Laboratories in 1977. In this position, he had oversight responsibility for work in biostratigraphy, geochemistry, sedimentology, and structural geology. He was instrumental in establishing Exxon's European field and classroom training program. Always the consummate host, Jorge excelled at providing business visitors with a taste of the pleasures of the Bordeaux region, often after thoroughly trouncing his guests on the tennis court.

Jorge moved to the United States in 1988, where he became the supervisor of the Basin Analysis section at Exxon Production Research Company in Houston. In 1990, he joined Esso Norway in Stavanger and ran Esso's exploration efforts north of the 62° parallel. Jorge returned to Houston in 1992 to reorganize the approach to biostratigraphy within Exxon.

He was appointed president and general manager of Esso Exploration Bolivia, Limited in 1994. He resided in Laz Paz until the office was closed at the end of the exploration program in 1996, and then he returned to Houston. At the end of 1996, Jorge retired from Exxon after more than 34 years of service.

On retirement, Jorge and his lovely wife, Teresa, returned to Spain, where they split their time between Barcelona and the island of Minorca, enjoying the company of their children and grandchildren whenever possible.

Although formally retired, Jorge has remained engaged in the geosciences. He has participated as an external assessor in evaluation of the geology programs at the Universidad de Barcelona, the Universidad Autónoma de Barcelona, and Granada University. He also chaired the successful 2003 AAPG International meeting in Barcelona.

In addition to his science and managerial credentials, Jorge is a connoisseur of European wines, an acknowledged mushroom expert, and an enthusiastic fisherman.

Jorge is known as a gentleman to all who have had the pleasure of working with him. He is certainly deserving of this special award from AAPG.

Kevin Biddle

Response

I was at the top of a fig tree picking some figs under the beautiful Minorcan summer blue sky when my cell phone

rang. I thought it was probably my wife telling me how many figs she wanted. But no! It was Pete Rose, president of the AAPG announcing that I was to be awarded the 2006 AAPG Special Award for organizing the AAPG International Conference of 2003 in Barcelona, Spain. I was startled and almost fell from the tree! I mumbled something, not knowing exactly what I was saying, while remembering all the people who really deserved such an award.

Everything started with a meeting in early February 2002 with Henry Pettingill (Repsol and AAPG representative in Spain), Xavier Berastegui (Institut Cartogràfic de Catalunya), and Eduardo Remacha (Universitat Autónoma de Barcelona) asking me if I wanted to help them in organizing the 2003 AAPG International Conference in Barcelona. Since I was retired and felt extremely in debt to AAPG and my "old" oil company Esso/Exxon, my answer was an immediate "Yes!"

The next step was to meet with the AAPG officials Dan Smith, then president of AAPG, and Rick Fritz, executive director, to define the project and most importantly, the timing and effort necessary for the task. They said that AAPG had a team in charge of organizing their conferences, so we didn't have to worry very much about logistics. Indeed, they had a wonderful team led by Dana Patterson Free working with Theresa Curry and Steph Benton who did a very professional job and deserve the highest marks.

The next important item was to organize an excellent technical program, and there was Henry Pettingill with his many contacts and friends. He and Berend van Horn (also retired from Shell and now living in the province of Girona, about 120 km north of Barcelona) assumed the task of preparing a sound and appealing technical program. They were assisted by Bernard Duval and Maria Antonieta Lorente, fortunately also retired and willing to give a hand and living nearby (Bernard in Paris and Maria Antonieta in Barcelona). Both of them had a lot of experience with AAPG international conferences, and they demonstrated it during the time they were involved. Pinar Yilmaz, an old friend and colleague, was of invaluable help in organizing and implementing the management sessions and getting an impressive "brochette" of participants. Steve Veal and Andrés Pérez-Estaún put together a good short course program, and Montserrat Torné managed to recruit enough people to judge the papers presented. Esmeragda Caus (Universitat Autónoma de Barcelona) and Eduard Roca (Universitat de Barcelona) provided and coordinated the student volunteers that helped throughout the conference.

Organization of the field trips part was assumed by Eduardo Remacha, who solicited the participation of Spanish colleagues in proposing classical and less classical field trips for the conference. Carme Puig, with the Institut Cartogràfic de Catalunya, which hosted the conference, prepared an interesting program for the guests who attended. Xavier Berastegui and Toni Roca, working with the host ICC, were responsible for the local logistics and helped me avoid many headaches.

What about sponsorships? Luis Carmona from Repsol and Jean-Marie Masset from Total did an excellent job among the oil industry, as did, Jaume Miranda from the ICC who pursued local sources and helped as host institution with personnel and facilities.

I think that what I did for the AAPG and the conference was nothing compared with what I gained. Also, I had the great chance of working with an excellent company, with which I spent 34.5 years almost without realizing it thanks to the very interesting work I did with them and to the rewarding discussions I had with many of my co-workers. In Bordeaux, I had the chance to work with Hanspeter Luterbacher, Jan van Hinte, Emiliano Mutti, Jean Paul Colin, Bill Morgan, Roger Jan du Chêne, Thomas Freudenthal, Han van Gorsel, and Nicos Ioannides—all of them remarkable scientists and good friends. My assignments with the Research Lab in Houston were most challenging and made me realize that oil companies account for many new and advanced ideas in the field of geology. Pete Vail, Jan Hardenbol, John van Wagoner, Tom Davies, Yow Yow Chen, Lew Stover, Kevin Biddle, Tom Bultman, Carlos Dengo, Rick Vierbuchen, and many others made a big impact in my geological ideas and knowledge.
I cannot forget my mentors and very good friends, Jan van Sant and Mike Widmier, to whom I owe most of my managerial skills.

I feel deeply honored in receiving this Special Award, but I only accepted it as being at the top of the iceberg, which, as you know, is only a minor part of the whole in this case constituted by the team that organized the conference. As the people in AAPG know, I am "Mr. Nobody." Finally, I want to thank most sincerely my good friend Kevin Biddle for being my biographer.

Jordi Ferrer

ROY HELGE GABRIELSEN
Special Award

Citation—To Roy H. Gabrielsen, for his contributions as a structural geologist and for his leadership in academic and industrial petroleum research in Norway and Europe.

Roy Helge Gabrielsen was born in Oslo in 1948. As a boy, he was very active in sports, and when he became a student competed as a good medium-distance runner. He has continued to keep in great shape, and this has no doubt helped him to work hard throughout his career. He received a B.Sc. in geology from the University

of Oslo in 1973, and completed his master's degree (cand. real.) in 1976.

Among his many other interests as a student and later, he played rock 'n' roll and other types of music. Roy's first interest was structural geology, and this has remained his main subject of research up to the present. His master's thesis was on the petrology and structural geology of basement rocks in an area of central south Norway. This led to his first job, working for Johan Naterstad on a project on the Norwegian Caledonides (1976–1977) and then on a project on remote sensing and fracture tectonics (1977–1981) with professor Ivar B. Ramberg. The Norwegian oil industry was then booming and Roy joined Saga Petroleum in 1981. Roy started by applying his basic training in hard-rock structural geology to sedimentary basins and quickly trained himself in new skills in the fields of sedimentology, stratigraphy, and geophysics.

At Saga Petroleum he found himself in a highly innovative environment along with many young, gifted geologists and geophysicists. The atmosphere in this relatively small company was more informal and in many ways less structured than in the larger oil companies. It became clear early on that Roy's talents were not limited to geology, and after only two years at Saga Petroleum, he was elected by the employees as a member of the Executive Board of Saga. While working for Saga he was also active in research and published several papers on the structural geology of offshore Norway, and started his experimental work simulating faulting in sedimentary basins.

In 1987–1988, he was chief geologist at Norsk Hydro. This was followed by three years (1988–1991) as professor of petroleum geology at the University of Bergen and as a chief scientist at the Remote Sensing Centre (Nansen Centre in Bergen). He then went back to Norsk Hydro as a director of their Research Centre in Bergen, maintaining an adjunct professorship at the University of Bergen. From 1994 to 2003 Roy was again full-time professor at the University of Bergen, where he was very active in organizing research projects involving a large number of institutions and companies in both Norway and abroad. Most of these were interdisciplinary, and Roy played a key role in their organization and integration. He also participated on many international committees and organizations. He has supervised a long list of masters and Ph.D. students at the University of Bergen and has clearly managed to generate a lot of enthusiasm in his many research students. His publications from this period are mostly about the structural and regional geology of the North Sea, and he has made important contributions to the understanding of the structural history not only of the northern North Sea but also off mid-Norway and northern Norway.

Recently his research has also included aspects of rock mechanics and basin modeling. His approach has been based on his background in classical structural geology, but working with specialists in so many different fields that he was able to integrate a wide range of disciplines. His interest in rift basins has taken him to the Dead Sea, the Gulf of Corinth in Greece, and to southwest England.

Roy has served as an adviser for many institutes and programs including the Netherlands School of Sedimentary Geology, Institute Français du Pétrol, Geological Survey of Denmark and Greenland (GEUS), International Continental Scientific Programme (ICDP), and Norwegian Research Council.

He has also been a member of several evaluation committees in Germany, France, and Portugal and for European programs. His broad interests and qualifications are reflected in his membership of the "Review Committee for the Helmholtz Programme Geosystem: The Changing Earth."

Since 1990, Roy has served on several committees in the former Norwegian Science and Technology Research Councils (NAVF and NTNF) and the present Norwegian Research Council (NFR), including serving as a member of the Executive Board of NFR from 2000 to 2002. He has been a member of the editorial board of Terra Nova and GEO, an editor of books, and a reviewer for many journals.

Roy Gabrielsen has produced some 80 publications and has several more in print or preparation. There are also many articles from his hand in the field of popular science. This is particularly impressive when considering that he for much of the time has held demanding managerial positions and had many administrative duties.

Roy has been awarded the research prizes from Statoil (2000) and from the Norwegian Petroleum Society (2002) and the Falcon Award by the European Association of Geoscientists and Engineers for a paper (A.E. Lothe, H. Borge, and R. Gabrielsen, 2004).

Roy has a rather rare background that has combined teaching and academic research with experience as a manager and executive at relatively high levels in the oil industry. This has made him an attractive candidate for committees and as an adviser. Much, however, is due to his personal skills in relating to people. His work capacity is enormous, and his ability to work long hours for weeks on end with very little sleep is well known. Roy has always had wide interests outside his own subject, and he has been engaged in what goes on in politics and in society in general. He participates in public debates by writing articles in newspapers and popular magazines.

In 2003, he was appointed executive director for the Division of Science, Norwegian Research Council. This means that he is in charge of basic science research funding and has responsibilities far beyond the geosciences. He nevertheless refuses to devote all his time to administration and is now also an adjunct professor of petroleum geology at the University of Aarhus, Denmark, where he continues his teaching and research.

Knut Bjørlykke

Response

It was with astonishment and enthusiasm that I received the message from the president of AAPG, Peter R. Rose, that I have been awarded the AAPG Special Award for 2006. Few people expect to be honored in this way, and it is something one hardly can be prepared for. Hence, it took me a few minutes to grasp what had happened. I had to take a walk in the corridor outside my office, but did not get far before I was stopped by a couple of colleagues who asked what happy event I had experienced. The joy obviously was shining through. In the aftermath, and after becoming aware of

those who have previously received the Special Award, my joy, astonishment, and pride have grown even higher. Indeed, I would like to thank the AAPG Awards Committee for selecting me for such an honor. I would also like to extend my sincere thanks to Knut Bjørlykke, who has taken on the task of writing my biographical summary.

I understand I have received the Special Award for my close to 30 years of work in the field of petroleum geology in industry, in academia, and in research administration. Any professional working in this particular petroleum environment knows that this branch is characterized, above all, by cooperation. Originally trained as a hardrock/structural geologist at the University of Oslo in the mid 1970s, I experienced that the working style of the growing petroleum industry in Norway had already spread to the more traditional geological scientific community. My supervisors and later good colleagues and friends, Johan Naterstad and Ivar B. Ramberg, organized their students and grantees in project groups. They were also early on to take new methods and new technologies in use. Accordingly, my traditional toolbox, which had contained the hammer and the compass, was soon expanded to include the mass spectrometer for radiometric age determinations and Landsat imagery and seismological data to study fault systems onshore Norway.

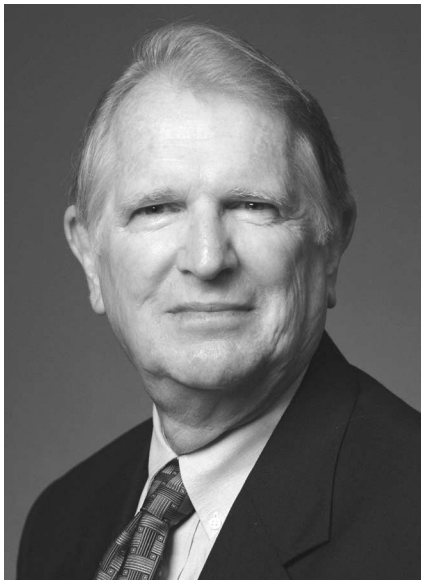
Our study of fault systems soon demonstrated that brittle faults were much more common on the Norwegian mainland than had hitherto been realized, and from there the step into the Norwegian shelf was short. Our fault study generated some interest among the Norwegian oil companies, and in 1981 I joined Saga Petroleum. This was the smallest of the three major oil companies in Norway at that time, and the technical staff had their lunch around one (big) table in Sandvika outside Oslo. The staff was exceptionally young, and experience and skills had to grow fast to cope with great challenges and to match the highly competent workers of the international companies that were operating in Norway. Hence, one had to handle the huge responsibility that was given from the management of Saga together with a firm confidence that its young staff would be able to handle the operations. Looking back, one can say that we did, but we had to learn fast. This is a very welcome opportunity to thank the executive director through many years, Asbjørn Larsen, a row of exploration managers (Rolf Myrland, Eigil Nysæther, and Hans Chr. Rønnevik) for their open-mindedness and confidence in their staff, and a host of innovative and competent young colleagues for some exiting seven years. It is with some sadness one realizes that the untraditional and creative environment created by the Saga Petroleum staff exists no more.

I left Saga in 1987 and joined another Norwegian company, Norsk Hydro, as one of three chief geologists, to work with my previous professor, Ivar B. Ramberg, who had moved to the industry and was senior vice president of Exploration and Production at Norsk Hydro. It was also a motivation to work with one of Norway's most profiled petroleum structural geologists and my good friend, Roald B. Færseth. During my time in industry, however, I had kept contact with academia, giving lectures, supervising students, and publishing when time allowed. It was therefore tempting to accept a professorship when the opportunity knocked, and from the choice between the University of Bergen and Technical University in Trondheim, I picked the former. It was indeed inspiring to take on the supervision of a rather large group of enthusiastic master's students, some of whom were to become my first Ph.D. students. Therefore, when I was called back to Norsk Hydro as managing director of its petroleum research center in Bergen, I kept an adjunct professorship and kept on supervising a large group of students. This was a mouthful indeed, but very rewarding, and it kept the students in good contact with industry.

During my last period at the University of Bergen (1993–2003), another inspiring opportunity opened up through cooperation with Ronald J. Steel (professor of sedimentology) and later with Magne Espedal (professor of applied mathematics) and Arne Graue (professor of physics). Although Ron left for a professorship in United States, the remaining three of us started a collaboration where geological and physical experimental data were merged into a reservoir model (Athene) that had the power to handle the combined complexity of a real reservoir, including sedimentary facies and complex fault structures. Athene allows faults to be treated as complex rock bodies, not as (over)-simplified surfaces. This earned us the status of Centre of Excellence, the Centre of Integrated Petroleum Research (CIPR).

I feel I owe a lot to the petroleum industry and its community, which includes important carriers of tradition and promotes competence, like the AAPG. In Norway, there has been, and still is, an excellent cooperation between industry and academia that has created a professional and friendly milieu of which it has been joyful to be a member. This milieu is highly international and counts a great number of European and American colleagues affiliated with the Norwegian and international companies operating in Norway. In this environment, I have had the pleasure to work with many competent and inspiring colleagues, and to supervise altogether 53 masters and Ph.D. students in Norwegian and foreign universities. I am proud of each one of them, and I think, with good reason. All of them work in the oil industry or in academic research organizations. I feel I share the AAPG Special Award with my colleagues, former and present, and with each of my 53 research students. On their behalf and my own, I express my sincere thanks to the AAPG Awards Committee for recognizing us all with the AAPG Special Award for 2006. For me, it is a great inspiration to continue my work for science from my position as director for Division of Science of the Research Council of Norway and to keep in touch with petroleum research and students and good colleagues like John Korstgård at the University of Aarhus, where I am presently serving as an adjunct professor.

Roy H. Gabrielsen



EDWARD C. ROY, JR.
Public Service Award

Citation—To recognize Edward C. Roy, Jr. for his support and dedication to Earth science education as a distinguished educator, university administrator, and researcher.

We can all relate to the need to improve science education in our nation's schools. Over the past decade, relative to most other industrialized nations of the world, we have seen math and science test scores for U.S. high school students decline. Throughout Ed Roy's career as a professor of geology and vice president for Academic Affairs at Trinity University, he has championed improved Earth science education for primary and secondary students as well as undergraduates.

Ed initially majored in biology as an undergraduate; however, due to the influence of family vacations throughout North America and after his first course in geology, he became hooked and changed his major to geology. He received both his B.S. degree and Ph.D. in geology from Ohio State University. After graduation, Shell Oil Company employed him to work as a micropaleontologist in Corpus Christi and then in Houston. In 1966, he accepted the invitation to join Trinity University as an assistant professor in the Department of Geosciences. His experience in the petroleum industry proved to be valuable to him in his role as teacher, administrator, and student mentor at Trinity.

At Trinity University, Ed's teaching skills were recognized very early in his career when he received the Outstanding Professor Award in his first year of service. He rose through the teaching ranks and served as chair of the department from 1978 to 1984. Shortly after that, in 1986, Ed became dean of the Division of Sciences, Mathematics and Engineering and then in 1987 vice president for Academic Affairs and served effectively as a chief academic officer for the University until 1999. At Trinity, working with his colleagues, Ed built one of the finest undergraduate geoscience departments in the nation at a liberal arts university.

In 1999, Ed came full circle and returned to the Department of Geosciences in a chaired position as the Gertrude and Walter Pyron Distinguished Professor of Geology. Throughout his university executive administrative career, Ed never lost touch with the classroom and continued to teach classes in the Geosciences Department. In early 2005, after 39 years of service, Ed "retired" as an emeritus professor. However, in the fall of 2005 Ed accepted a position in Trinity's Department of Education, where he will now guide K–12 education interns in the realms of science.

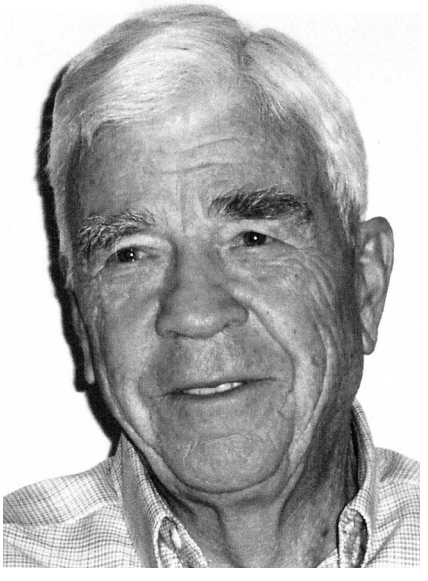
Ed's commitment to science education has continued throughout his career and extended to many professional and civic organizations. He has served on numerous professional committees including the AAPG, American Geolgical Institute (AGI), SEPM, National Research Council (NRC), and American Association for the Advancement of Science. He was the chair of the AGI Education Advisory Committee and a member of the NRC Board on Earth Sciences and Resources. For years he has been involved in regional science fairs for middle and high school students and regularly gives talks at elementary schools and other organizations. Ed clearly understood that to interest students in the geosciences one needs to instill an interest in better understanding how the Earth works early in their academic careers. He has made valued contributions to the civic, educational, and professional organizations of the city of San Antonio and the state of Texas by serving on a committee of the Chamber of Commerce, San Antonio Water System Advisory Panel, and chairing the Texas Education Agency's Earth Science Task Force. All this was done while continuing to maintain a busy schedule of university teaching.

In 1998, when the Texas State Board of Education (SBOE) removed Earth sciences from the curriculum ranks as a recognized core science course for high school graduation, Ed Roy came to the rescue and personally organized and led an effort to contest the Board's decision. Through Ed's efforts, in 2002 the SBOE established an Earth Science Task Force, which he chaired, to study the issue. The Task Force convened a series of open forums around the state enlisting comments from educators, concerned citizens, and corporations. The Task Force, under Ed's leadership, submitted its report to the SBOE in June 2003. In February 2004, the Earth Science Task Force presented recommendation 1, that Earth science be redesignated as a core science course for graduation from Texas high schools, to the SBOE for its consideration. The recommendation passed on first reading. However, when the proposal was considered at the second reading in May 2004, it was amended by a member of the SBOE. The amendment proposed that the requirement for graduation from Texas high schools be increased from three years to four years with Earth science courses becoming options for the fourth year of science. The amendment passed 14 to 1. Because the amendment was new, it had to be considered again in July 2004. At the July meeting of the SBOE, the amendment to the Task Force's recommendation 1 was passed with an additional amendment stating that the proposed four years of science would be contingent on funding from the state legislature. At this time, the state legislature has failed to pass a school funding bill; therefore, no funding has been approved by the legislature for the fourth year of science.

Ed Roy's many professional and public service accomplishments give solid evidence there is indeed more to

academic achievement than the attainment of degrees, tenured high office, and the formation of a distinguished resume. Testimony to this can be readily found among the hundreds of Ed's former students; his professional associates at Trinity; his host of local civic, social, and political friends; and especially from his professional colleagues, all of whom have benefited from his friendship and his gifts of leadership and wise counsel.

Marcus E. Milling



FRANK ROYSE, JR.

Pioneer Award

Citation—To Frank Royse, Jr., for his outstanding work in structural interpretation and his leadership in successfully exploring in the complexities of the Cordilleran thrust belt.

Frank Royse, Jr. was born in Geneva, Illinois, in 1928, the son of a professional U.S. Army officer. Frank was a true "Army brat," having lived in 13 communities by the time he completed high school. Despite the many changes in environment, the military background in which Frank grew up imbued him with a sense of integrity and discipline that served him well in later years.

After graduating from the University of Nevada–Reno with a Bachelor of Science degree in geological engineering in 1952, Frank was employed by the Continental Oil Co. in Wyoming, New Mexico, and Texas as a trainee for the position of seismic crew operator. In 1954, Frank began a tour of duty with the United States Army and served until 1956. Most of his time in the Army was spent with the 1st Engineer Arctic Task Force on the Greenland ice cap. In 1957, Frank took a position as geologist with the Corps of Engineers Snow, Ice, and Permafrost Research Establishment (SIPRE) doing basic snow and ice research—back on the Greenland ice cap.

Having had enough of Greenland, Frank enrolled in graduate school at the University of Wyoming and received a master's degree in geology in 1958. His master's thesis, which involved a mapping project in the thrust belt of eastern Idaho, sparked an interest in the structural geology of thrust systems that continues to this day.

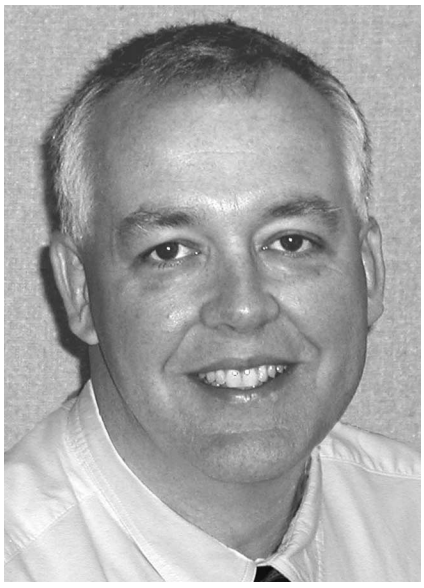
Frank's employment by the California Co. in 1958 when his college work was completed started a 30-year career with the Standard Oil of California group of companies. Between 1958 and 1972, he worked on a number of projects in the Rocky Mountain region and on a field project in Colombia. He was part of the group that did the geologic work that led to the discovery of the large Blue Bell field in the Uinta basin, Utah.

In 1972, Frank assumed leadership of the newly organized Thrust Belt Project (later the Thrust Belt District) of Chevron Oil Co. In addition to Frank, M. A. Warner, D. L. Reese, and P. R. Lamerson were assigned to the project. The goal of this group was to identify individual prospect areas in the U.S. Cordilleran thrust belt through an integrated approach that included structural, stratigraphic, source rock, and fluid migration studies. Although improved seismic techniques and input from Canadian mentors Clint Dahlstrom and Peter Verrall made important contributions, the success of the project was due in large part to Frank's ability as an astute structural geologist. When the thrust belt play took off in the mid-1970s the Chevron group, armed with a good working model of thrust belt geology and a significant acreage position, quickly became involved in the discovery of 10 oil and gas fields of which 3 were giants.

Frank was an AAPG distinguished lecturer in 1978–1979 and was given the Scientist of the Year award by the Rocky Mountain Association of Geologists in 1980. He served as an associate editor of the *Geological Society of America Bulletin* from 1983 to 1988 and is a fellow of the Geological Society of America. Frank is the author or coauthor of several papers on thrust belt geology published in various guidebooks and journals. One publication was especially noteworthy because of its timing. In a rather unusual action, Chevron management gave Frank and his coworkers permission to publish the results of their thrust belt studies before the play had materialized. The paper appeared in 1975, shortly after the discovery of the giant Pineview field had sparked renewed interest in the area, and it quickly became a valuable reference for those involved in the rapidly expanding play.

Frank transferred to Chevron Overseas Petroleum Inc. in San Ramon, California as senior geologic consultant in 1986. On this assignment, he advised on projects in various parts of the world including an extensive evaluation of the Subandean zone of Bolivia.
He retired from Chevron in 1988 and returned to the Rocky Mountain region to work on geologic items of personal interest and indulge his love of outdoor activities—tennis, golf, hiking, and sailing.

M. A. Warner



KEITH W. SHANLEY

Wallace E. Pratt Memorial Award

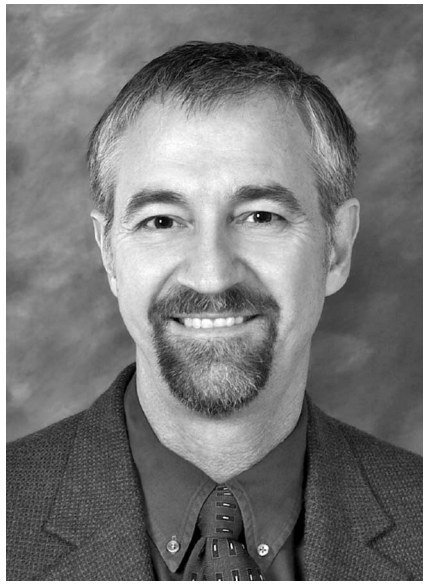
The Wallace E. Pratt Memorial Award for the best paper published in the 2004 *AAPG Bulletin* goes to Keith W. Shanley, Robert M. Cluff, and John W. Robinson for "Factors Controlling Prolific Gas Production from Low-Permeability Sandstone Reservoirs: Implications for Resource Assessment, Prospect Development, and Risk Analysis" (v. 88, no. 8, p. 1083–1121).

This paper results from approximately 20 years of conversations and discussions among the authors and close associates concerning the nature of tight-gas reservoir behavior, controls on accumulations, and play analysis. These conversations questioned and probed the nature of tight-gas systems and tried to reconcile observations made at a variety of scales ranging from entire basins to individual wells and cores.

In the fall of 2002, Keith Shanley wrote a draft manuscript that attempted to shed light on the nature of tight-gas reservoir systems and challenged the status quo regarding the controls on prolific gas production. It was apparent that this manuscript was really a synthesis of years of conversations between the authors.

Our intent in publishing this paper was to present a reexamination of tight gas in light of years of drilling and development and the collection of a large amount of new and original data. The intent was to spur scientific conversation and discussion with the hope of advancing our understanding and knowledge of this important resource.

Keith W. Shanley is a consulting geologist in Littleton, Colorado, with more than 24 years of experience in exploration, development, and research. He has worked in a variety of basins around the world for both major and independent oil and gas companies. Keith was born in the Netherlands and moved to the United States to attend university. He received his B.A. degree in geology from Rice University in Houston, Texas, in 1978 and his M.S. degree (1983) and Ph.D. (1991) in geology from the Colorado School of Mines in Golden, Colorado. In addition to his industry experience, Keith has served as a volunteer with the U.S. Geological Survey and as an interim instructor at the Colorado School of Mines. He has published numerous papers, edited volumes, and organized conferences and seminars dealing with sequence stratigraphy, reservoir architecture, nonmarine sedimentology and stratigraphy, and tight gas. Keith's current research interests include sequence stratigraphy and reservoir architecture, the integration of petrophysics, and risk analysis. He is a member of the Potential Gas Committee, AAPG, SEPM, Society of Petroleum Engineers, Rocky Mountain Association of Geologists, and Society of Petrophysicists and Well Log Analysts and is a registered petroleum geologist in both Texas and Wyoming. Keith lives in Littleton, Colorado, with his wife Paula and their children John, Stuart, James, and Kathryn.

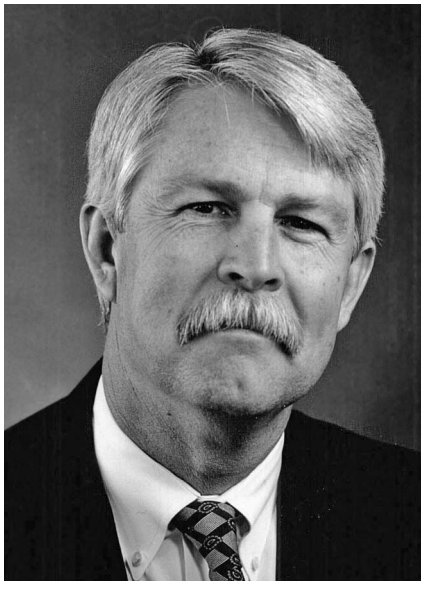


ROBERT M. CLUFF

Wallace E. Pratt Memorial Award

Bob Cluff is a geologist and petrophysicist with 30 years experience in oil and gas exploration, development, and research. His principal areas of expertise are petrophysics, stratigraphy and sedimentology of carbonate and clastic reservoirs, and the integration of petrophysical data with geological data in reservoir studies. He has worked and published extensively in the fields of nonconventional gas from tight sands and shales, source rock analysis, and maturation modeling. He has conducted and supervised projects in every sedimentary basin in North America plus numerous international projects.

Bob received his degrees in geology at the University of California at Riverside and the University of Wisconsin at Madison. He has also studied geology, math, and physics at the University of Illinois at Urbana-Champaign, University of Colorado at Denver, and Metropolitan State College of Denver. Bob's employment history includes the Illinois State Geological Survey, several years as an independent consulting geologist, and president of The Discovery Group since 1987. Bob is active in several professional societies including the Rocky Mountain Association of Geologists (2006 president), the Denver Well Logging Society, and the Society of Petrophysicists and Well Log Analysts.



JOHN W. ROBINSON

Wallace E. Pratt Memorial Award

John W. Robinson is the owner of North Ranch Resources LLC in Denver. He has 31 years of experience in petroleum exploration and development and previously worked for Amoco Production Company, Forest Oil Corporation, and Snyder Oil Corporation. He was most recently senior vice president for McMurry Energy Company and Jonah Energy LLC. He is the past president of the Rocky Mountain Association of Geologists and the Rocky Mountain Section, SEPM. In 1999, he and coauthor Peter McCabe received the AAPG Wallace E. Pratt Memorial Award for the best paper in the 1997 *AAPG Bulletin*. John received B.S. and M.S. degrees in geology from San Diego State University, and a Ph.D. in geology from Colorado School of Mines. His research interests are in fluvial sedimentology and multidisciplinary reservoir studies.

G. MICHAEL GRAMMER

Robert H. Dott, Sr., Memorial Award

The Robert H. Dott, Sr., Memorial Award for the best special publication in 2004 is presented to G. Michael Grammer, Paul M. "Mitch" Harris, and Gregor P. Eberli, coeditors for Memoir 80, *Integration of Outcrop and Modern Analogs in Reservoir Modeling*.

The special publication is a compilation of papers presented at a session with the same title during the AAPG annual meeting. The idea for the session and Memoir came during an AAPG field seminar to the Bahamas that the three authors lead for AAPG every year. We wanted to document how outcrop analogs and lateral facies relationsips in the modern sedimentary environment are powerful tools for reservoir characterization.

G. Michael Grammer is an associate professor in the Department of Geosciences at Western Michigan University in Kalamazoo, Michigan, and director of the newly formed Michigan Geological Repository for Research and Education. He received his Ph.D. at the University of Miami where he worked on modern carbonate slopes of the Great Bahama Bank.

His research interests include high-resolution sequence stratigraphy and reservoir characterization of carbonates and mixed carbonate/siliciclastic systems directed toward hydrocarbon exploration and exploitation.

His industry-related experience includes domestic and international consulting for several companies as well as senior research positions with Texaco and ChevronTexaco, working on carbonate reservoir characterization issues in various parts of the world. He was an AAPG distinguished lecturer in 2002/2003 and has been co-leading the AAPG field seminar "Sequence Stratigraphy and Reservoir Distribution in a Modern Carbonate Platform" with his co-editors Gregor P. Eberli and Paul M. "Mitch" Harris since 1998.

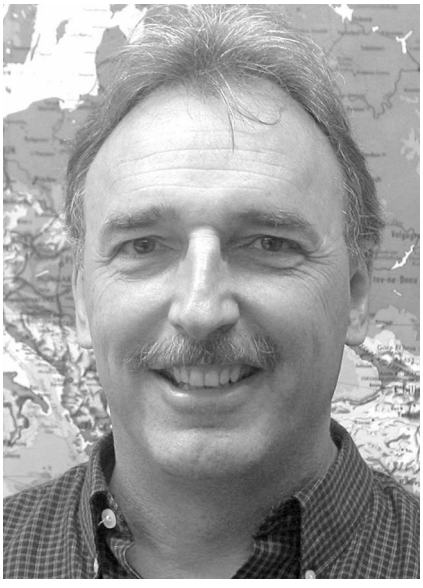
PAUL M. "MITCH" HARRIS

Robert H. Dott, Sr., Memorial Award

Paul M. "Mitch" Harris, a carbonate reservoir consultant with Chevron Energy Technology Company in San Ramon, California, performs carbonate research, technical support projects, consulting, and training for the various operating units of Chevron. His work during the last 27 years has centered on facies-related, stratigraphic, and diagenetic problems that pertain to carbonate reservoirs and exploration plays in most carbonate basins worldwide. Mitch received his B.S. and M.S. degrees from West Virginia University and Ph.D. from the University of Miami, Florida. He has published numerous papers, edited several books,

and is active in AAPG and SEPM. He has been a distinguished lecturer and international distinguished lecturer for AAPG, and has been awarded honorary membership from SEPM. Mitch is also adjunct faculty at Rice University, the University of Miami, and the University of Southern California.

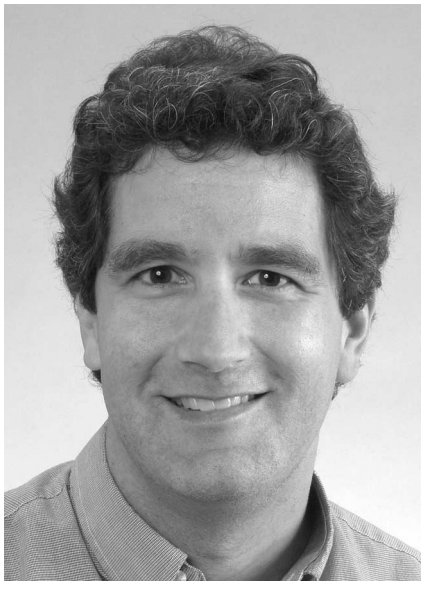
the influence of pore structure on these two rock properties. He was an AAPG distinguished lecturer in 1996/97, Joint Oceanographic Institute/U.S. Science Advisory Committee distinguished lecturer in 1997–1998 and is the European Association of Geoscientists and Engineers distinguished lecturer for 2005.



GREGOR P. EBERLI

Robert H. Dott, Sr., Memorial Award

Gregor P. Eberli is professor and chair of the Division of Marine Geology and Geophysics at the University of Miami and the director of the Comparative Sedimentology Laboratory. He received his diploma (M.S. equivalent) and Ph.D. (1985) from the Swiss Institute of Technology (ETH) Zürich, Switzerland. His research focuses on sedimentology, sequence stratigraphy, and petrophysics of carbonates. He assesses the influence of various frequencies of relative sea level changes on the stratigraphy of carbonates. He uses modern analogs and high-resolution sequence stratigraphy for carbonate reservoir characterization in the Paleozoic strata of Canada, the Paradox Basin, and Wyoming, and Cretaceous strata in the Middle East. In the laboratory, he explores the acoustic and hydraulic behavior of carbonates. In particular, he investigates



MICHAEL R. HUDEC

George C. Matson Memorial Award

The George C. Matson memorial Award for the best paper presented during an AAPG oral technical session at the 2005 AAPG Annual Convention in Calgary, Alberta, Canada is presented to Michael R. Hudec for "A Compressional Origin for Minibasins near the Sigsbee Scarp, Gulf of Mexico." The paper was based on several years of discussion concerning minibasin evolution between Mike and coauthors Daniel Schultz-Ela and Martin Jackson. In particular, these discussions focused on the paradox of minibasin initiation: how can newly formed minibasins sink and be depocenters when their density is less than that of the salt?

In 2002, Daniel conducted a finite-element study suggesting that light minibasins can form bathymetric lows if the surrounding salt massifs are shortened. In 2003, the AGL obtained a 3-D seismic volume from Veritas Marine Surveys containing 27 minibasins, and decided to test this hypothesis. Mike and Martin were able to interpret thrust faults at the bottom of most of the minibasins, confirming their compressional origin. The final presentation combined finite element models with seismic interpretation to show the theoretical and empirical observations supporting the compressional hypothesis.

Mike Hudec received his Ph.D. from the University of Wyoming in 1990, and spent the next eight years at Exxon Production Research, where he specialized in salt tectonics, extensional tectonics, and seismic interpretation. He moved to Baylor University in 1997 as an assistant professor in structural geology. In 2000, Mike moved to the Bureau of Economic Geology. He is co-director of the Applied Geodynamics Laboratory (AGL), an industry-funded research consortium studying salt tectonics. His current research interests include advance mechanisms for salt sheets, processes in minibasin initiation, and construction of a digital atlas of salt tectonics.

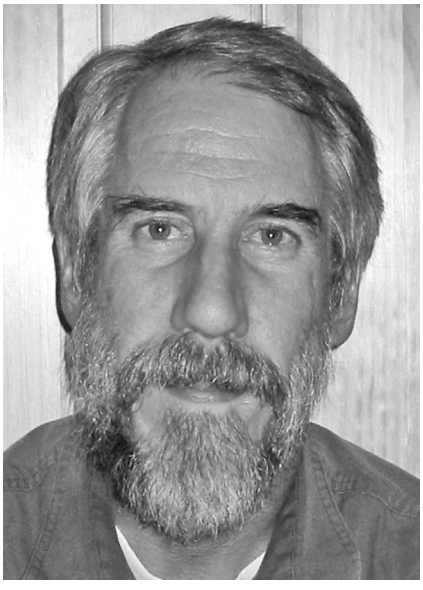
MARTIN JACKSON

George C. Matson Memorial Award

Martin P. A. Jackson is a senior research scientist and senior research fellow at the Bureau of Economic Geology, in the Jackson School of Geosciences at the University of Texas at Austin, where he heads the Applied Geodynamics Laboratory, a research consortium on salt tectonics supported by industry since 1988.

He received two bachelors' degrees from the University of London and a Ph.D. from the University of Cape Town, Rondebosch, South Africa.

His early career interests included lunar structures, mineral exploration, and Precambrian geology. He has published widely on structural geology and salt tectonics. Honors include AAPG's Sproule Award, Matson Award, and Dott Award; AAPG Distinguished Lecturer, lecturer in AAPG's School of Structural Geology; associate editorship of the *AAPG Bulletin* and the *GSA Bulletin*. He is a fellow of the Geological Society of America. His current research on salt tectonics combines fieldwork in deformed salt basins, seismic interpretation of deep-water settings, and physical modeling.



DANIEL SCHULTZ-ELA

George C. Matson Memorial Award

Daniel Schultz-Ela received a B.A. degree in geology from Carleton College, Northfield, Minnesota in 1978, an M.S. degree in geological sciences from Brown University, Providence, Rhode Island in 1982, and a Ph.D. in geology from the University of Minnesota, Minneapolis in 1988.

Daniel's current company affiliation is Mesa State College in Grand Junction, Colorado; but he was at the Bureau of Economic Geology, University of Texas at Austin, when the work was done. At the Bureau of Economic Geology, his research centered on deciphering the mechanical evolution of geological structures. He specialized in finite-element modeling of deformation in brittle-ductile systems, primarily directed toward salt tectonics, and more general mathematical modeling and computer simulation of structures and their relation to tectonic environments. Previous research included quantitative modeling and interpretation of three-dimensional finite strain patterns and their relation to tectonic regimes, application of mathematical finite strain theory to actual field examples of deformed rock, and computer simulation of cumulative strain histories.

HEGE MARIT NORDGARD BOLAS

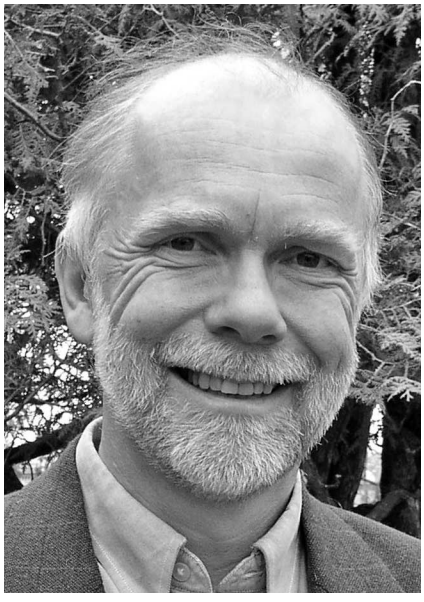
Jules Braunstein Memorial Award

The Jules Braunstein Memorial Award for the best AAPG poster presentation at the 2005 Annual Convention in Calgary is presented to Hege Marit Nordgard Bolas, Christian Hermanrud, and Gunn Mari Grimsmo Teige for "Seal Capacity Estimation from Subsurface Pore Pressures." The work was conducted at Statoil's Research Centre, funded by the company's internal research budget.

Cap rocks are characterized by small pore throats. These provide capillary seals in water-wet cap rocks, and also result in low permeability of cap rocks. The poster demonstrates that when the caprock permeability is sufficiently low to preserve overpressures in the underlying shales, then the pore throats are sufficiently small to provide capillary seals for oil and gas. In other words, if the reservoir is overpressured, then the cap rock that maintains the overpressures can seal hydrocarbons.

Hege Marit Nordgard Bolas obtained her M.Sc. degree in petroleum prospecting, Norwegian Institute of Technology, Trondheim, Norway, 1985. Her first professional assignment was with Esso Norge A.S. in Stavanger, Norway. Here, she worked as a North Sea explorationist from 1985 to 1992, including a temporary foreign assignment with Exxon Production Research Company in Houston, Texas, from 1990

to 1991. In 1992, she joined the Institute of Continental Shelf Research in Trondheim, performing basin and migration modeling research until 1994. Since then, Hege has worked both as a project manager and senior researcher at Statoil's Research Centre in Trondheim. Her major current research interest is hydrocarbon trapping mechanisms. Professional memberships include AAPG, and the Geological Society of Norway.



CHRISTIAN HERMANRUD

Jules Braunstein Memorial Award

Christian Hermanrud obtained his M.S. degree in applied mathematics at the University of Bergen, Norway in 1984. In 1988, he earned a Ph.D. in geological sciences at the University of South Carolina. Hermanrud has been with Statoil since 1984. He worked with development and application of basin modeling tools (1984–1989) as exploration geologist (1989–1991), and as a research scientist/advisor/specialist from 1992 to 2005. His main research interests are the understanding of geological processes and how such knowledge may influence decision making in petroleum exploration. Hermanrud is a member of the AAPG, Norwegian Geological Society, and European Association of Geoscientists and Engineers.

GUNN MARI GRIMSMO TEIGE

Jules Braunstein Memorial Award

Gunn Mari Grimsmo Teige obtained her M.Sc. degree in petroleum geology, Norwegian Institute of Technology, Trondheim, Norway, December 1990. Her first professional assignment was with Statoil ASA in Kristiansund, Norway. Here, she worked as an exploration geologist from 1991 to late 1992. In late 1992, she joined the development and production team of the Heidrun field (mid Norway) with Statoil ASA/Conoco, in Stavanger, where she worked as an onshore/offshore petrophysicist until 1994. Since 1994, Gunn has worked as a senior researcher/staff geologist at Statoil's Research Centre in Trondheim. Her major current research interests are sealing analyses and leakage processes. Professional memberships include the AAPG, European Association of Geoscientists and Engineers, and the Geological Society of Norway.

MICHAEL CRICHTON

Journalism Award

The Journalism Award is given in recognition of notable journalistic achievement in any medium that contributes to public understanding of geology, energy resources, or the technology of oil and gas exploration.

John Michael Crichton was born in Chicago, Illinois. He received an A.B. degree (summa cum laude) from Harvard University, Cambridge, Massachusetts, in 1964 (Phi Beta Kappa) and an M.D. from Harvard Medical School in 1969.

After graduation from Harvard, Michael embarked on a career as a writer and filmmaker. Called the "father of the techno-thriller," his novels include *The Andromeda Strain*, *Congo*, *Jurassic Park*, *Timeline*, *Prey*, and *State of Fear*. He has also written four books of nonfiction, including *Five Patients*, *Travels*, and *Jasper Johns*.

Crichton has sold more than 150 million books, and his books have been translated into 36 languages and 12 have been made into films. He is also the creator of the television series ER. He is the only person to have had, at the same time, the number one book, the number one movie, and the number one TV show in the United States. Always interested in computers, Crichton ran a software company, FilmTrack, which developed computer programs for motion picture production in the 1980s;

for this pioneering work he won an Academy of Motion Pictures Arts and Sciences Technical Achievement Award in 1995. His film *Westworld* was the first feature film to employ computer-generated special effects.

Crichton has won an Emmy, a Peabody, and a Writer's Guild of America Award for ER. In 2003, a newly discovered armored dinosaur was named for him: *Crichtonsaurus bohlini*.

JAMES G. "JIM" SCHULZ
Teacher of the Year

James G. "Jim" Schulz, the winner of the 2006 AAPG Teacher of the Year, will be honored April 10 during the all-convention luncheon.

Schulz, the earth sciences and biology teacher (grades 9 and 10) at the Helena High School in Helena, Montana, is being honored for his creative and innovative approach in making science relevant for his students.

As Teacher of the Year, Schulz will receive $5000 from the AAPG Foundation; half of the money goes to Helena High School for educational use under Schulz' supervision, and half goes directly to Schulz for personal use.

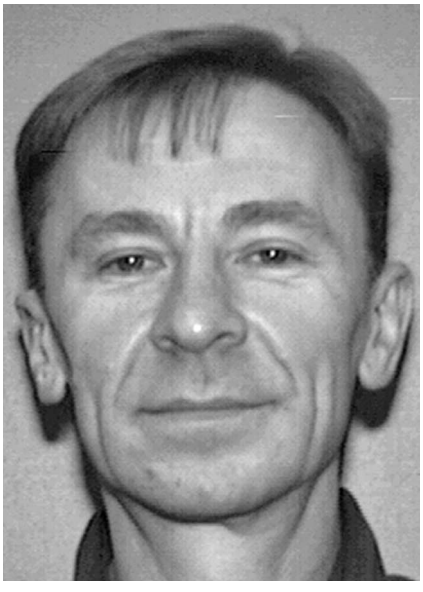
Schulz was born in Drummond, Montana, and spent his youth "roaming the hills, collecting rocks and fossils, and identifying wildflowers, trees, and edible plants."

He received a B.A. degree in history and science from Montana State University (1979) and an M.S. degree in earth sciences from Northern Arizona University (1998).

He began teaching science to grades 7–12 in 1980 at the Willow Creek School in Willow Creek, Montana—Montana's smallest high school with 21 total students. He has taught at Helena since 1986.

Other honors include Montana History Teacher of the Year (1993); Helena Teacher of Year (1999); Shell National Science Teacher of the Year Runner-up (1999); Montana State Teacher of the Year Runner-up (2000); Disney American Teacher Award for Outstanding Middle School Science Teacher (2000).

He has received numerous National Science Foundation and federal research and teaching grants. Most recently, he received a Disney American Teacher Award Grant (2000); National Geographic Society Educational Grant (2001); Helena Educational Foundation Grant (2003 and 2004); and a National Education Association Innovation Grant (2004).



MAREK KACEWICZ
Gabriel Dengo Memorial Award

The Gabriel Dengo Memorial Award, given to recognize the best AAPG paper presented at the pervious year's international conference, is presented to Marek Kacewicz for his paper, "Towards a Common Earth Model: Combining Seismic Inversion with Basin Modeling." The paper was coauthored by Wenlong Xu.

Marek Kacewicz received his M.S. degree in applied mathematics and computer science and Ph.D. in natural sciences (geology) from Warsaw University (Poland). He works for Chevron Energy Technology Company in Houston, Texas. His work experience includes Warsaw University, Free University of Berlin (Germany), ARCO Research, and Unocal Exploration and Exploitation Technology. During his petroleum industry and academic career, Marek has worked on exploration projects worldwide and has conducted research in basin modeling and mathematical geology. Marek has received the International Association for Mathematical Geology Vistelius Award, the Alexander von Humbold Fellowship Award, three conference awards (including the Gabriel Dengo Memorial Award), and several awards from ARCO and Unocal.

DENIS MARCHAL
Ziad Beydoun Memorial Award

The Ziad Beydoun Memorial Award for best poster presentation at the 2005 AAPG International Conference and

Exhibition is awarded to Denis Marchal, and Jean-Marc Daniel, and Misael Alvear for their paper entitled "4-D Analogue Modeling of Transpressional Structures Growing in a Rheologically Heterogeneous Medium: Methodology, Main Results, and Reference Models."

Denis Marchal earned his master's degree in geology in 1990 at the University of Nancy. In 1992, Denis did his postgraduate dissertation in paleontology and sedimentology at the University of Burgundy, and in 1997, he received his Ph.D. in structural geology at the University Henri Poincaré-Nancy. In 2000, he held a postdoctoral research position in structural geology at the Institut Français du Pétrole.

Currently, Denis is a technical advisor in Petrobras Energía de Venezuela in Caracas, Venezuela; project leader of the NFR Cretaceous Reservoir Study Group, La Concepción field, Maracaibo Basin; and E&P coordinator of the Fractured Reservoirs Technical Community. His areas of professional interest include integrated reservoir characterization, development of new methodologies for analyzing fault and fractured networks, application of conventional and nonconventional technologies in petroleum structural geology, and working in geological imaging and its application to the petroleum industry.

JEAN-MARC DANIEL

Ziad Beydoun Memorial Award

Jean-Marc Daniel, head of the Institut Français du Pétrole (IFP) Structural Geology Department, has a Ph.D. in structural geology from the Pierre et Marie Curie University, Paris (1995). Since 1995, he has been a research engineer in the IFP Geology-Geochemistry Division, and the head of the IFP Structural Geology Department since the beginning of 2002. Jean-Marc is mainly interested in fracture network characterization and modeling, in terms of both geometry and fluid flow. From 1997 to 1999, he managed several research projects concerning the role of faults on fracturing and fluid flow. Jean-Marc is now in charge of analog modeling and 4-D description of fault network and is involved in advanced fractured reservoir studies, including stochastic modeling of fracture networks. His main areas of interest are geological description of fracture network from outcrop and subsurface data, 4-D analog modeling of fault network, and geomodeling.

MISAEL ALVEAR

Ziad Beydoun Memorial Award

Misael Alvear has a B.S. degree in geology from the Universidad Nacional de Colombia. From 1998 to 2003, Misael worked for Landmark Graphics/Halliburton in Colombia, Argentina, Mexico, and Venezuela. Presently, he works for Petrobras in Venezuela as a staff geologist. His professional experience includes application support, workflow consulting, geocellular models and reservoir characterization studies.