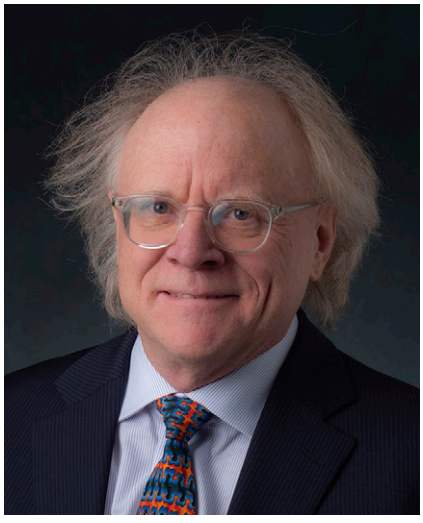
AAPG Honorees, 2020



PAUL WEIMER
Sidney Powers Memorial Award

Citation—To Dr. Paul Weimer—a research pioneer for deep-water exploration and production; visionary leader of professional societies; an inspirational educator and mentor for geoscientists all over the world; and innovator in geological outreach and public education.

AAPG's Sidney Powers Medal is a measure of one's scientific and creative contributions to the broad petroleum geosciences. Paul Weimer is recognized for his original and innovative research, his teaching and training of geoscientists globally, his dedicated service to professional societies, and his singular approach towards geologic education for the public. In this way, Paul's career has linked research, teaching, and service; as a consequence, he possesses an understanding of global petroleum geology held by few academics.

Paul was born and raised in the Colorado mountains at 8000 feet elevation. Ironically, his career led him in the opposite direction—studying the geology more than a mile below sea level. Deep beneath the offshore waters, Paul found extraordinarily complex geology that held high upside potential for extensive petroleum reserves. He then built upon his success as a researcher, to become an educator, mentor, and leader with global impact.

Paul's written contributions are numerous and diverse: 3 co-authored books, 11 co-edited volumes, and more than 170 co-authored papers (30 in the *AAPG Bulletin*, 41 in the GCAGS Proceedings). These publications cover a wide range of topics: sequence and seismic stratigraphy, reservoir sedimentology, structure and tectonics, petroleum systems analyses, unconventional resources of the Rocky Mountains, and several global summaries of deep-water production and global trends. Even more impressively, these publications include more than 140 co-authors from more than 20 countries—a good indicator of Paul's collaborative approach.

Paul's formative education was in the liberal arts and sciences. Paul received his B.A. from Pomona College (1978) and M.S. from University of Colorado Boulder (CU Boulder, 1980). He then worked for four years for Sohio Petroleum doing frontier exploration in northern Alaska. His assignments included field work in the Arctic National Wildlife Refuge, rig work, and several lease sales (Mukluk and others). He then opted for a Ph.D. at The University of Texas at Austin in 1984, arriving with a clear vision of what he wanted to pursue, and how best to accomplish it. After attending the GCSSEPM Research Conference that December, Paul correctly deduced that the geology of deep-water settings would be a major research area for industry, specifically in the northern deep water Gulf of Mexico.

Working with his advisor, Dick Buffler, Paul was able to procure an industry-collected, regional two-dimensional seismic data set across the Mississippi Fan. These data became his dissertation research, the results of which immediately became a standard reference for Gulf of Mexico geology. Paul's research defined the evolution of the channel-levee systems and related sediments within a sequence stratigraphic framework, while introducing the informal term "mass-transport complex." At the invitation of Arnold Bouma, Paul published his Ph.D. results in an entire issue of the *GeoMarine Letters* journal in late 1989. His related 1990 paper in the *AAPG Bulletin* received the

AAPG J. C. "Cam" Sproule "Best Paper" Award in 1992.

As a graduate student, Paul found time to co-organize two major professional meetings, then co-edit both of their proceedings: a three-day symposium on North Slope geology (Pacific Section AAPG, May 1985), and a two-day symposium on the seismic stratigraphy of deep-water settings (SEPM, August 1987).

After graduation, Paul worked for Mobil Oil in research and international exploration from 1988-1990, and then joined the faculty at CU Boulder in August 1990. Nine years later, he was appointed to the Bruce D. Benson Endowed Chair, and assumed the Paul M. Rady Endowed Chair in 2019.

Working with Roy Kligfield, Paul's first industry-sponsored research consortium focused on regional geology of the northern deep water Gulf of Mexico. He subsequently organized three additional research consortia in the GOM, and one in the Rocky Mountains. Additionally, his graduate students completed many other stand-alone research projects.

Paul was not the first academic to organize industry-sponsored research consortia, but he did use these consortia as a springboard into research, teaching, and service for the greater geologic community. For these research consortia, Paul supervised more than 50 graduate students; employed 30 post-doc researchers and visiting scientists; was supported by 50 companies; and produced important literature from which the entire geo-community benefited. The entire May 1998 *AAPG Bulletin* was dedicated to the integrated results of their first Gulf of Mexico consortium. This was the first *Bulletin* issue in 85 years dedicated to a single group's research.

The findings of a later industry-academic partnership resulted in helping select the location of the 1996 Baha 1 well, the first exploration well drilled in the Perdido fold belt in the Gulf of Mexico, which held the global water depth record for two years. Baha 1 was a dry hole, but 10 other fold belt discoveries were subsequently made in the United States and Mexican waters.

In the July 2017 *AAPG Bulletin*, the results of Paul's final Gulf of Mexico consortium were published; this was only the third issue in the *Bulletin's* history dedicated to a single group.

Paul's one major foray into Rocky Mountain basins was a research consortium on integrated analysis of the unconventional resources of the Piceance Basin. This work resulted in a 900-page tome, the first authored book published by RMAG in their 100-year history. For the unique Redwing Creek meteorite impact field in North Dakota, four additional drilling sites were selected based on the M.S. research of Ben Herber.

Overall, the publications arising from these consortia had significant impact on industry, and established new standards for research expectations among academics.

Paul also used his service to professional societies both to advance the science of geology, and to teach the most recent concepts to industry and students. He has organized many major research conferences whose proceedings became standard references, such as the 1991 Springer Verlag deep-water volume, *AAPG Memoir 58*, *AAPG-SEG Special Publication 42*, and six research conferences and one core workshop for the GCSSEPM and SEPM.

In addition to all these conferences and publications, Paul served as a distinguished lecturer for four professional societies in related disciplines—a feat accomplished by few people. Through these professional groups, Paul taught public short courses to several thousand geoscientists in 35 countries: 2001 Esso Australia Distinguished Lecturer Short Course, 2004 SEG-EAGE Distinguished Instructor Short Course, and 2011-2012 while serving as AAPG president. Topics included petroleum systems of deep-water settings, sequence stratigraphy, and future of the petroleum industry.

For these impressive career contributions, Paul has been recognized by many groups: AAPG (Cam Sproule Award, Distinguished Service, Distinguished Educator, Heritage of Petroleum Geologist, Honorary Member), GCAGS (Distinguished Educator, Don Boyd Medal), Gulf Coast SEPM (Distinguished Service, Honorary Member, Doris Curtis Medal), GSA Fellow, NOGS (Honorary

Member), and numerous best paper awards.

Clearly, Paul is an extraordinarily productive and influential geologist. But Paul is exceptional not just for what he does… but for how he does it.

Simply put, Paul has an unusual ability to bring people together. Sometimes these people are individual collaborators like me – one of Paul's 140 co-authors on various publications. Many of us were invited by Paul to bring our own work forward amongst our own peer group. So our contributions to industry would have never have seen the light of day, if not for Paul's encouragement.

Even more powerful is Paul's gift as a connector of people and ideas. Throughout the years, Paul assembled a diverse network of geo-thinkers across disciplines, across organization levels, across countries, and across age groups. Through conferences and workshops, Paul brought these people together so they could share successful approaches to deep-water exploration.

The impact to our industry cannot be overstated. Many senior leaders absorbed the insights and know-how from these collaborative activities. Many of those leaders risked billions of dollars (and their own reputations!) because of their confidence in the global deep-water plays that Paul helped them understand. And those bets paid off in historic ways for many companies and countries.

One example of Paul's collaborative, inclusive approach is the Gulf Coast Section-SEPM research conferences in 1994 and 2000. As the lead organizer for both conferences, Paul purposefully chose to internationalize the conferences' technical content—both transforming a local society event into an internationally recognized event, but correctly predicting that the pursuit of deep-water exploration and production would be globalized. Second, the attendees were the key scientists in the emerging global deep-water play. When they all met in Houston, magic happened. As experts from different fields contributed their perspectives, ideas flourished, evolved, and became accepted, and were applied. The accompanying publications became standard references for the next decade.

Finally, Paul has the creative vision to take on large, difficult projects that others eschew. In mid-career, Paul redirected some of his efforts to focus on geologic education for K-12 students and the general public. His groups' innovative approach is constructing detailed, scientifically accurate computer animations of geological processes, presented in an engaging, cinematic way to help bridge gaps in the public's understanding of geologic processes. Paul started this project nearly 20 years ago; since then, he has worked with four different groups of animators/developers. Paul's third group of animators created a 25-minute video showcased at the 2015 ACE opening ceremony: "A Brief History of Colorado Through Geologic Time." The fourth and newest group of animators is working now, and we can expect to see results during the next few years.

In conclusion, Paul's career embodies the ideal blend of academic research, industry focus, public outreach, leadership within professional societies, and most importantly, an unstoppable dedication to all of those around him. Many of us owe Paul for our own success. Please join us in congratulating Paul for earning AAPG's top honor, the Sidney Powers Memorial Award.

Henry Pettingill

Response

In August 2019, I was informed by AAPG president Mike Party of this incredible honor. To say that I was surprised, humbled, stunned, dumbfounded, thunderstruck, is a gross understatement. I have known all of the Powers Medal recipients of the past 22 years and worked with many of them in various capacities. To be included in such an august group is one of the highlights of my career. I thank the AAPG profusely.

To start with, I thank Ray Thomasson, my nominator; the writers of the letters of support; and Henry Pettingill, my citationist. As Huckleberry Finn says, Henry "… told the truth, mainly. There was things which he stretched, but mainly he told the truth…. with some stretchers."

Instead of repeating the accomplishments of my career, I'd like to highlight some major insights, along with some profoundly meaningful experiences;

all set in the context of advantages that I've enjoyed. Finally and most importantly, let's acknowledge the people who made this all possible.

Key Insights

To borrow Larry Meckel's term, I've experienced three big "aha" moments—perhaps more like "aha" days.

- In August 1978, I experienced a jolt of four-dimensional thinking while working in the field for one week. With this conceptual leap, I started to feel like I might have a chance as a geologist.
- In December 1984, after attending a GCS-SEPM research conference, I intuited that global deep-water exploration was going to explode in the coming years. I began to orient my career accordingly; initially in my Ph.D. research, and later for a substantial part of my research.
- In July 2000 while returning from a family vacation in southwestern Colorado, a thought was dropped into my head which led me towards developing public outreach, discussed below.

Deepest Meaning

Three types of experiences held the deepest meaning for me professionally. These were the times when I felt most alive:

- Working with teams of researchers… sitting down to discuss some issue that you must solve, before you can move on to the next point. When the teams really gel, you reach a "flow" state as a group. There is one heart beating in the room. When the answer to your issue emerges, you don't really know how you got there, and it doesn't matter whose idea it was. And one important lesson I learned is that not everyone can work in teams, and to avoid inviting them to the party.
- Connecting with an audience… intuiting when the people have their own small "aha" moments about geology. I became a professor because of early experiences as a teaching assistant; as a lecturer, there's nothing better than watching students make new connections in their brains.
- Assembling the right people into the same room at the same time…. Of all the research conferences, technical sessions, and meetings that I have organized, the two that Henry mentioned held the deepest meaning. One could sense that there was alchemy happening, lightning in a bottle; when the attendees left the conference, they knew that the concepts they forged would change the way that everyone works. This doesn't happen very often, so when it does, it is special.

Advantages

In the big picture, the first advantage I've had is the society into which I was born. In my case, I was born into an educated, loving, and hardworking American family of European descent. My father, Bob Weimer, is a well-known geologist. From this advantaged position, I saw opportunities and tried to make the most of them.

In terms of a career timeline, I was also fortunate to start my professional career doing frontier exploration in northern Alaska. But the most important lesson was the need to stay ahead of the curve in research and service to remain relevant technically. This lesson, in turn, became one of the main drivers in my career.

Dramatis Personae

The biggest advantage of all is, of course, the people with whom I've worked. Several hundreds of them—mentors, guides, advisors, colleagues, students, research scientists, visiting scientists—people who believed in me and supported my activities. Here are just a few, in chronological order.

- My three academic advisers: I could be a real pain-in-the-anatomy, but they overlooked that and provided me with immense opportunities.
  - o Don Zenger, my undergraduate (B.A.) advisor;
  - o Don Eicher, my graduate (M.S.) advisor,
  - o Dick Buffler was a most supportive Ph.D. adviser and provided ample opportunity for me to pursue my goals.
- Irv Tailleur took the chance to co-edit two volumes of North Alaska geology with me, a young, hyper-energized pup.
- Arnold Bouma made the unparalleled offer to publish all of the results of my Ph.D. research in one issue of *GeoMarine Letters*, and invited me to co-edit a book on seismic stratigraphy of deep-water settings.

- Early in my academic career, I befriended and was supported by Frank Brown, Bob Mitchum, John Sangree, and Bert Bally. Their input and guidance were essential to jump-start my efforts at CU Boulder. Later, Bill Fisher became an important confidant and advisor.
- All of the special speakers whom we invited to speak at CU Boulder for our students.
- The more than 50 companies and hundreds of their geoscientists who supported our research.
- Roger Slatt co-taught academic and industry courses with me, co-organized research conferences and technical programs, and co-authored two books. He also supported me in becoming the 2001 Esso Australia Distinguished Short Course Instructor.
- Bob Graebner gave us access to the first seismic data set of our first Gulf of Mexico industrial research consortium.
- David Lawrence was essential for us being involved with the Perdido Fold Belt Project, an unprecedented applied research project for academics.
- Kevin Biddle, AAPG editor, invited us to publish the results of our first Gulf of Mexico consortium in the 1998 May *AAPG Bulletin*.
- Peter Duncan invited and supported me to give the global 2004 SEG-EAGE Distinguished Instructor Short Course.
- Bob Perkins, and later Norm Rosen, who were executive directors of the Gulf Coast Section SEPM—their annual research conference is now named in their honor. Their support was essential to my success in co-organizing three research conferences, and later by allowing Roger and me to use many figures from their conference proceedings for our books.
- Roger Barton provided us the opportunity to interpret a spectacular three-dimensional data set across a field that produces from a meteorite impact. Later, the results were used for additional development drilling.
- 32 geologists co-edited books with me. In chronological order: Irv Tailleur, Martin Link, Henry Posamentier, Arnold Bouma, Bob Perkins, Tom Davis, Roger Slatt, Jim Coleman, Norman Rosen, Mike Styzen, Hans Nelson, David Lawrence, Dick Fillon, Henry Pettingill, Ron Phair, Harry Roberts, Berend van Hoorn, Mike Sweet, Morgan Sullivan, John Kendrick, Art Donovan, Craig Shipp, Sylvia dos Anjos, Sverre Henricksen, Edmundo Marques, Mike Mayall, Tony D'Agostino, Art Saller, Kurt Campion, Tim Huang, Rick Sarg, and Fred Schroeder.
- Ed Dolly educated and inspired me with his tenacity and good humor, as we worked on the GeoLegends video series and AAPG's 100th Anniversary.
- Bruce Benson has my profound gratitude for endowing the chair that I held at CU Boulder from 1999-2019; and for his executive advice in CU matters.
- Steve Cumella has patiently educated me, as we co-authored a new book about the Piceance Basin.
- Paul Rady, chief executive officer of Antero Resources, established an endowed chair at CU Boulder in 2019, which I am honored to occupy. Paul is also the largest, continuous benefactor of our latest project: geologically accurate animations to educate the public about all aspects of geology. Our goal is to create animations used in videos, showing the geologic development and key geologic features for all US states.
  - o Eighteen years ago, we showed some initial animations to Ray Thomasson while he was president of AGI in an effort to link with their education program. Ray immediately grasped our goals and became a tireless supporter. Ray, Jim Gibbs, and the AAPG Foundation have also invested most generously to support our efforts.
  - o I have never had more fun working on a project. It integrates many different skills – not just the pedagogical issues of teaching geology to beginners, but also music, animation, and computer performance.

In Conclusion

Anyone who receives this honor must acknowledge the true reason why they are here: their family. First, I thank my parents for providing incredible opportunities and unwavering support. I thank Laurie Lamar, my life's partner and spousal unit for more than 35 years, for her continuous support and guidance—and the best geologic editor for whom a professor could ask. Our sons, Lou and Rudy, tolerated my absences growing up, and now their wives Sydney and Lisette pretend to

tolerate my inspired humor. I look forward to sharing (inflicting) these jokes on granddaughter, Roslyn, in future.

In closing, I thank AAPG again for the honor of receiving the Sidney Powers Medal. It is profoundly meaningful.

Paul Weimer

MARTHA LOU BROUSSARD
Michel T. Halbouty Outstanding Leadership Award

Citation—To Martha Lou Broussard, for her outstanding, continual leadership by serving AAPG and associated societies, other geologists, and especially students in her various leadership positions with her skillful planning, managing, and editing.

Martha Lou Broussard began her exemplary service to AAPG by being the technical program editor for the 1971 annual convention in Houston. In her career, without it being a goal, she has been AAPG's Pioneer Woman; she is the first female geology graduate of Rice University, first female to be chairperson of House of Delegates (HoD), first female member on the Executive Committee, and the first female to be vice president of AAPG.

Martha Lou was the guiding force in the beginning of the AAPG/SEG Student Expo at Rice in the fall of 1998, and she has been the consistent, persistent element in its continuity and expansion, with annual expos now at several sites and schedules. Her singular planning and effort in regard to the Student Expo undoubtedly is her legacy to AAPG. Yet, she has actually served on numerous committees, including two roles on the AAPG Executive Committee, thereby establishing a very high bar for volunteering.

Another vital important aspect of Martha Lou's career has been her technical/professional association with a number of brilliant geoscientists, including Sidney Powers medalists, Rufus LeBlanc, Bert Bally, Peter Vail, and James Lee Wilson, as well as Kaspar Arbenz and M. King Hubbert.

Martha Lou, a native of Tulsa, Oklahoma, has resided in Houston, Texas, for almost all her adult life. An interruption was the significant stint in London from 1976 to1983. Upon graduation from Rice in 1957, she began her career with Shell Development Company as the assistant to the demanding King Hubbert. Upon his retirement in 1964 to join the US Geological Survey, Martha Lou transferred to Shell's newly formed Non-hydrocarbon Group (Shell Canadian Exploration Company) to explore for precious metals in the western states. There she met her future husband Douglas Broussard, an outstanding pipeline engineer. She transferred back to Shell Development in its training section. After a short time, she returned to Rice's Department of Geology (Earth, Environment and Planetary Sciences) in 1966 as administrator. Since her retirement in 1989, she has been a full-time volunteer as the department's alumni coordinator, but she has gone well above and beyond that job description. Martha Lou hosts alumni gatherings across the country, maintains a website for alumni news, provides information for the department's newsletters, fundraiser for renovations, and organizes departmental events, as well as assisting students in their academics, preparation of theses, and job searches. She established the Douglas and Martha Lou Broussard Fellowship at Rice, which supports female graduate students. She, in memory of Doug, established a scholarship in mechanical engineering at Texas A&M University. She provided the funds for Rice (its students, faculty, and staff) to be a perpetual subscriber to the Datapages archival library, with all AAPG publications, along with those of AAPG societies and other petroleum-related publishers. In the words of James Lee Wilson, she was "truly the 'Head of the Department' as she directed students and faculty alike in her usual efficient style." Bert Bally added, "With much grace, she represented our department, its students, and the faculty in our professional

organizations. . . Martha Lou is the best friend our department ever had."

Martha Lou has served the Houston Geological Society (HGS) in important positions and tasks since the early 1960s— as chair of numerous committees, member of Executive Committee, secretary, and vice president programs, editor of its special volumes on deltas, and as a permanent Delegate at Large to the AAPG House of Delegates (HoD). She received the HGS Distinguished Service Award and Honorary Membership. Martha Lou worked on numerous projects for GCAGS, especially when HGS has hosted GCAGS annual conventions. She also represented the Gulf Coast Section on AAPG's Advisory Council in 2011-2014. While she resided in London, with her husband, Doug, who was managing the construction of Shell's pipeline from northern North Sea's Brent oil field to northern Scotland, Martha Lou served as its delegate to HoD. By the time she returned to Houston, London (PESGB) had five delegates. She worked at ERICO, Inc. on some of its international exploration research projects while she also served as an informal travel and restaurant advisor for American friends.

Martha Lou Broussard has served on some 10 AAPG committees, and in 1987-1988 she was HoD chair. She was elected AAPG vice president for 1998-1999. Of the six AAPG standing committees that focus on students (Academic Liaison, Grants-in-Aid, Mentoring, Student Chapters, Visiting Geologists, and Youth Educational Activities), Martha Lou has served on each one, except for Grants-in-Aid. In fall 1998 she became the most effective force behind the initial AAPG/SEG Student Expo held at Rice and hosted by its AAPG student chapter. Her passion and her works for this very important annual event continues unabatedly. This has to be her most outstanding contribution to AAPG and the profession, for undoubtedly hundreds of professional geoscientists, as former students, have benefited appreciably from this AAPG program that now is conducted in Houston, Texas; Norman, Oklahoma; and Laramie, Wyoming; and with the Eastern and Pacific sections. For this singular ongoing service, Martha Lou, along with seven other geoscientists, received the SEG Special Commendation in 2007. She received the James A. Hartman Service to Students Award also in 2007. It is said that she has earned "the thanks of all the young geoscientists she has helped"; that she has "mentored and inspired generations of geoscientists"; that "her dedication to the AAPG and to young, future AAPG members is exceptional."

Martha Lou became an AAPG Foundation Trustee Associate in 2005. AAPG awards Martha Lou Broussard has received are Distinguished Service, HoD Honorary Member of the House, HoD nine-year Certificate of Service, Certificate of Merit, Hartman Award (noted above), Presidential Award for Exemplary Service, and Honorary Membership.

Amazingly, Martha Lou has been able to make time for service to charitable organizations and her church. In particular, the local Heritage Society projects have benefited from her service. Even with all her work on behalf of professional and service organizations, her family receives her undivided attention: her daughter, son-in-law, five grandchildren, and four great grandchildren. As a personal note, Martha Lou has been a wonderful friend to Doris and me.

John W. Shelton

Response

Mike Party's call last August was a very big surprise. I am most grateful to the Advisory Council for recommending and EC for awarding me this honor.

Everyone of a certain age in AAPG has a story about an encounter with Halbouty. Mine is a little different. Many of you might remember that at one time abstracts for the annual meeting were published in the *AAPG Bulletin* and by the late 1960s had become small, non-peer reviewed papers. The year that Halbouty was president of AAPG the EC decided to limit abstracts to 250 words with no figures or graphs. The first annual meeting that this was to effect would be the 1971 meeting in Houston at which I was to be the technical program editor. I took this job very seriously and devised a template on heavy white paper with blue lines delineating the space that would be photographed for the *Bulletin*. There were no laptops, word counters, and other time saving devices in 1970. Most everyone was very cooperative, and the few

that were not, resubmitted after my firm letter reminding them that the new rules by the EC had to be followed. All complied except for one. The abstract was four pages, single spaced, and submitted by Art Meyerhoff and Michel Halbouty. I sent off my letter to Art and received a phone call in return. Art was laughing. He told me that Mike had written the abstract and just put Art's name on it out of modesty! He would forward my letter to Halbouty.

Several days later the phone rang in my office. A barrage of words shouted at me over the phone. It was so loud that James Lee Wilson came running down the hall thinking that someone was attacking me in my office. Much later, after Halbouty had run out of words, I explained that if he did not follow the rules that his EC had made, no one else would in the future and hung up. A few days later a revised abstract arrived with a note that his was the most important paper that would be presented at the meeting and should have a prominent place. After that he ignored me at the HGS meetings.

I became a geologist because Carrie Croneis decided that it was time for Rice to have a female geology major. So at the end of my sophomore year when we were to choose majors he invited me to his office to talk about the major. Luckily my high school in Tulsa had a course in geology and I knew what the word meant. Of course, after I graduated from Rice no one was hiring female geologists, so I went to work on my next degree. In the fall of 1958 Croneis again called me into his office. The Shell Bellaire Research Lab was looking for a female geologist! They had a high rank research geologist who could not keep any male technical help more than a year before they asked for a transfer or just quit. They decided to try a female because everyone knew that no one would hire a female away from them. That afternoon I stood at a blackboard doing math problems, Moore diagrams, and answering wonderful questions such as whether I was going to get pregnant and quit. Thus began my six years of hell with M. King Hubbert.

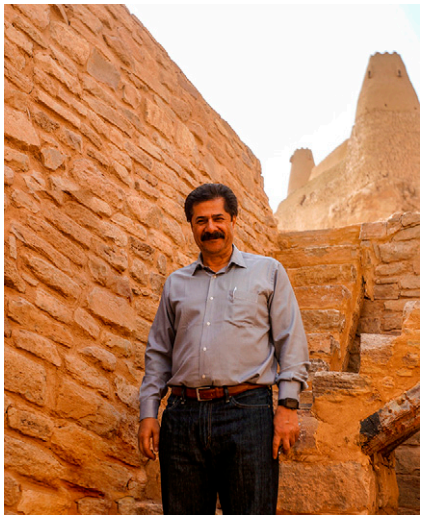
I do want to say that I learned so much from Hubbert. He was associate editor for both AAPG and GSA and I had to read all the manuscripts, check their grammar, redo the authors' math to the second decimal place, and look up every citation. Thus, I was equipped to become the editor of three Houston Geological Society publications on deltas. I also learned to cool an empty beer can to the right temperature to slide down a glass plate to prove Hubbert's theory of overthrust faulting, to go to AGI each year to get the production figures and estimated reserves in order to once again do the log normal curves on a huge Bell computer to prove that domestic oil production would reach its peak in 1973 (Hubbert Curve), plus much, much more.

Hubbert also insisted that I join the Houston Geological Society, AAPG, and GSA. My across-the-hall neighbors were Rufus LeBlanc and E.H."Rainey" Rainwater. Before they would sign my applications as sponsors they explained that as a member of an all-volunteer society it was my duty to volunteer. My first job for HGS was to read new books and review them for the newsletter. I was the editor of the field trip volume for the GSA the year that Hubbert was president of GSA and, of course the technical program editor for AAPG in 1971. It all mushroomed from there.

I first served on a student-oriented committee when Jim Hartman asked me to join the newly formed Student Chapters Committee. I was the HOD delegate from the PESGB in London at that time and Jim wanted to make students chapters a worldwide committee. I receive so much in return when I work with the students. They are the future of AAPG and we need them. What I am most proud of is my 21 years serving on the Student EXPO Committee. When YPs, and not so young members, come up to me at meetings and thank me for helping them get their first job I am so glad that I have made students my lifework. I have always made it mandatory for the Rice Student Chapter officers to serve on the EXPO Committee. I also draw from the University of Houston chapter, the Stephen F. Austin University and Texas A&M University chapters. Many of these students and the students that have attended EXPO have gone on to other AAPG committees after graduation. One is even now on the EC. I challenge each of you to make sure that your company becomes a sponsor of the AAPG Student EXPO and hires an intern or two or more and then a full-time employee.

None of my years of volunteer work would have been possible without the support of my husband, Doug. He has made me accept positions through the years when I have been reluctant, but was so glad that I did later on. I have made so many friends through the years because Rufus and Rainey insisted that a member of any organization must also be a volunteer. I also want to thank the HGS Nominating Committee with Sarah Stanley, chair, and Rosemary Laidacker and Judy Schulenberg for nominating me Last, of course, most special thanks go to John Shelton for being my oldest (in time) peer from the Shell days and writing my biography. His very special wife, Doris, has seen us through many arguments that were always in good fun in the end.

Martha Lou Broussard



SA'ID AL-HAJRI
Honorary Member Award

Citation—For visionary leadership in petroleum geoscience, generously-shared business acumen, and an active passion for developing the diversity, globalization, and success of AAPG.

Sa'id Al-Hajri was born and raised in Dammam in eastern Saudi Arabia. He spent his childhood helping his father run the family business and developing interpersonal skills rooted in hospitality, honesty, trust, and vision for the future. He became fascinated with the rocks, dunes, plants, and animals of the desert and archeological evidence of past residents. Sa'id spends many winter weekends exploring the deserts of Saudi Arabia, writing articles on the archaeology of Saudi Arabia, and volunteering for digs and environmental protection campaigns.

Being a stellar student, Sa'id represented his schools in many science and literature competitions in his early years, in one such contest appearing on national television! He focused on math and physics in high school, but his passion for exploring the outdoors drew him to geology in college. Sa'id received his B.Sc. in geology from King Fahd University of Petroleum and Minerals in Dhahran and his M.Sc. in geosciences from Pennsylvania State University. He began his career with Saudi Aramco as exploration geologist, received Saudi Aramco's highest technical award for exploration in 1992, and progressed to group leader, chief geologist, and chief explorationist before assuming his current role as manager of the Geological Operations Department. Along the way, he furthered his education with an M.B.A. degree from Hull University, United Kingdom, and the Program for Executive Development at IMD International in Lausanne, Switzerland. His advancement within the Aramco organization is a natural result of his prowess as geologist, his management ability, and his adeptness at leading change without resorting to his taekwondo skills!

Sa'id has been instrumental in many large discoveries and successful field delineation programs. He is regarded as an authority in the Paleozoic palynology and stratigraphy of the Middle East and North Africa, and therefore is called upon as a referee for international journals. Recently, he has been speaking about the geology and hydrocarbon basins of the Middle East, including "Landmark Discoveries of the Last 100 Years – Middle East" at the 2017 AAPG ACE.

Beyond his work for Saudi Aramco, Sa'id works tirelessly in many volunteer roles. Some of these roles are not visible in the United States, but are extremely important to petroleum geoscience and AAPG. He has contributed steadily to AAPG, the Middle East Region, and the Dhahran Geoscience Society (DGS) through service as DGS 2004-2005 professional development chairman, 2006 DGS president, 2013-2015 Middle East Region president, and 2015-2017 Visiting Geoscientist Program coordinator for the Middle East Region. Sa'id was instrumental to the success of the GEO 2014 conference in

Bahrain and an active member in later GEO Executive Committees. He cochaired the highly successful AAPG ICE conferences in Istanbul (2014) and London (2017) cohosted by the Middle East and European Regions. In addition to AAPG, GEO, and IPTC, Sa'id has been vital to the initiation of the Lebanon International Petroleum Exhibition, the Northern Arabia Conference, and collaboration with Society of Exploration Geophysicists, European Association of Geoscientists and Engineers, and Society of Petroleum Engineers.

Sa'id also has been a dedicated volunteer and judge for the Imperial Barrel Award program for years, both for the Middle East Region and for the global finals.

As president of the AAPG Middle East Region, Sa'id has changed AAPG for the better by diversifying the Middle East Council to better serve all parts of the Region, by implementing annual business and strategic plans to ensure that Region meets goals for AAPG and for dissemination of petroleum geoscience, and by improving the development of Geosciences Technology Workshops for the Region. Under Sa'id's six years of leadership, the AAPG Middle East Council launched the Middle East Region Awards. Significantly, in these positions, Sa'id has been a champion for diversity, ensuring that all companies and societies within the Region are engaged in leadership and that Young Professionals and women serve in important volunteer roles. Behind the scenes, Sa'id plays an important role in encouraging Young Professionals to join, volunteer, and conduct themselves according to the standards of AAPG.

Sa'id has been serving since 2015 as the Chairman of Middle East Advisory Board, which is charged with providing strategic direction to the AAPG Middle East organization, nominating council members, and choosing suitable candidates for regional and international awards.

Perhaps most important is Sa'id's work in cultivating future geoscientists. He spearheaded an outreach program that included university visits to engage students, faculty, and corporate executives in Abu Dhabi, Jordan, Kuwait, Oman, and Saudi Arabia. Sa'id is encouraging younger students to study geology by working to include geoscience in the high school curriculum.

Any citation of Sa'id would be incomplete if it did not bring attention to his personal and professional characteristics that make him a magnet for AAPG. He is modest and respectful. He speaks softly but authoritatively. He always works well with volunteers and inspires confidence as a leader. He is passionate about geology, education, making the world a better place, and never letting a visitor leave Saudi Arabia without a lifetime supply of the world's most flavorful dates. All of these characteristics reflect the genuinely good character of this man, who we are so fortunate to have as our AAPG colleague. Therefore, it is appropriate to recognize Sa'id Al-Hajri with the Honorary Member Award.

Gretchen Gillis

DONNA ANDERSON
Honorary Member Award

Citation—In recognition of her leadership and educational contributions to the Rocky Mountain Region and the AAPG.

The AAPG Honorary Membership Award is perfect recognition for Donna Anderson's ongoing endeavors to be a contributing member to the geologic societies that have made a difference in her career, and to make a difference in the lives of those young professionals coming after her. Never one to stand by and watch others do things, Donna wanted to get involved and stay involved, from leadership roles to attendance at meetings and field trips.

In her leadership positions Donna has recognized and cultivated the talent of others. Whether it was encouraging them to take on new leadership positions that they had not foreseen for themselves or

pursuing career opportunities. Donna has always been a champion to her friends and colleagues.

Donna grew up in Southern California during the late 1950s the daughter of an electrical engineer and a devoted home maker. Surrounded by outcrops and oil derricks it isn't surprising that she chose to pursue earth science and geography at California State University at Fullerton (B.A. 1974). She put her education to use as an engineering geologist in Southern California working on wastewater treatment expansions, domestic water supplies, nuclear power plant site locations, and pipeline and irrigation projects.

Following graduate school at UCLA and an M.S. in geology (1980), focused on provenance and tectonics of the nonmarine mid-Tertiary of the Santa Maria Basin, she went to work for Mobil Oil in Denver. At Mobil she was a heavy-oil production geologist at south Belridge field in California, worked lease sales in offshore California as well as conventional exploration in the Willison and Powder River Basins and the Wyoming thrust belt. Ultimately, she served as an exploration supervisor and geologic advisor in Rocky Mountain plays.

The downturn of the oil industry and the closing of Mobil's Denver office opened the next door in Donna's career. She chose to pursue a Ph.D. at Colorado School of Mines doing field work in the Hornelen basin of Norway studying the sedimentary responses to base-level change in linked alluvial fan, lake, and braidplain strata.

Having finished her Ph.D., Donna jumped headfirst into consulting for numerous companies in the Denver area. During this same year she held her first office at the Rocky Mountain Association of Geologists (RMAG). Although the companies she consulted for were in Denver (1997-1999), all of the work was outside the United States, as the Rockies were experiencing ultra-low oil and gas prices. It wasn't until 2002 that she began to consult again in the Rockies.

Simultaneously with her consulting career Donna became involved in research and teaching at Colorado School of Mines. Research at Mines has focused on various clastic systems—from turbiditic deposits of the Brushy Canyon Formation, Lewis Shale and Prairie Canyon Member of the Mancos Shale, to fluvial/deltaic architecture of the lower Mesaverde group and lower Mancos shale. Today her research focus is back to the primordial past of the Cambrian deposits of the central Rockies.

Donna's final professional transition came in 2006 when she went to work as a geologic advisor for EOG Resources in Denver working unconventional tight gas/oil plays. While working at EOG she continued as an associate research professor at Mines teaching and advising students.

Donna has served as president for RMS-SEPM, RMAG and RMS-AAPG, she has also served and remains active on their boards, various committees, and their associated foundations. She has received Distinguished Service awards from RMAG, RMS-AAPG and AAPG and is an honorary member of the RMAG. Donna served as the technical program chair for the 2015 ACE in Denver and has also served numerous other AAPG committees. Donna continues to serve the geologic community as a researcher, teacher, and mentor on a local and national basis today.

Mary Carr

Response

I am deeply grateful. Honorary membership in the AAPG is an unexpected and humbling recognition, especially when I look back over a twisting career that began 50 years ago.

Growing up in Southern California, geology and oil fields were all around me, and my mother and aunt nurtured my excitement for understanding the landscape. When I started college in fall 1969 at California State University, Fullerton, I took my first geology course. At Thanksgiving dinner that fall, my grandfather let me know in no uncertain terms that women had no business in science. Taken aback, I took that as a challenge to do the opposite. I also told my dad, an electrical engineer, whose response was, "You can do anything you want to do." The upshot was that I completed a double major in earth science and geography with a minor in Spanish, graduating with High Honors in 1974 and receiving an award in science and mathematics. I couldn't exactly decide between social science (human dimension) and physical science, so I did both. But my passion was geology.

During my undergraduate education, I had two encouraging women geology professors: Margaret Woyski and Dorothy

Stout. On the flip side, I interviewed with Union Oil of California at the AAPG convention in Anaheim, California in 1973 and was told point-blank that I could become a geological secretary, but never a geologist. An interview with a US Geological Survey geologist at the same convention was only slightly more encouraging. I also recall a geologist from Chevron Research in La Habra, California telling me in 1976 that women had no business in geology, let alone in the oil field. The naysayers were wrong, though.

With only a B.A. and no undergraduate field-camp course, I worked my way into a true geology position by being an unabashed job-hopper, having four jobs in 4 years with engineering geology firms in Southern California. I changed jobs by networking at local AEG meetings, being an officer in the South Coast Geologic Society, and having great male mentors. One of my mentors convinced me that I absolutely needed an M.S. in geology to advance my career. Between him and my supportive, then-new husband Larry, I went to UCLA and made a huge intellectual leap while working on an M.S. thesis on western California geology under Clarence Hall.

The UCLA experience took me and my husband to Denver in 1980 for my first job in the oil patch with Mobil Oil Corporation, initially to work on an offshore California lease-sale adjoining my thesis area. The rest is history. I fell in love with the oil and gas industry. It combined everything I liked—tectonics, structure, sedimentary geology, fluid flow, working across disciplines with engineers (I inherited those genes from my father), and working in groups for a common goal. At Mobil, I advanced to becoming a supervisor in 1986, just as the industry began a precipitous downturn. Suffering from layoff stress, I became a geologic advisor in 1988, working the Wyoming thrust belt, until we turned out the office lights in 1992.

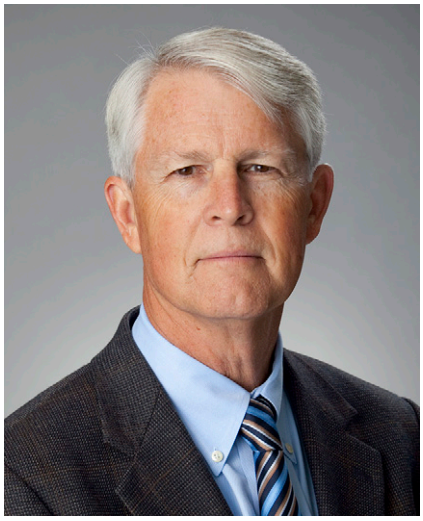
The sustained industry downturn became a life-changing opportunity to re-educate. I entered a Ph.D. program in stratigraphy at Colorado School of Mines, which was like going back to the candy store. Everything that I discovered and enjoyed at Mobil became a platform for deeper learning and intellectual pursuit. I embraced a minor in petroleum engineering, combining those courses with rigorous sedimentary geology coursework and a field-based stratigraphy dissertation in western Norway under the mentorship of Tim Cross. Upon graduation in 1997, another downturn year, I consulted on overseas oil and gas projects until work completely dried up in mid-1999. I returned to Mines as a research professor in 2000, as part of a team conducting stratigraphic field work in west Texas. Returning to part-time consulting in 2002 as tight-gas plays went crazy in the Rockies, I also taught sedimentary geology for petroleum engineers for the next 5 years and PE field camp in northwest Colorado for 9 years. I tried my hand at research grants, which were few and far between in those years. I advised or co-advised eight M.S. students on applied sedimentary geology theses between 2003 and 2011. As an industry upturn began in 2006, EOG Resources hired me as a permanent part-time geologic advisor, where I retired in 2015. Being on the ground floor of unconventional "shale" plays in the Rockies, I leveraged all of my prior experience and finally became an oil finder. Concurrently I sustained a pro-bono relationship with Mines as a research professor in geology, where I continue today as an affiliate faculty member, teaching graduate courses and serving on thesis committees.

Going back to 1990, I had time and energy to become involved in professional groups, starting with the RMS SEPM in Denver, becoming president in 1995. In 1996, I became the second woman member of a local geologic study group that fostered professional involvement. From 1997 to 2005 I became heavily involved with the RMAG and RMS AAPG as committee, board member and president for both groups. My husband encouraged these endeavors, uncomplainingly supporting me in every way, with a minimum of eye rolling when I said I was running for another office. In 2005 Pete Rose recruited me to be co-chair of the Education Committee, beginning an active involvement with the AAPG. My favorite AAPG experience was on the Advisory Committee, where I felt we made a big impact by recognizing members and setting the officer slates, beginning an advocacy for women and non-United States members. Being the technical program chair for the 2015 ACE in Denver was something I had long wished to do.

That conference was successful, even as it prefaced another deep downturn in the industry beginning in mid-2015.

AAPG, its affiliated societies, places I've worked and studied, and people have played an influential part in my career journey. I only have one piece of advice. Opportunity favors the prepared mind: seize it when you see it.

Donna Anderson



JOHN ROBINSON
Honorary Member Award

Citation—To John Robinson, for his immeasurable lifelong service to the AAPG and his exceptional scientific contributions toward understanding natural gas resources.

John Robinson's contributions to AAPG and to the energy industry are truly remarkable. He is a skilled scientist, an astute businessperson, and a true explorer. He is an author, an editor, and he is an excellent technical collaborator. He has served as the general chairperson of the annual meeting; so almost everyone can attest to his gentle leadership style, his measured judgment, and his exceptional ability to listen. Beyond John's immeasurable contributions to this association, his remarkable skills led to one of the largest onshore natural gas fields developed in the last 30 years. In many professional forums, John has described the teamwork that is necessary to identify and develop such an important American asset. The members of this association are very well aware of the reason that John is worthy of the Honorary Member award: he is the consummate geologic teammate.

John was born in Riverside, California, and was raised on a citrus and avocado ranch. His early interest in geology was inspired by the presence of several pegmatite dikes that cropped out on the hills adjacent to the ranch. An early geological influence was Robert Southwick, a general geology instructor at Riverside City College, and John's brother-in-law, Randy Ashley, also a graduate of San Diego State University, who encouraged John to major in geology. After receiving his Bachelor of Science degree in 1973, he continued his studies at SDSU, completing a Master of Science degree in 1975 with a thesis on the Mexican state Baja California Sur.

John went to work for Amoco Production Company in Denver in 1975 and worked on the Arctic Wildlife Refuge on the Alaskan North Slope, Kodiak Island, and the Denver-Julesburg Basin. In 1979, John began a 10-year period with Forest Oil Corporation where he worked on exploration projects throughout the Rocky Mountain region. Forest's discovery of Wyoming's Henry Field was an early highlight in his career.

In 1989, John began a doctorate degree program at Colorado School of Mines. While attending Mines, John worked as a volunteer at the US Geological Survey, where he met his mentor and advisor, Peter McCabe. Peter was an inspiration to John and encouraged him to work on a project to describe the Salt Wash Member of the Jurassic Morrison Formation, a large fluvial system in southern Utah. Their work describing the evolution of the Morrison Formation and its utility as a reservoir model for high net to gross fluvial systems, was published in the *AAPG Bulletin*, and awarded the Wallace E. Pratt Award for the best paper in 1994. During this time, John served as visiting scientist at Shell Exploration and Production's research lab in Rijswijk, the Netherlands. He also presented his research on the Morrison Formation at BP's research facility in Sunbury on Thames.

In 1994, John joined Snyder Oil Company and worked on tight gas exploration and development projects in Wyoming and Colorado. This work led to the development of the giant Jonah Field in Sublette County, Wyoming. The primary owners of Jonah Field, McMurry Oil Company, hired John in 1998 to direct the geoscience program of this rapidly expanding, multi-TCF gas field. In 2000, McMurry Oil sold their Jonah interests to Alberta Energy (now Encana). After the sale, John was vice president for McMurry Energy Company until the sale of their assets on the Pinedale Anticline to Shell Oil. All of these projects

employed a multidisciplinary approach utilizing petrophysical, geophysical, geochemical and petroleum engineering techniques. In 2004, John formed North Ranch Resources where he continues to explore for oil and gas and has been involved in successful programs in the Williston, Powder River, Green River and DJ Basins.

John joined AAPG in 1975. He has served the organization in various roles. These include associate editor of the *AAPG Bulletin*, member of the House of Delegates, Rocky Mountain Section representative, and general chair of the 2015 AAPG Annual Meeting in Denver. He is a two-time recipient of the Wallace Pratt Award for the best paper published in the *AAPG Bulletin*. He has received the AAPG Distinguished Service Award. He is a Certified Professional Geologist by Division of Professional Affairs and served on their Board of Certification for 13 years. He is past president of the Rocky Mountain Association of Geologists, past president of the Rocky Mountain Section-AAPG, and past president of Rocky Mountain Section-SEPM. He is an elected Fellow of the Geological Society of America and is a member of SPE and the Wyoming Geological Association. He is a Registered Geologist in the state of Wyoming.

John has been married to Diane Dubree Robinson for 45 years. They have talented and impressive children: Sara, her husband Kevin, and Daniel, and daughter-in-law Erin. They have four wonderful grandchildren: Sam, Evan, Elise, and (of course) young John.

John has a deep love of the mountain west. He enjoys hiking in the mountains and the desert as well as boating on Lake Powell. While growing up in California, John developed into a talented volleyball player. John has organized volleyball teams that included many geologists. Some of these teammates included Scott Tinker, Keith Shanley, Steve Williams, Keenan Lee, Eric Nelson, and me. John was the team leader and, of course, the setter. It's the most challenging position on the court and all volleyball players know the function of a setter: to make everyone better. Likewise, for 45 years, John has been making everyone at AAPG better geoscientists. He is the consummate geologic teammate. This is why he is especially worthy of this Honorary Member Award. Congratulations and thank you John on behalf of AAPG.

Brian Richter

LINDA STERNBACH
Honorary Member Award

Citation—To Linda Sternbach, for her leadership on technical programs at AAPG Annual Meetings, the Gulf Coast Association of Geological Societies (GCAGS) and DPA video programs.

AAPG is pleased to recognize Linda R. Sternbach for her leadership on technical programs at AAPG annual meetings, the Gulf Coast Association of Geological Societies (GCAGS) and DPA video programs. I have known Linda since 1988 when we were both explorationists with ARCO Oil and Gas in Houston. She has consistently been a leader and volunteer at AAPG and Houston Geological Society organizing programs that inspire and instruct geologists. As she receives this AAPG Honorary Membership Award, Linda is currently vice president of Star Creek Energy, a consulting group investing in Gulf Coast and midcontinent exploration projects and offering G&G services using computer workstation mapping technology. Prior to joining Star Creek Energy in 2007, Linda was senior geophysical advisor at Oxy and Kerr McGee (2002-2006), a consultant for international and domestic exploration for Globex Energy, and other Houston-based companies. She started in the oil and gas industry in 1984 with ARCO Oil and Gas in Houston, working south Texas gas fields as a geologist.

Linda Sternbach grew up north of Philadelphia, Pennsylvania, and attended college in upstate New York at Syracuse University, earning a B.S. in geology. She received a geology department award as an outstanding undergraduate geology student, and was offered a scholarship to Rensselear Polytechnic Institute to do a master's degree in geology and petroleum

geoscience with Gerald M. Friedman, renowned carbonate expert. While in the M.S. program, Linda worked for a summer (1982) at Cities Service Research Lab in Tulsa, Oklahoma. This was a memorable short assignment because Cities Service was in the process of being acquired by Gulf Oil in a takeover battle. Despite a downturn in the oil and gas industry, Linda was able to get hired as an entry level geologist at ARCO Oil and Gas in Dallas, and then in Houston, starting in 1984. Between 1984 and 1993 Linda mapped Frio-Vicksburg plays on ARCO properties in south Texas, and later worked offshore lease sales in the Gulf of Mexico. The work environment of oil and gas exploration was changing to become more computer-aided and guided during the mid-1980s. Linda joined the local Houston Geological Society in 1985 in order to stay up to date on exploration analysis techniques and take continuing education classes in computer mapping.

The oil and gas industry recession of 1993 led to large scale layoffs of staff in Houston. Both Linda and I ended up getting severance packages from ARCO Oil and Gas and we looked for jobs at the same time. Linda was able to get a long-term consulting assignment at Pennzoil in downtown Houston to support lease sale prospecting and use sequence stratigraphy in regional exploration. Map making was being transferred from manual contouring to computer workstation computations during the 1990s. Linda was an early adopter of this changing workflow and soon learned Landmark and Geoquest computer software to integrate synthetic seismograms and interpret seismic. While at Pennzoil, she became involved in subsalt mapping and prospecting on the Louisiana shelf. This was very challenging as few geoscientists could see any reflectors under the salt and had a lot of theories on the age of the subsalt sediments. After leaving Pennzoil, Linda started a company called "3D Advantage" and worked as a geophysical mapping consultant between 1995 and 2000. She bought her own software license to a PC program called Seismic MicroTechnology (SMT) which included the seismic mapping and synthetic modules. This software was installed on PCs with a USB key. The SMT mapping technology led to Linda working at Globex Energy, an international exploration company with leases in Australia, Equatorial Guinea, Cameroon, and the Philippines. Working at Globex Energy involved all aspects of exploration including loading seismic data, importing and integrating wells, and coordinating seismic acquisition and processing. Globex sent Linda on international trips to Cameroon, Equatorial Guinea, the Philippines and to Europe attending partner meetings and data rooms. Globex was acquired by Marathon in 2000. Linda and I reconnected shortly afterward when she accepted a geophysicist job at Kerr McGee working deep water offshore Louisiana. It was great to be able to work with Linda again. Kerr McGee was devoted to purchasing seismic data of all kinds, including state of the art pre-stack seismic data, and depth-converted seismic to use in subsalt mapping. KMG provided access to technology for DHI, amplitude analysis, pore pressure prediction, and methods of hydrocarbon risking. After two years in the Gulf of Mexico group Linda to Kerr McGee International, working on offshore Trinidad. KMG merged with Anadarko in a surprise merger in 2006, and Linda took the opportunity to move to Oxy in Houston to work on international projects in Africa. During this time, she had a memorable trip to Sanaa, Yemen (2006) to visit the Sanaa office, and look at Oxy's properties in Yemen, hoping to drill a well and shoot some two-dimensional seismic lines, but alas, Yemen was not politically stable.

During the 1990s, Linda became very active in the Houston Geological Society because the continuing education classes and monthly meetings offered a chance to meet people working international projects. She served as *HGS Bulletin* editor (1997-98) and on the HGS Board as vice president and president. She was the chair of the AAPG Geophysical Integration Committee and organized a technical session on geology and geophysics for the 2010 AAPG annual meeting in New Orleans with members of the committee. She pioneered video recording of the DPA Playmaker programs. These videos have been uploaded to AAPG on the DPA site at https://www.aapg.org/resources/videos/dpa/playmaker. The videos have proven to be an important cost-effective resource for geoscientists.

Membership in AAPG has been very important in Linda's leadership and technical career progression. It has made her a more successful explorationist and the personal network she grew helped her job transitions. She has consistently been in involved in AAPG matters at both a high level and the most mundane. Linda has used her domestic and international experience to

successfully coordinate many AAPG technical programs including the ACE 2011 annual meeting and the GCAGS 2015 and 2019 technical programs. For these contributions Linda Sternbach has earned and deserves to be AAPG Honorary Member.

John J. Jordan, Jr.

PETER WIGLEY
Honorary Member Award

Citation—To Peter Wigley, ingenious, imaginative, creative geoscientist, the leader in digitization of analog and textual geoscientific data and in the origination and development of the AAPG Datapages digital library of articles and of illustrations (DEO-GIS).

Peter Wigley is a Cornishman, from Penzance in the county of Cornwall, at the southwesternmost tip of the United Kingdom. As a child he became interested in geology when searching old tin and copper mine spoil heaps for rocks and minerals. This interest, encouraged and supported by his father and Bob Quixley, an inspirational teacher at the Humphry Davy Grammar School, led Peter to study geology at college. He received a B.Sc. (1969) in geology and a Ph.D. (1972) in carbonate sedimentology, both from University College London. Part of the research for his Ph.D. was conducted while he participated in a joint project in the Caribbean involving the Hydrographic Office of the Royal Navy and other United Kingdom universities. His early academic publications include papers on carbonate facies and strontium isotopes. In 1973 he joined ERICO, Inc., a geological consulting company, founded by Paul McDaniel, who pioneered the concept of nonexclusive geological studies. The decision to join a start-up, one-person company was the beginning of a career characterized by innovation and successfully met challenges. For almost 20 years, Peter worked on numerous geological projects in the North Sea and Mediterranean regions, Africa, Middle East, and Southeast Asia. In the early 1980s, Peter's interest in digital applications in geology expanded to include petroleum exploration and production data as he initiated an ambitious project to digitize all released North Sea analog well logs. He also managed other projects, and in 1985, he became managing director of ERICO PI, with the purchase of ERICO by Petroleum Information.

Wigley became an independent consultant in 1991, working for Maersk, Masera, Inc., and Petronas, among other companies. Peter was an early adopter of geographic information systems (GIS), now the standard in the industry in digital illustrations, especially maps and cross-sections. His early interest in GIS was manifested by the digitization of South American and African geological maps.

Soon after he became a consultant, Peter and Charlie Hewlett cofounded Lynx Information Systems Ltd, a company that reconstructs seismic traces as SEG-Y from scanned paper records. Later at Lynx he built a new GIS-based business. Peter retired from Lynx in 2015.

In 1989, for the AAPG Executive Committee, Peter Wigley demonstrated digital textual material (from an annual developments issue in the *AAPG Bulle*tin) as a model for digitizing AAPG publications. He was invaluable in the initiation and development of what has become AAPG's Datapages digital library. Wigley has advised Datapages for 30 years, with indispensable guidance. His primary focus during the last 20 years has been in regard to GIS applicable to AAPG publications. Peter is a member of AAPG Datapages Board of Directors and has served on the GIS Publication Committee. Peter worked tirelessly for Datapages to launch a GIS project that would convert illustrations, with geographic connotation, in order to provide a service with online web access to those illustrations, together with the respective articles. As a result of that effort, DEO-GIS now features over 50,000 georeferenced maps, along with some 15,000 objects (cross sections, seismic sections, well logs, etc.). As a volunteer, he is the director of this ever-expanding Datapages DEO-GIS. In total, Peter has played a very large, leading role

in allowing users (AAPG members, academic faculty, and students, along with others interested in petroleum-related publications) access to data by both word and geographic searches. The library is now at our fingertips!

Peter has been an active participant in AAPG events in the United Kingdom since 1976 and in the GSL and the Petroleum Exploration Society of Great Britain (PESGB). With the latter he has been very active in the joint PESGB-HGS conferences on Africa.

Peter is also the editor of the Exploration Fabric of Africa Project (EFA). EFA is a not-for-profit, online GIS of Africa containing digital geological, gravity, and magnetic maps, together with a wide range of other hydrocarbon-related data. The project was established in memory of Ed Purdy who published the first exploration fabric map of Africa (EFA) in the 1980s. As a young research student in 1970, Peter first encountered Ed and later worked with him on various projects, including EFA, which has had more than 50 sponsors since it started in 2009. It has also been provided to a number of universities at no cost.

In addition to his voluntary work for AAPG and EFA, Peter has worked extensively with GSL. As part of their bicentenary celebration in 2007 he helped build a spatial index of all their maps and earlier developed a scanned archive of Sir Roderick Impey Murchison's correspondence. He has a long-standing interest in William Smith's maps; in 2007 he produced a DVD of his maps, and he is also the editor of the William Smith's maps interactive website (Strata-Smith.com). He has published articles on William Smith with AAPG and the Geological Society of America. In 2019, in conjunction with the Natural History Museum (London) and GSL, he compiled and edited a publication entitled *William Smith's Fossils Reunited* which brought together Smith's surviving fossil collection at the Natural History Museum and James Sowerby's fossils engravings, which are included in Smith's ground-breaking publication—*Strata Identified by Organized Fossils* (1816-1819). The book received support from Sir David Attenborough who wrote the foreword. Currently, Peter is researching material for a new book including Smith's geological achievements in Somerset (United Kingdom), with publication by Thames and Hudson in 2020. Somerset is widely credited as being the "Cradle of Stratigraphy." As part of this research Peter has recreated Smith's unpublished geological map of Somerset and has used high resolution LIDAR elevation and slope data to create three-dimensional models of Smith's maps.

Wigley is a fellow of the Geological Society, London. He received the Distinguished Service Award from both AAPG and GSL.

Peter is married to Caroline Wigley, biomedical researcher/medical educator. They live in Devon in southwest England. They have two married daughters and four grandchildren. Outside of geology he is interested in the opera and classic sport cars.

John Shelton

Response

I am delighted to accept the Honorary Member Award from AAPG. I have been a member since the mid 1970s, not long after I joined ERICO, a consulting company owned by the charismatic Paul McDaniel.

I started my career as a young man with a Ph.D. who thought he knew everything but in fact knew nothing. It was through AAPG short courses, field trips, and presentations that my education continued and developed. I have also had the privilege of working with talented AAPG geologists such as Konrad Habicht, Lloyd Pray, Ed Purdy, James Lee Wilson, Mateu Esteban, Bill Ward, Mike Brady, and Bob Weissmann. Above all, any success I may have achieved as a geologist has been primarily due to my mentor and friend, John Shelton.

From the time of my graduate studies at University College London I have been interested in computer applications to geology, initially with the IBM 360 leviathan and later the famous DEC VAX machines, which an indulgent Paul McDaniel let me purchase at great expense for ERICO. The evolution from mainframe to mini-computer to desktop-computer took computing away from the "digital alchemists" and into the hands of explorationists. My interest in digital well logs, documents and maps led to my association with Datapages and to GIS, which in the late 1980s was a concept virtually unknown in our industry.

My current preoccupation is the work of the English geologist William Smith (1769-1839). In

addition to making one of the first geological maps of England and Wales, Smith pioneered the science of stratigraphy, something which now every geologist takes for granted. Smith was a practical working geologist, not an academic. Similarly, in our own time, major advances in seismic stratigraphy and sequence stratigraphy have been due to commercial earth scientists mostly working in the oil and gas industry not from those in the marble halls of academe. I have spent my whole working life in the oil and gas industry; an industry that has been much criticized of late, in my view unfairly. There is no doubting the importance of renewable resources but I believe oil and gas will remain an important part of the energy mix for decades to come. For my part, I am proud to have been part of our industry and proud to be a member of AAPG.

Peter Wigley

WILLIAM D. ARMSTONG
Norman H. Foster Outstanding Explorer Award

JESSE SOMMER
Norman H. Foster Outstanding Explorer Award

Citation—To William D. Armstrong and Jesse V. Sommer in recognition for their contributions leading to the discovery of the Pikka Nanushuk field. In addition to achieving super-giant status, the Pikka field established the Nanushuk play and revitalized exploration on the North Slope of Alaska.

"Running the gauntlet" is what we call it internally. This means, when you have a new geologic idea put together and fully baked you present it to the Armstrong team. This is about as much fun as a root canal and a colonoscopy at the same time. You must be ready. All aspects of your idea need to be investigated, with all risks mitigated to the extent possible. All seismic has to be interpreted, all wells evaluated, all cuttings, cores and thin-sections examined, analogs assembled from around the world, full-field and single-unit economics run, petrophysical analysis of all pertinent well control completed, full evaluation of all decline curves of analog wells, etc., etc. It is a scrum, knives out, full-contact geology. A marathon technical session and oil business school all rolled into one. All of this before ever considering the purchase of a lease. Bill's theory being, "If you can get a prospect through the gauntlet then you will know your project's strengths and more importantly you will know it's weaknesses." He had learned that surviving this gauntlet would make all subsequent presentations to potential partners far easier to survive. Anyone can drill their own deals but selling a piece to a competitor that has their own exploration staff was a completely different challenge. Getting the team to buy into an exploratory concept was one thing, but getting someone else to buy in, that was a whole other animal. Bill had learned this the hard way.

After growing up in the oil patch in west Texas (Bill's dad was a partner in the independent BWAB), Bill went to Southern Methodist University to study geology, met his wife in geology 101, got a Phi Beta Kappa key, and was president of the student chapter of AAPG. Not long after graduation, with the price of oil falling like a knife, Bill started his own one-man exploration company in the hayloft of his 100-year old barn/garage (eat your heart out Steve Jobs). The year was 1985 and geologists were being laid off in droves. Most people would say that starting an exploration company amid a thundering herd of companies

fleeing exploration would be ill advised, but Bill is not most people. As Bill would say, "when you have nothing you have nothing to lose," or "you can't fall out of the basement." With no backing, no family money, no bankers who would lend him a dime, with nothing more than a love of the oil business and a little self-confidence Bill started putting drilling prospects together. He quickly learned that every deal he assembled needed to be good and needed to be sold because if not it would be his last as his entire net worth was tied up in the deal. That was how he learned the importance of "running the gauntlet" even though he had to run it by himself or at the dinner table while presenting to his wife. It turns out Bill was quite good at finding oil and gas on his own, but he has always told me his best skill was finding talent. He found most of his fellow workers by running the gauntlet at someone else's office. He would pitch a deal with full knowledge of the weakness of his own prospect. The person across the table who could land on the prospect's weakness was someone to remember. That is how he met Jesse Sommer.

Jesse Sommer, my mentor, started his career at Exxon in 1982 after getting a M.S. in geology from Arizona State University. His love of geology and of searching for buried treasure began much earlier, the result of spending time with his father panning for gold in the foothills of the Sierra. When he met Bill, Jesse already had a 15-year track record as an oil finder and was working for BTA Oil Producers, an independent company out of Midland. He is meticulous and can be exasperating to show a deal to as he is exceptionally good at understanding the key risks of a prospect, but also the weaknesses of the geoscientist presenting the deal. In 1996, Bill was pitching a tight sand gas deal in the Green River Basin to BTA. Jesse immediately found the key risk element of the play. Bill knew at that time he was going to hire him, even though he did not have enough money to pay his salary. Incidentally, that prospect was a discovery although BTA did not buy into the deal.

Every one of Armstrong's "band of brothers," Ed Kerr, Jeff Lyslo, Matt Furin, Kevin Dorrington, Ed Teng, Nate Lowe, and myself were hired essentially the same way. Our group has found oil and gas in the Michigan, Uintah, Powder River, San Joaquin, San Juan, Green River, Paradox, Denver-Julesburg, Cook Inlet, Williston, Western Canadian Sedimentary Basin, Gulf Coast, Wyoming/Utah Overthrust and the North Slope of Alaska. We have had many successes as well as some spectacular dry holes along the way.

"Running the gauntlet" is fun, nerve wracking and more than a little bit scary. At the end you can see into the mind of our company based on the sort of questions that always come up once a prospect has survived the gauntlet, "why are we doing this?", "will this be fun?", "do we really want to spend a lot of time on this?", "can this prospect make a difference?", "who is going to buy this?", "if this doesn't make spectacular sense economically why should we bother?", "if we can't make sense of the economics on the back of a napkin is the prospect too skinny?" (this may explain why we have avoided most unconventional plays). All these questions were asked before diving into the North Slope of Alaska. Everyone told us not to go to the North Slope. All the industry experts would tell us "the North Slope is played out", "it's a home for majors only", "the arctic is too expensive", and most importantly that "no independent has ever made money there". So much for the "boo-birds" as we have found nine separate oil pools in excess of 100 million barrels recoverable, including the discovery of the super-giant Pikka Nanushuk field in 2013.

On a chilly winter night in 2013, with LWD logs streaming into everyone's home computers, we watched as our well drilled into the Cretaceous Nanushuk Formation on the North Slope of Alaska. By midnight we had drilled around 40 feet of high-quality oil-saturated sand and went to sleep content with a nice little discovery in our secondary objective. Much to our surprise, we awoke the next day to more than 750 feet of marine sandstones 4,000 feet below the tundra with up to 29% porosity and 600 md, filled with light sweet crude. In other words, a unicorn. Several years of delineation and testing have revealed a 35-mile long stratigraphic trap with over ten billion barrels of oil in place. The super-giant Pikka Nanushuk discovery has not only breathed

life into a super basin on its last legs but has kicked off one of the best oil plays on the planet.

I've been told by those on the outside that they look at Armstrong as a company of wild men swinging for the fences, but nothing could be further from the truth. Armstrong is a company of hard-working, level-headed geoscientists that are good at assessing risk, not afraid to roll the dice when we see something we like and (almost) always having fun. Bill, a romantic at heart, says this is what the oil business is all about.

Colby VanDenburg

Response of William D. Armstong

Thank you AAPG for this incredible honor. As I took the call informing me that Jesse Sommer and I were going to receive the Norman H. Foster Outstanding Explorer Award my head was filled with a flood of emotions:

Surprise: You mean somebody was paying attention to what we were doing? Our company ethos has always been to keep our heads down and to work hard. There are great oil and gas explorers all over the world that have made amazing discoveries, so why us? Regardless, I am very appreciative to AAPG for noticing Armstrong Oil & Gas, Inc.

Humble: I realize that AAPG cannot give this award to an entire oil and gas team, so in lieu of that, I would like to thank my amazing band of brothers who were all part of this Pikka discovery and more. I have been privileged to work with the most incredible group of dedicated, smart, creative, hardworking people: Ed Kerr, Jesse Sommer, Jeff Lyslo, Matt Furin, Patti Reed, Kevin Dorrington, Colby VanDenburg, Ed Teng, Nate Lowe, Meredith Groshart, Jessica Schmidt, Shanna Lucero, and Doran Adams. We all relied on each other, and we always had each other's back. We could write a book about all that we have experienced along the way and the wonderful career we enjoyed together. My wife deserves her share of this award too. Forever my "secret weapon", she understands and appreciates the science (we were SMU geology graduates together in 1982); has been totally supportive through some dismal oil markets; lived hand to mouth and deal to deal for decades; suffered through plenty of disappointing dry holes only to regroup and be willing to do it all again; and mostly, she raised three great kids all while keeping the house happy. The greatest trade of my life was the day I talked her into marrying me.

Remorse: I am sad that my father is no longer alive, as he would have enjoyed the award. My dad loved the oil business; he was a hardscrabble wildcatter from Abilene (and later Denver) who experienced plenty of dry holes in his lifetime as well as his fair share of successes. His nightly stories and "lectures" over the dinner table had me hooked as a small boy about the romance of the oil patch—a business where you could create something out of nothing; where you could search for buried treasure and keep the treasure you find; where you could make discoveries that others had missed. The tales of rags to riches, then riches to rags again were timeless. There were numerous funny—no, make that hilarious—stories of tales from the oil patch. I didn't realize until later in life, how much I was learning about the oil and gas industry from hanging around my dad's oil buddies. They taught me to make sense of the capriciousness of success; to learn that the difference between a genius and a fool might only be a 40-acre offset; how to get over a dry hole; and how to manage a company in an industry that is always booming or busting. My dad showed me the importance of hard work, to be true to my word, to treat others with respect, and to always aim for a win/win solution.

Satisfaction: The Toby Keith song, "How Do You Like Me Now" comes to mind when I remember those people who tried to hold me back along the way: my petroleum geology professor who gave me one of my only "BS" in college; my first boss who chose not to promote me since he was sure I had "difficulty with closure"; and to the enumerable big/mid/small company "exploration managers" (many of whom would have difficulty finding oil in a 10W30 can) who turned down my wildcats. All of these people have been instrumental in keeping me motivated, so thanks should go to them. As difficult as these experiences were in real time, we should all have these challenging people in our lives to

force us to overcome these ill-fated fears.

Gratitude: Most importantly, I am grateful. I work in an amazing industry that does so many great things for the world. The oil and gas business has pulled more people out of poverty than any industry in history. Oil and gas provide affordable, reliable, clean energy to the world, and it is hard to imagine a world without this incredible product despite some ridiculous claims to the contrary. Without oil and gas, our world would be sicker, poorer, dirtier, uncomfortable, and divided. I am grateful that I won the birth lottery by being born in the United States, as America is a country that allows you to do what you love while encouraging entrepreneurship and rewarding you for those efforts. America is a country of rules and laws that for the most part gets out of the way of human achievement, but mostly, the US is a country full of generous, hardworking, supportive, and loving people.

Ain't life grand... Thank you AAPG! Keep Exploring!!!

Bill Armstrong

Response of Jesse Sommer

I am extremely honored and grateful to be the co-recipient of the Norman H. Foster Outstanding Explorer Award along with Bill Armstrong. One of the first things I did when starting my career in 1982 was to join AAPG. AAPG's numerous publications and conventions were invaluable to my development as an explorer. To now be honored by them is a gratifying experience.

Working in oil and gas exploration has to be one of the most rewarding careers imaginable. I've had the privilege to work with so many outstanding geologists and explorers throughout my career. My career started with Exxon in Midland Texas where I had great mentors in my first boss, Jerry Gilley and later role models such as David Jones, Steve Rose, Winnard Kothman and Bryant Williams. It was a tight knit community in Midland with incredible coworkers. I have many memories of friends like Rick Geesaman, Bob McDermott, Richard Barr, Joel Degenstein, and many others including our racquetball group of Ulrich Brunhart, Jack Lowry, and Paul Molnaar. We had a lot of fun and found a lot of oil and gas.

In 1990 I went from working as a part of a large team at Exxon to a six-person office at BTA Oil Producers in Denver. It was a learning experience to go from having the support of an organization as large as Exxon to working as a two-person team with a reservoir engineer. My engineering teammate there, Tom Tracy, proved that some engineers like to explore just as much as geoscientists. It was while screening one of his deals at BTA that I met Bill Armstrong. We hit it off immediately and one day while riding our bikes to work together he offered me the opportunity to come to work for him. At the time Bill had a two-person office, himself and Patti Reed, but had big ideas for conquering the exploration world. I jumped at the chance and never looked back. And what a ride it has been. I can't thank Bill enough for giving me a dream job and being a great boss, mentor and friend. Our original group of Bill, Patti, Ed Kerr, and Jeff Lyslo are the best people one could ever hope to work with. As the company has grown, I've had the chance to work with a great team, who Bill already mentioned in his response and I would like to add my thanks to all of them. I would particularly like to thank Matt Furin who I have known since our early days at Exxon when we would commute to work together in my little Datsun B210 (this image is a lot funnier if you know how large we were back then). Matt joined Armstrong a few years after I did and was responsible for getting us into Alaska. As the original team got older, we hired a couple of young guys, Colby VanDenburg and Kevin Dorrington, to eventually take over for us. In baseball parlance we hit it over the fence with these two guys and it has been my honor to work with them and consider them great friends. Both of them played a very significant role in the discovery and delineation of Pikka Field.

Finally, my wife Terri deserves a special mention and thanks. We met in college and she has been with me and supporting me through my entire career. She learned early about my obsession with exploring when we had to stop to do some mineral collecting on our way to our honeymoon destination. Little did either of us know at the time where

geology and exploring would lead us. Raising our daughters, Jen and Kim, who mean the world to me, and watching our family grow to include sons-in-law and grandkids is truly what life is all about.

Jesse Sommer

DANIELE COLOMBO
Robert R. Berg Outstanding Research Award

Citation—to Daniele Colombo whose unique set of technical skills, personal integrity and tireless work ethic has delivered practical applications and innovative developments from his research to a range of seismic and non-seismic disciplines, always with a geological objective in mind.

I've known Daniele Colombo as a colleague and friend since the mid-1990s when we both started working at Geosystem (Milan); at the time a privately owned and eclectic electromagnetics and gravity-magnetics services and software provider. Following a couple of years of obligatory, character-forming field operations – in the more Spartan corners of Italy, North America, the Middle East and Indonesia –faithful to his earlier Ph.D. work on the seismology of Costa Rica, Daniele drove the setting up of a passive seismic acquisition and processing group at Geosystem, successfully pioneering advanced processing methods to achieve practical long offset seismic technology in petroleum exploration, applied in the imaging of sub-thrust carbonate plays of southern Italy, north Oman, the Zagros and the Rockies. In parallel the technology was employed to quantitatively characterize high enthalpy steam production and development-generated microearthquake events at key geothermal resources in West Java and Sumatra; fortuitously meeting his wonderful wife, Lastri, there in 1997.

Leaning on the EM and GravMag base in Geosystem, while working on improving signal/noise separation in MT data processing, Daniele avidly followed a multiphysics approach to the modeling and interpretation of geophysics data, always with a geological objective in mind. This culminated in Daniele's team at Geosystem developing and implementing a multiphysics joint inversion engine (EM, GravMag, Seismic) funded by Eni during 2003-2005—a core asset in the sale of Geosystem to Schlumberger/WesternGeco in 2007. Daniele set up Geosystem's Calgary office in 2006 to expand the foothills-focused seismic processing business. Joining the Schlumberger world, Daniele became a key proponent of the WesternGeco's new, cross-discipline, integrated geophysics initiative, driving multi-physics depth processing uptake from the foothills to the gas plays below the Colombia River Basalts, and near-surface velocity improvements in the UAE and Saudi Arabia.

Daniele joined Aramco EXPEC ARC in 2009, tasked with setting up a multi-physics research and development group to address a swathe of Aramco's exploration and development imaging issues. He rapidly built up competence and technology, all the time working with the asset teams; depth inversion of marine EM and gravity data to unravel the complexities of imaging around the autochthonous and allochthonous salt of the Red Sea, subbasalt imaging in Al-Qurayyāt with ground EM; using heliborne EM to characterize the near-surface and improve deep reservoir imaging through joint depth inversion routines specifically developed at EXPEC ARC. Recognizing a key land three-dimensional seismic processing bottleneck, he led the development of data-driven routines to robustly address first break picking QC and automated velocity modelling. Over in reservoir engineering, the push to improve the recovery of bypassed reserves during decades of saline water flooding led Daniele to push the adoption of novel surface-to-borehole controlled source EM, requiring a complete development chain from proof-of-concept modeling, to addressing concerns of steel casing and pipeline EM interference, surface electrode resilience between time-lapse surveys, downhole access and sensor development. This culminated in the widely acclaimed baseline survey in 2017.

Daniele has provided the EM community leadership what I think is a unique set of technical skills, personal integrity and a proven can-do approach. His professional career choices span successful and productive periods at University department level and Corporate; both boutique and giant service providers (Geosystem, Schlumberger) and national champion scale (Aramco). At all stages Daniele has persistently used his solid theoretical grounding in commercial research and development projects to build expert and loyal teams and thus deliver practical applications across a range of seismic and non-seismic disciplines; projects that required strong interpersonal and team leadership skills.

Daniele's rich publication and patent record is truly impressive when compared with his peers; notable for the breath of methods and applications treated, including several cross-discipline approaches and the range of co-authors. During our overlap at Geosystem and Schlumberger (1996-2008) and later through common project work, Daniele could always be relied on to constructively defend scientific foundation over the natural market pressures on product capabilities and specifications. Daniele's extraordinary productivity, innovating and implementing multiphysics inversion and seismic processing technology across the spheres of exploration and production industries, married to tireless publishing of the rich portfolio of successful, illustrative case histories, has resulted in an outstanding contribution to the present and future geoscience community.

The international geophysics community is internally highly competitive, but I have never heard one of Daniele's colleagues or peers, past or present, speak negatively about his capability and achievements. I have no hesitation in providing a strong endorsement of Daniele's record of highly valuable contributions and support for the global geoscience community.

Stephen Hallinan

Response

I am extremely honored to be the 2020 recipient of the AAPG Robert R. Berg Outstanding Research Award. This is a unique experience that was unanticipated and took me by surprise when I received the phone call from president Mike Party during a summer evening on the terrace of our house in Sardinia. I take the opportunity to thank who took the initiative to nominate me and, by doing this, to highlight the work carried out through many years of dedicated and disciplined work.

First, I would like to acknowledge the many colleagues I collaborated with. The award received is also theirs as the important research projects are always developed in a team. I have always been associated with great teams during my career and I can revisit some of the groups where main achievements were obtained. The first is a now dissolved company named Geosystem (Milan, Italy) where I took my first steps into the geophysical service world. The small group and specialized services allowed to operate in niche markets where there was room for dedicated research and development. Here I had the opportunity to combine my seismic background with electromagnetics and joint interpretation. This eventually led to the development of joint inversion methods as well as of pioneering long offset seismic applied to complex exploration settings. Depth imaging in complex geology was one of the commercial opportunities we developed on a worldwide client base. The enhanced capabilities in velocity model building deriving from the long offset processing and multiphysics joint inversion provided an edge over competitors including major service providers. The business rapidly expanded and soon we were depth imaging seismic from Papua New Guinea to the Middle East to North and South America. WesternGeco as part of Schlumberger was another step in my career which was very useful to upscale the experience by collaborating with some of the best geophysicists in the industry. Here I had the opportunity to step into more managerial work where I learned to streamline research by ensuring at the same time enough revenues be generated for the company. This experience was very instructive and shaped permanently my attitude towards applied geophysical research.

The second half of my career has been with Saudi Aramco and EXPEC Advanced Research Center, a truly unique experience and environment. Here I have experienced what I consider a renaissance. The whole institution nurture creativity and innovation.

This has enabled unique research developments that ultimately led to the current award. Here in EXPEC ARC I had the opportunity to build a very strong team who is sharing the achievements obtained in the last decade.

When looking at the future I see a big value in the crossing of disciplines. Geophysics has typically evolved along separate paths with very few geophysicists willing to cross the rigid boundaries. My approach, favored also by the circumstances of experience, has always been to try to look beyond the walls. I always believed that big opportunities in exploration and resource development lie in the integration of multiple geoscience disciplines. Whether this happens through joint inversion or through machine learning and big data analytics methods, this must be quantitative, and data driven. I believe it is important in many cases to think out of the box, take challenges, being led by intuitions and short after a success start thinking about the next goal. Another important aspect is to work with data. The interaction between theoretical development and data analysis is fundamental in order to turn theory into applications and applications into theory. This sometimes requires taking some approximations, or a heuristic approach, by keeping in mind that what has applications and works for the final users, is what has value.

I want to thank my friend and biographer Stephen Hallinan (CGG) with whom I shared many work experiences and thoughts during the early career. I want to mention my wife, Lastri, who has been an extraordinary and wonderful support for my work and, most importantly, inspired and keeps inspiring my life. Our kids, Sara and Lorenzo, have been experiencing and enjoying an international multicultural environment since a young age and this is what I believe is another important achievement of my association with the industry.

Daniele Colombo

JONATHAN P. ALLEN
Distinguished Service Award

Citation–To Jonathan P. Allen, in acknowledgment of his commitment to challenging the status quo and his dedication to the next generation of geoscientists through mentorship, leadership and AAPG volunteerism.

A long time ago, on a blueberry farm far, far away, a young Jonathan Allen developed a deep appreciation of nature and the outdoors which would fuel a lifelong love of geoscience.

From the blueberry fields of down east Maine, Jon attended Colby College where he pursued a senior thesis in the sedimentological and plant taphonomic character of the early Middle Devonian Trout Valley formation. He graduated in 2003 with a Bachelor of Arts in geology and biology, and an equally career-defining minor in performing arts. Soon after, he began his own version of the California Trail, stopping first at the University of Nebraska-Lincoln (UNL), where he joined AAPG in 2004 and received the Best Student Oral Presentation Award at the 2004 Annual Convention and Exhibition in Dallas, Texas. Jon earned his Master of Science degree in geosciences from UNL in 2005, having studied the sedimentology and stratigraphic architecture of the late Permian Betts Creek Beds of Queensland, Australia. That same year, Jon interned with Samson in Tulsa, Oklahoma, before heading back to UNL to focus on his Ph.D. work on the Carboniferous evolution of the Maritimes Basin complex in Atlantic Canada. He developed a further interest in industry in 2007 as an earth science intern with Chevron in San Ramon, California. Jon went on to earn his doctorate in 2009 and was offered a position as an earth scientist in the Applied Reservoir Management Team with Chevron in Bakersfield, California.

It was at this, the starting point of Jon's industry career, that he got mixed up with a plucky band of industry upstarts known as the AAPG Young Professionals Committee. While in Bakersfield, Jon maintained his involvement in research. He served on the AAPG Research Committee from 2009 to 2015 and earned the George C. Matson Memorial Award in 2013 for the best oral presentation at the 2012 Annual Convention and Exhibition.

During this time, Jon also served as a member of the Alumni Board of UNL's Department of Earth and Atmospheric Sciences and as a member of the Buena Vista Museum of Natural History and Science Board of Directors. Simultaneously, Jon helped the Young Professionals Committee make great strides within the Association, serving first as the Pacific Section YP representative, then as Committee Vice Chair in 2013-2014 and finally as Chair from 2014-2017.

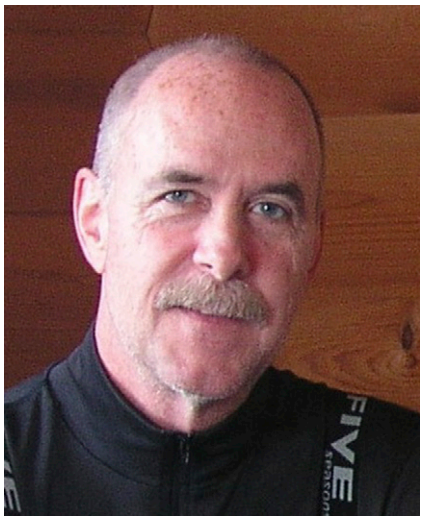
Jon moved to Houston, Texas, with Chevron in the summer of 2017 to take on a role as a Reservoir Management Earth Science Consultant in Upstream Capability. Today, Jon continues to support AAPG through his involvement with the Stratigraphy Committee, the Education Awards and the House of Delegates, and as a member of both the Energy Minerals Division and the Division of Professional Affairs.

As of January 2020, Jon divides his time between Houston, where he lives with husband, Jason Gutierrez and feline daughter Delilah, and Covington, Louisiana, where he works as a Senior Earth Scientist for Chevron's Gulf of Mexico Business Unit.

Throughout his 10-year career, Jon has dedicated considerable time and effort to AAPG programs and initiatives. In addition to his work with the Young Professionals Committee, Jon has been an industry mentor to several Imperial Barrel Award teams from the University of Houston and facilitated numerous Young Professional Leadership Summits, a program designed to inspire and engage the next generation of AAPG leaders. His experience as Chevron's LGBT Employee Resource Group Corporate President was recently leveraged in the newly formed Special Interest Group STEMulating Diversity and Inclusion, which seeks to embrace our differences, celebrate our uniqueness and achieve greater success as geoscientists. The energy and enthusiasm Jon brings to the Association is an approach to professional stewardship to which we should all aspire.

I have known Jon for the better part of a decade and consider it an extreme privilege to document his many accomplishments. There are few people who have inspired, and grounded, me more, both as a geologist and as a friend, than he has. On behalf of me and the many others who have benefited from Jon's kindness, leadership and resolve: May the Force be with you. Always.

Meredith L. Faber



JON BLICKWEDE
Distinguished Service Award

Citation—To Jon Blickwede for his service to the local and global geoscience community and his sharing of geologic knowledge of the Gulf of Mexico/Caribbean region.

Jon Blickwede has been active in AAPG since graduate school at the University of New Orleans (UNO) (1979-1981). I first met Jon at UNO where I was also an earth science graduate student. AAPG was encouraging the formation of student chapters and Jon served as the first president of the newly formed UNO chapter. What I remember most clearly about Jon from those UNO years was his fluency in Spanish. As he defended his thesis, *Stratigraphy and Petrology of Triassic Nazas Formation, Sierra de San Julian, Zacatecas, Mexico*, the Spanish words just rolled off his tongue in his deep bass voice. His mastery of the Spanish language and his presentation skills would serve him well in his petroleum geology career. Speaking on his thesis material at the 1981 ACE, San Francisco, Jon received the Best Student Oral Presentation award.

Jon's petroleum geologist career began with Amoco-New Orleans in 1981. His time in the New Orleans office included regional subsalt, source rock, and thermal history studies of the Gulf of Mexico shelf and slope. He also worked the older Mesozoic and Paleozoic rocks of the Gulf Coast, offshore lease sale evaluations, and wellsite geology. Jon was one of the company's first geoscientists to study the deep-water Perdido Fold Belt and he received the George C. Matson Memorial Award for best technical paper 1988 ACE, "Perdido Foldbelt: New

Deepwater Frontier in Gulf of Mexico."

With the mass Amoco exodus to Houston in 1989, Jon was assigned to Amoco Trinidad, evaluating exploration license round offerings and participating in regional studies. His next assignments were two years with Amoco Mexico (1991-1993), followed by three years as exploration coordinator, Amoco Venezuela, Caracas. On Jon's resignation from Amoco in 1997, he penned a letter to management expressing his concerns about the direction in which the company was heading. This was certainly not unique to Amoco, as many of the major oil companies were following the same route, or as Jon put it, "the latest business fashions." After expressing his appreciation for his 16 years with the company, he eloquently discussed the issues of the time: numerous human resource programs being imposed on employees, declining company commitment and loyalty, standardized work processes, and the encouragement of early retirement of seasoned workers and mentors.

From 1997-2002, Jon worked with Petroconsultants/IHS Energy Group as regional manager, Mexico and Caribbean Region, and with The Andrews Group International/ AGI Mexicana, as Manager of geoscience. This was followed by employment with Unocal Corporation as a Gulf of Mexico senior advising geologist (2002-2005). During these years Jon was again recognized for his technical and presentation skills, receiving the Houston Geological Society's Best Paper Award (2004-2005) and the Gulf Coast Association of Geological Societies (GCAGS) 3rd place Best Oral Presentation (2004). Jon also co-edited AAPG Memoir 79 (2003), *The Circum-Gulf of Mexico and Caribbean: Plate Tectonics, Basin Formation and Hydrocarbon Habitats*.

In 2005, Jon began a 12-year employment with Statoil-Houston, again working the Gulf of Mexico, United States and Mexico, as well as regional evaluations of onshore unconventional exploration opportunities. During this time, Jon became an integral part of the AAPG's Publication Pipeline Committee, which has shipped more than 100 tons of used geoscience books and journals to university geoscience departments in developing countries. In his more than 10 years of service with this committee Jon has served as secretary and chairperson, receiving an AAPG Certificate of Merit (2015). Jon was co-organizer of the 2004 GCAGS Petroleum Systems of the Northern Deepwater Gulf of Mexico symposium and he served as co-convener for the 2007 Gulf Coast Section-SEPM Perkins Research Conference. At the 2010 International Oil History Symposium, Jon presented, "The Greatest Oil Well in History? The Story of Cerro Azul #4." Jon served as the Houston Geological Society *Bulletin* editor (2015-2016).

Jon left Statoil and founded Teyra GeoConsulting LLC in 2017. His service activity has remained high. He is currently the president of the Houston Geological Society, a member of the AAPG House of Delegates, a member of the Drones and Drone Data Technical Interest Group (TIG), and co-convener for the 2020 AAPG Hedberg Conference-Mexico City.

Throughout Jon's career as a petroleum geologist he has continually participated at both local and international levels in sharing his knowledge through oral presentations and published articles. He has served his profession well as an editor, committee member, conference organizer, and local geological society president.

Jeff Spencer

JONATHAN CRAIG Distinguished Service Award

Citation—For Professor Jonathan Craig whose career and contributions have been the epitome of distinguished service across the worlds of Industry, Science and Education exemplified by his insightful leadership within the AAPG

Jonathan Craig's services to geosciences cut across generations and continents and his recognition with honorary professorships in energy geoscience at University

College and Royal Holloway College, London; Durham University and the University of Jammu in India are just an example of the esteem in which he is held in the academic and scientific communities. Jonathan (whose diary I doubt could be managed by anybody apart from himself!) gives willingly of his time to a number of other august bodies including the Scott Polar Research Institute, the Advisory Board of CASP University of Cambridge, the Advisory Board of the Energy and Geoscience Institute (EGI) of the University of Utah (which he chairs), the Maghreb Petroleum Research Group of University College London, the Irish Centre for Research in Applied Geoscience (iCRAG), and Getenergy Ltd.

Of course, that doesn't touch the surface of his commitment to AAPG which has been consistent, distinguished, and meaningful in the promotion and support of the Association. Jonathan has served on the European Committee of AAPG for many years including in the capacity of president of AAPG Europe from 2013-2015, as a member of the House of Delegates, on the Corporate Advisory Board, and now as a Trustee of the AAPG Europe Charity. Under his leadership Europe has seen many initiatives including the introduction of corporate sponsorships to the region and serving on the committee during his presidency gave me a very high bar for which to aim.

Jonathan has not only provided this support and mentorship to the AAPG, he was also recognized by the Geological Society of London in 2017, with the award of the Geological Society, Petroleum Group medal "in recognition of his outstanding contribution to petroleum geoscience and the petroleum industry" and where he served as chair of the Petroleum Group and where he has organized multiple conferences, including on the history of the oil and gas industry, and has authored compiled and edited a centuplicate of books, scientific papers, and articles that are by no means restricted just to geoscience—unless the provision of coal to the steam railways of India is classified as a geological link. Jonathan also has a longstanding position on the editorial boards of *Marine & Petroleum Geology* and *Petroleum Geoscience*.

With all of the activities above you might imagine that Jonathan's career has been focused on academia but of course that is very far from the reality; having graduated with a B.Sc. from the University of Nottingham in 1976, Jonathan entered the petroleum industry in 1980 working as a field geologist and later a structural geologist in Africa, Australia, and the Middle East, primarily for Shell, while also completing his Ph.D. in 1984 from the University of Wales Aberystwyth. In 1986 he joined Lasmo working on both exploration and development projects until his appointment as group chief geologist some 10 years later. In 2003 Jonathan moved to Eni, originally in the London office responsible for the Technical Exchange group, but then moving to the Milan head office taking responsibility for Eni's global exploration program including exploration excellence and the career development and training of Eni's geoscience staff. Under his leadership Eni have made some of their most profound discoveries including the exceptional Zohr discovery in Egypt, which has been responsible for turning around exploration in that region. Jonathan is still based in Milan, but continues to spend as much time on the road and in the regions as ever, always helpful when we need a Distinguished Lecturer!

It is not possible to think of a more deserving candidate for this award who has served across the globe sharing his knowledge and enthusiasm with individuals and organisations. Thank you Jonathan for your contributions to AAPG and to the greater world of geosciences and thank you to your family who have supported your gift to the community.

Fiona MacAulay

STEPHAN A. GRAHAM
Distinguished Service Award

Citation—To Stephan A. Graham, for his humble yet unrelenting

service to the broad Earth Sciences community, building opportunities for students and fostering collaborations beyond AAPG.

Stephan (Steve) A. Graham has a long history with AAPG. As a matter of fact, Steve received his undergraduate training at Indiana University in 1972, right around the time the Distinguished Service Award was established. When Steve set out for Stanford University to start his graduate studies with Bill Dickinson, Stanford was already the center of scientific advancements that deeply influenced the petroleum industry. The famous Dickinson-Graham-Ingersoll partnership that was to become so influential in sedimentary petrology and basin tectonics was formed during Steve's years at Stanford. His deep roots in the petroleum industry further developed over the ensuing four years working for Exxon (1976-1977) and Chevron (1977-1980). At Chevron, his successful streak of discoveries (no dry holes over a 4-year career) is still remembered and brought up at meetings by senior earth scientists.

Steve convened sessions at innumerable AAPG meetings; he has served on a diverse array of committees and has led field trips under the umbrella of AAPG activities since the early 1970s. At times these lists get a bit dry, but it is worth remembering that Steve was an associate editor for the *AAPG Bulletin* (1983-89); a co-instructor for the AAPG Deep-water Field Seminar (2006-2015); and a very involved member of the AAPG Centennial Field Trip Committee (2010-2017). Like many AAPG awardees, Steve has done plenty to deserve this recognition, but it is safe to say that Steve's biggest achievements are above and beyond distinguished service. Steve ultimately has excelled as an educator and a selfless, curious scientist whose passion for sharing and teaching is unmatched.

Since his return to Stanford in 1980 as an associate professor, he has steadily marched forward to become a world leader in basin analysis and tectonics. His work spans a remarkably broad range of topics, all of them highly applicable in the petroleum industry, including sedimentary petrology, sedimentology, sequence stratigraphy, reflection seismology, geochronology, organic geochemistry, stable isotope geochemistry, and paleontology.

Steve's unrivaled work in forging connections between the petroleum industry and academia was achieved through the organizing of special volumes, conferences, and field trips, as well as developing and leading academia-industry consortia, and maintaining a high profile in organizations such as AAPG and SEPM. Perhaps no other individual in American academic geology has so successfully bridged the gap between university and industry geoscience. Steve has managed to do this through a visionary understanding that both entities share fundamental scientific interests.

The open-minded and integrated approach Steve has been implementing and advocating throughout his career is exemplary. While Steve is deeply rooted in traditional sedimentology and stratigraphy (at times missed these days), he has branched into the most modern and highly technological approaches, influencing many subfields of earth sciences. In his gentle way, providing key thoughts and fundamental ideas, Steve has been shifting paradigms since his early days as a graduate student with Bill Dickinson.

The collective body of work produced by Steve is impressive. He has published more than 190 papers in peer-reviewed journals (without counting book chapters and field guides), which together have been cited more than ~16,000 times. Steve has trained more than 90 graduate students. At least 12 of his former Ph.D. students and postdoctoral fellows now occupy academic positions in the United States, Canada, China, and Europe, and legions of his students have established successful careers and leadership roles in the international petroleum industry. He is a Fellow of the Geological Society of America (1982), and recipient of the Sproule Award from AAPG (1987), the A.I. Levorsen Award from the Pacific Section of AAPG (2005), and the Grover E. Murray Memorial Distinguished Educator Award, AAPG (2007). More recently, he has received the prestigious SEPM Pettijohn Medal for excellence in sedimentary geosciences. Since 2017, Steve has been the dean of the School of

Earth, Energy and Environmental Sciences at Stanford University.

Most significantly Steve Graham has accomplished all of this and more with a generous, humble spirit, always willing to subordinate his own agenda and interests to those of his colleagues, students, postdocs, and professional associates. He is a consummate leader, out in front by action and leading by example. He has been truly instrumental in the development of dozens of young scientists, and they in turn return annually in droves to his famous Indy Barbecue parties. In these times, when many decisions seem to be rushed and maybe lacking thoughtful consensus, Steve's calm and unselfish leadership is a breath of fresh air.

Andrea Fildari

ADEMOLA LANISA
Distinguished Service Award

Citation—To Ademola Lanisa, for his enthusiastic and excellent service to the AAPG. His passion and commitment to the professional development of Young professionals and students in the Africa Region.

Demola was exposed to Geology quite early by his father an Engineering Geologist who ran a private practice in Lagos, Nigeria. He went on to study Geology in the University, receiving a B.Sc. in geology from Obafemi Awolowo University, Ile-Ife Nigeria and an M.Sc. in petroleum geoscience from Royal Holloway University of London in 2010. He started his professional career as a seismic interpreter in 2006 at Degeconek under the tutelage of Biodun Adesanya, subsequently he had the opportunity to work for and be mentored by the legendary Bayo Akinpelu at Andora Technologies. After his M.Sc. he worked briefly with Paradigm Geophysical and in 2011 joined the JV-Exploration Team of French oil company Total as an exploration geophysicist in Port Harcourt, Nigeria. He moved to asset development in 2013 as a reservoir geophysicist and later to a more senior role in the nonoperated asset team in Lagos. He is currently in Total's headquarters in France working on the Africa Exploration team.

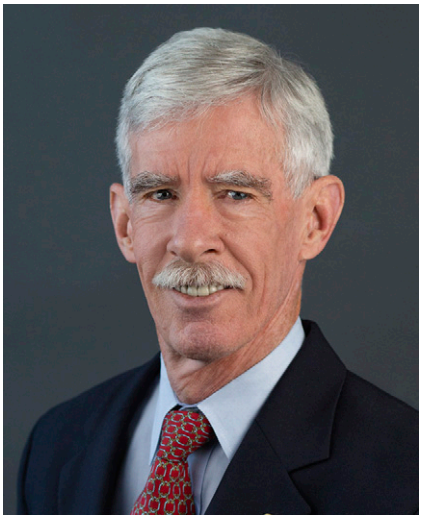
Demola's Involvement with AAPG dates back to his undergraduate student days. As an AAPG student leader, he organized several workshops inviting Visiting Geoscientists (VGPs) to his university to share their experience and knowledge with fellow students. Inspired by the impact of the VGP lectures during his student days he wasted no time enlisting as a visiting geoscientist under the AAPG VGP Program and visited several universities in Nigeria, Ghana, and South Africa. Demola thoroughly enjoys teaching and discussing petroleum geoscience, his VGP lectures are high energy and very interesting. He has the ability to keep audiences actively engaged for several hours. He is a Certified Professional Geophysicist and a member of the DPA, He serves in the AAPG Education Awards committee, volunteers as a judge in the IBA Competition and has been actively involved in the organization of AAPG workshops and programs in the Africa Region.

But perhaps his most significant contribution to AAPG was during the time he served as AAPG YP Lead for Africa (2016-2018). Through very strong interaction and ties with respective local Geoscience communities in the Africa Region, Demola and his team organized numerous innovative YP-centered activities and initiatives that helped grow the membership and popularity of AAPG tremendously among students and young professionals in the Africa Region. Demola together with last year's YP exemplary service award recipient Tunbosun Afolayan, initiated a robust mentorship program for the YPs in the Africa region. For the past three years, he has led the team that organizes the biggest and most popular team competition in geoscience among Nigerian universities; the Basin Evaluation Competition. The amazing support he received from the AAPG-Africa Region leadership made all these achievements possible.

Quite vocal about the role geoscientists play in a sustainable future, he has carried this message to high schools, educating the

younger ones on the meaningful positive impact geoscientists can have on the planet and why they should consider a career in geoscience. Immensely popular among students and YPs, He constantly gives his time, resources, and energy in helping students and mentoring young professionals. He was recently elected to the AAPG House of delegates as one of the delegates representing the Africa Region. His volunteer work with AAPG has been a tremendous learning experience as well as a passion for him. This award will only propel him to do more. There is definitely so much more to come from this vibrant and tireless Ambassador of AAPG.

Adedoyin Orekoya



ROBERT E. WEBSTER
Distinguished Service Award

Citation –To Robert E. Webster for his sustained service to the science of geology, the business of exploration and the American Association of Petroleum Geologists.

In more than 40 years as a petroleum geologist, Robert E. Webster has contributed to every aspect of our profession, with a spirit of volunteerism, enthusiasm for the science of geology, and an appreciation for the business of exploration. Throughout his career, Bob has quietly provided thoughtful advice, guidance and leadership in a manner that both first-year geologists and executive committee members value and respect.

Bob was born in Philadelphia in 1945 and grew up in the Pocono Mountains in eastern Pennsylvania. As a youth, he was active in scouting and sports. The Rocky Mountains lured him west, where he came to love geology under the guidance of professors Bill Bradley and Bill Braddock at the University of Colorado. Bob received his B.A. in geology in 1967, and after graduating he did a tour in Vietnam as an infantry officer in the Marines, where he received a Purple Heart and a Silver Star for gallantry in action. After completing military service, he worked as a mud logger in the Rocky Mountains and married his wife, Rosina, in Denver in 1973. Bob and Rosina have two grown children, Alan and Sara, and two grandchildren; Bob served as a Boy Scout leader for 13 years while Alan was growing up and afterwards.

Bob and Rosina moved to Dallas in 1975. He joined AAPG in 1976, while he was working for Core Laboratories and beginning a master's degree at the University of Texas at Arlington. He completed his master's in 1978 under the direction of Don Reaser and Cal Miller. Professionally, Bob worked for Core Laboratories, AMAX Petroleum Corp, Nasco Ltd., Hunt Oil Company, and Denbury Resources. Bob also worked as an independent consultant at several points in his career and continues to consult on exploration projects to this day. At Hunt Oil, he worked on projects in Niger, Madagascar, Oman, Togo, Iraqi Kurdistan, and East Texas-North Louisiana. He also served as general manager for Hunt Oil in Argentina and as chief geologist for exploration programs in Guyana, Chile, Argentina, Bolivia and Peru.

Bob retired from Hunt Oil Company in 2008 after 20 years, and after a period of independent consulting, joined Denbury Resources for 6 years, where he was responsible for geologic management of tertiary recovery CO_2 floods in Mississippi and Texas. While at Hunt and again at Denbury, he served as a mentor to many young geologists, several whom have become leaders in the Dallas Geological Society and in AAPG

Bob served as first vice president of the Dallas Geological Society in 1986-1987 and then president in 1987-1988. He helped found the International Exploration Committee in 1991 and served several terms as chairman of that committee. Although he has been an Honorary Life Member of Dallas Geological Society for several years, he continues to serve his local society. For several years, he coordinated an E&P forum cosponsored by DGS and the

Dallas chapter of SIPES. In 2019, he served as convention chair for the Southwest Section Annual Meeting in Dallas, which also marked DGS' 100th anniversary.

Although much of his work for Hunt was focused on South America, Bob stayed on top of regional geology and exploration activity by attending many Southwest Section AAPG meetings in Abilene and Midland. His participation was recognized by being elected to the Southwest Section board twice, as vice president in 2013-2014 and as representative to the Advisory Council 2014-2017. While on the AAPG Advisory Council, Bob served on the Ad Hoc Committee on Governance and as chair of the Honors and Awards Committee. Bob chaired the Field Trip Committee for the 2004 AAPG Annual Convention and Exhibition in Dallas. He also has served as an advisor to The University of Texas at Dallas Imperial Barrel Team.

Bob is certified as a Pofessional Geologist in the State of Texas, was certified by the AAPG Division of Professional Affairs in 2009 and joined the AAPG Foundation Trustee Associates in 2017. Perhaps Bob's most visible contribution to AAPG has been his long service to the HOD as a representative from Dallas Geological Society (1986-2016), with service on multiple committees and offices, including secretary-editor. Bob stepped down from the HOD in 2016, encouraging younger members to take his place, and was awarded Distinguished Member of the House in 2018.

Joe Davis

PAUL MANN
Grover Murray Memorial Distinguished Educator Award

Citation—For a dedicated geoscientist and researcher, who has taught, supervised, mentored, and inspired students in the areas of tectonics, basinal studies, and petroleum exploration.

Paul Mann is a professor of geology and the Robert E. Sheriff Endowed Chair at the University of Houston.

For his 1978 B.S. degree in geology, Paul was mentored by Grant Skerlec at Oberlin College, Ohio, who guided him to both the University of Indiana Geology Field Camp in southwestern Montana and to graduate school at the State University of New York at Albany to pursue his primary research interest in structure and tectonics For his Ph.D. in geology in 1983, Paul worked with Kevin Burke on geologic field studies in Jamaica and Hispaniola and was recognized with the 1983 SUNY Albany Presidential Award for the Outstanding Ph.D. Dissertation. Paul benefitted from his close interactions with other SUNY faculty mentors that included John Dewey, Win Means, Bill Kidd, and Jeff Fox.

Following graduation from SUNY, Paul worked at the Institute for Geophysics of The University of Texas at Austin as a researcher, lecturer, and supervisor of graduate student projects. HIs early studies focused on Caribbean field mapping and later transitioned into marine geophysical surveys, GPS-based geodesy in the Caribbean and southwestern Pacific, and industry-funded subsurface mapping of submarine areas of the Caribbean.

For his UT research efforts, Paul received an Erskine fellowship to New Zealand (1997), a French Academy of Science fellowship to France (1999-2000), a fellowship of the Geological Society of America (2005), the UT Jackson School Joseph C. Walter Excellence Award (2006), the UT Jackson School Outstanding Research Award (2008), a Leiv Eiriksson fellowship to Norway (2008), and the UT Institute for Geophysics Circle of Excellence Award (2010). During his years at UT, Paul's research program was enriched by his primary supervision of 2 postdocs, 5 Ph.D. students, 23 M.S. students, and 1 undergraduate honors student.

In 2011, Paul moved from UT to the University of Houston where he has expanded the CBTH industry-funded subsurface mapping from the Caribbean to the conjugate margins of the Gulf of Mexico and Atlantic margins. The CBTH

project began in 2005 and is currently funded by 9 oil companies, employs 18 graduate and undergraduate students, 2 technical support specialists, 2 research postdocs, and provides original research projects and GIS databases to its industry sponsors. At UH, Paul was the primary supervisor of 17 Ph.D. students and 17 M.S. students and 5 undergraduate honors students. Since its founding at UT in 2005, the CBTH consortium has financially supported a total of 110 UT and UH graduate and undergraduate students in the areas of research and GIS database support.

Paul joined AAPG in 1986 and has offered two AAPG short courses and was the cofaculty advisor for seven University of Houston IBA teams which won the IBA world championships in 2017 and 2019 and were in the top three finishes at the Gulf Coast section in 2012, 2013, 2014, and 2016. He shared the 2016 AAPG Robert Dott, Sr. Award for the best AAPG special publication on the petroleum geology of Colombia with co-editor Dr. Claudio Bartolini. His UH teaching has focused on preparing graduate students for careers in the oil industry and includes courses on subsurface basin analysis and courses focused on the Gulf of Mexico and Caribbean. He also teaches at the undergrad level and mentors undergrad research projects that help undergrads prepare for graduate school.

At UT, he has supervised grad students who have been awarded a total of four awards for AAPG-ACE student poster competitions that include two first place awards in 2008 and 2011. At UH, he was the primary supervisor of CBTH-supported grad students who have been awarded a total of 13 awards for AAPG-ACE student poster competitions that include 3 first place awards in 2013, 2017, and 2019.

For the last 9 years, he has been the faculty supervisor to both the AAPG Wildcatters student group—that was recognized as the top AAPG student chapter in the United States in 2018—and to the undergraduate Geosociety student group for which he received the UH faculty advisor of the year award in 2013.

Paul has enhanced the educational experiences of students at both UT and UH by involving them in cutting edge research and by facilitating the use of state-of-the-art exploration software and subsurface datasets in student research projects at all levels. With his wide-ranging approach to student education, Paul is very deserving of the Grover E. Murray Memorial Distinguished Educator Award.

ABEL IDOWU OLAYINKA
Grover Murray Memorial Distinguished Educator Award

Citation— Abel Idowu Olayinka has been dedicated to teaching and research in geology and geophysics at the University of Ibadan for the past 32 years. He has mentored many generations of students in the geosciences and petroleum engineering.

Abel Idowu Olayinka was born at Odo-Ijesa, State of Osun, Nigeria, on February 16, 1958. He entered the University of Ibadan during the 1977-1978 session to study geology. He graduated with a B.Sc. degree (2nd Class Honours, Upper Division) in 1981.

He proceeded to the United Kingdom for postgraduate studies in September 1983, first at Imperial College of Science, Technology and Medicine, London. He earned an M.Sc. degree in geophysics of the University of London in July 1984. He subsequently received the Overseas Research Students' Award from the Committee of Vice-Chancellors and Principals of United Kingdom Universities (now Universities UK); he utilized this scholarship at the University of Birmingham for his Ph.D. research in applied geophysics, which he completed in April 1988.

He had postdoctoral research experience in Germany, first at Technical University, Braunschweig as a German Academic Exchange Service Visiting Scholar from April until August 1996 and later at Technical University, Berlin, as an Alexander von Humboldt Research Fellow from July 1997 till April 1999.

He took up appointment at his alma mater, the University of Ibadan, as a lecturer in applied geophysics in April 1988 and rose to the position of professor of

applied geophysics in 1999. He has successfully supervised 13 Ph.D. candidates.

Olayinka has had the privilege of 21 years cognate administrative experience at the University of Ibadan. These include a two-term stint as deputy vice-chancellor (academic) from December 2010 to December 2014, where he served as chairman, Committee of Provost, Deans and Directors; Senate representative on the Governing Council from August 2007 until December 2010; dean of the Postgraduate School from 2002 to 2006; head, Department of Geology 2001-2002 and 2006 to 2010; sub-dean of the Postgraduate School 1999-2001; and sub-dean (Postgraduate) of the Faculty of Science, 1995-1997. He served on several occasions as the acting dean, Faculty of Science, during the 2009-2010 session. He was a member of the University Senate from 1994-1997 representing Congregation and has been a full member from 2000 to date. He was chairman of the Senate Curriculum Committee from February 2007 until February 2011 and chairman, Curriculum Review Sub-Committee of the MacArthur Grant from 2009 until 2014.

As deputy vice-chancellor (academic), he demonstrated competence and effectiveness as a productive scholar-administrator and team player. He was able to provide the required leadership to the academic programs of the university, either directly or through the auspices of the Committee of Provost, Deans and Directors, which he had the privilege to chair.

As head, Department of Geology, during the 2001-2002 session, and from 2006 to 2010, he was deeply involved with fund raising. The Mosobalaje Oyawoye Library in the Department received a major facelift, in terms of computer hardware and software and acquisition of current journals and books. A total of 16 prizes and awards were generously endowed in the department at both the undergraduate and postgraduate levels, thus motivating and inspiring our students to be at their best.

As dean of the Postgraduate School from 2002 to 2006, he repositioned the school as the flagship for postgraduate training and research in Sub-Saharan Africa. The major achievements included: massive fund mobilization with a 253% increase in the total revenue generated; Introduction of the Overseas Conference Grants for Postgraduate Teachers after a nearly 20 year period of inactivity of such a scheme in the university; establishment of The UI PG School Scholarship Scheme and The UI PG School Teaching and Research Assistantship Scheme, which enabled a total of 57 research students complete their Ph.D.s; maintenance of an active academic environment in the university by regularly holding the Interdisciplinary Research Discourse Series and convening major workshops on Planning and Writing Grant Proposals for Academic Staff; Writing Ph.D. thesis for Research Students; Methodology of Basic and Applied Research for Academic Staff and Research Students; Contemporary Issues in Research Supervision; Globalization of Scholarly Journals; Scholarly Writing and Publications; and 'Tracking the Impact of Research. These have contributed significantly to the institutionalization of research management in the university.

Outside of the University of Ibadan, Olayinka has garnered extensive academic and professional experience nationally and internationally. He has received numerous grants from oil exploration and production companies, the European Union, the Association of Commonwealth Universities, the Department of Foreign and International Development (UK), the UK Department for Higher Education, and the International Institute for Educational Planning/UNESCO. He has served as consultant to the International Development Research Centre /Association of African Universities and the Joint Higher Education Management Programme of the German Academic Exchange Service.

In 2006, he convened the First International Conference on Research and Innovation Management in West Africa and this gave birth to the West African Research and Innovation Management Association (WARIMA) with its secretariat ceded to the University of Ibadan. WARIMA has grown to become a much-respected institutional member of the International Network of Research Management Societies, the global body of research managers.

Olayinka has received significant recognition and professional accolades during his career. He is a Fellow of the Nigerian Academy of Science and

currently a member of its Sectional Committee of Environmental and Earth Sciences, Fellow and former Chairman Awards Committee of the Nigerian Mining and Geosciences Society, Fellow and former editor-in-chief of the Nigerian Association of Petroleum Explorationists, Fellow and Chartered Geologist, Geological Society of London; and elected to the title of European Geologist. He is a registered Geoscientist with the Council of Mining Engineers and Geoscientists.

He served as chairman of the Steering Committee and later the Foundation President of WARIMA, from 2006 until 2015. He is a member of the Society of Research Administrators International and member of the African Network for the Internationalisation of Education.

He is currently the vice-chancellor of University of Ibadan.

Abel Idowu Olayinka is happily married to Eyiwumi Bolutito Olayinka and the union is blessed with two promising children.

Nosa Omorodion

Response

I wish to thank immensely the AAPG president J. Michael Party and the entire Executive Committee for selecting me for the 2020 AAPG Grover E. Murray Distinguished Educator Award. The news conveying this recognition, honor, and distinction came as a huge, pleasant surprise as I was unaware that I was a candidate for the award. I wish to thank all the eminent colleagues who must have played one role or the other in nominating me. They can rest assured that I will not betray the confidence they have always reposed in me as a professional geoscientist.

I have been privileged to teach, conduct research, and provide consultancy services in various aspects of the geological sciences for some 38 years now. I have had opportunities offered to contribute my own little quota to our profession. I shall continue to remain an active member of the geoscience community and continue to strive to defend its ethics.

This award is deservedly dedicated to the entire Nigerian geoscience community for their consistent support toward my career.

With renewed thanks for this recognition from AAPG, which I consider a clarion call to become more relevant to the petroleum geosciences in particular and humanity in general.

Abel Idowu Olayinka

FRED SCHROEDER
Harrison Schmitt Award

Citation—Fred Schroeder is impactful in many components of petroleum exploration, especially seismic stratigraphy. His dedication to educating students around the globe has helped thousands.

Requisite for being an impactful educator is being a lifelong learner. Fred Schroeder has been exemplary as a lifelong learner, using his enthusiasm for new concepts to invent and develop cutting edge applications for the petroleum industry.

His early work with ExxonMobil's seismic stratigraphy gurus, Peter Vail and Bob Mitchum, propelled him to

1. Specify and oversee development of a software program for one-dimensional back stripping of stratigraphy to determine a basin's subsidence and sedimentation history;
2. Determine a basin's temperature history (in extensional basins);
3. Develop a workflow for semi-quantified seismic facies analysis. This triggered the development of a computer-based seismic attribute analysis toolkit, Exxon's workhorse for many years;
4. Specify and oversee development of a two-dimensional forward model system for the generation of depositional sequences;
5. Help develop computer programs to assist with interpreting seismic stratigraphy using artificial intelligence;
6. Devise and code software which restores two-dimensional interpreted horizons and basin geometries back through geologic time; and
7. Contributed to a team developing procedures to rate Gulf of Mexico "bright spots."

When working with Oyvind Sylta at the Norwegian University of Science and Technology, this duo jointly developed a three-dimensional model of HC generation and migration in the North Viking Graben and used the results to access prospects in open blocks. Fred also worked with researchers at the French Institute of Petroleum (IFP) where his team was able to model hydrocarbon generation and migration using a regional well-seismic section that extended from Arkansas to the deep Gulf of Mexico.

Fred developed "best practices" for many of the steps used to interpret three-dimensional seismic data using computer software and worked on a team to optimize seismic acquisition specifications for three-dimensional seismic surveys. He was one of the earliest to use artificial intelligence to interpret and analyze seismic data.

His passion for teaching and mentoring began at ExxonMobil where he trained and mentored hundreds of geophysical interpreters—where he both developed the materials and documented the courses for future corporate use. He went on to develop the same for modeling HC generation and migration.

Fourteen years ago, with ExxonMobil's permission, Fred started a major volunteer effort to introduce students to what geoscientists do in the petroleum industry. This was through AAPG's Visiting Geoscientist Program (VGP). He started by offering a 1-day short course to graduate students through on-campus visits. Over time he added four additional short courses and five seminar lectures.

Fred became active in VGP in 2007 and earned the title "Super Visitor" as he made the most visits for several consecutive years. He started by offering 6 to 8-hour short courses to AAPG Student Chapters and other geoscience departments. In 2018 he pioneered "virtual campus visits" by providing webinars for students and has since completed 23 webinars with attendees from around the globe (although difficult to quantify, well over 1000 students have watched some of these webinars). He has visited 102 campuses amassing contact with 3135 students and 277 faculty members. Recently his webinars have expanded from AAPG students to the Geological Society of America students.

Fred received the Jim Hartman Service to Students Award from AAPG in 2019. This was for his efforts in helping students prepare for the AAPG Imperial Award competition. He prepared a 3-webinar short course.

Fred was born on Long Island, New York in 1950 and was always interested in science and math. He majored in engineering physics at Lehigh University and earned in B.A. cum laude in 1972. However, an elective in his junior year in oceanography propelled him toward marine geology with a special interest in plate tectonics. He went on to Columbia University where he did research with Lamont Doherty Geological Observation and earned both a master's and a Ph.D. (1975, 1977) in marine geology. Supervised by John Ewing, his thesis was entitled "A geophysical investigation of the oceanographic fracture zone."

Fred went to work for ExxonMobil's Production Research Company in Houston where he enjoyed 11 years working with the Seismic Stratigraphy Group. Following that were stints in secondary migration, seismic acquisition, reservoir characterization, exploration (West Africa), oil versus gas prediction, three-dimensional seismic interpretation and visualization, and artificial intelligence.

After ExxonMobil, Fred taught for Nautilus, Texas A&M University, was on staff with Nobel Energy and served on the IRIS Education and Public Outreach council.

Fred Schroeder has parlayed his enthusiasm for petroleum geoscience into both an outstanding career and global education. He and his wife, Lois, have been married for 47 years. Their daughter, Tara, and son, David also live in Texas. Fred and Lois have two grandchildren, Ephraim and Pearl, in Ft. Worth. Texas.

Robbie Gries

Response

I am greatly honored to be this year's recipient of the Harrison Schmitt Award. The phone call I received from AAPG president Mike Party was a total surprise.

First, I would like to thank Robbie Gries for writing such

a glowing citation. It has been a great reminder of the career I enjoyed in the petroleum industry, including my ongoing outreach to geoscience students.

While a bit cliché, I was "in the right place at the right time" to take advantage of four great advances in geoscience understanding and technological developments. First, I started studying geoscience when plate tectonics was revolutionizing the way we interpret the Earth. I joined many great scientists at Lamont Doherty, studying the plate tectonic implications of a North Atlantic fracture zone.

Next I was accepted by Exxon Production Research (EPR) to work on seismic stratigraphy. I started three months prior to the release of the classic AAPG Memoir 26. I had the great pleasure to learn from and work with Pete Vail, Bob Mitchum, and most of the other founders of seismic stratigraphy. My career as a trainer began soon after I joined EPR by teaching seismic stratigraphy in-house to hundreds of Exxon geoscientists through formal classes and on-site workshops. I especially enjoyed analyzing basins from around the globe, trying to figure out how the sedimentary layers were deposited and the implications on oil and gas. This led to some pioneering work in basin modeling, both geohistory and simulations of basin subsidence and fill.

The third revolution was the combination of three key developments: (1) workstation-based seismic interpretation and analysis, (2) the explosion in three-dimensional seismic surveys, and (3) the vastly improved imaging that seismic data processors were able to achieve. Working with my colleagues, we figured out how to best utilize the vastly improved data and the quantitative computer tools to extract more geology from seismic data than possible ever before. This led to a series of "best practices" for seismic interpretation and increased teaching opportunities.

The fourth great advance was the improvements in communication, which allowed us to have remote meetings. As part of my job, I was involved in many phone and video conferences with people all around the world. With retirement my source for travel funds was cut making on-campus visits for the Visiting Geoscientist Program (VGP) more challenging. I began to think about using webinars to reach students. Thankfully AAPG had webinar capabilities. We began with several trial webinars in early 2018 with reasonable good success. The next big step was a three-part webinar series with optional exercises that I presented to students preparing for the 2019 IBA competition. The use of webinars for student outreach is the primary accomplishment for which I am receiving this year's Harrison Schmitt award.

So how did I become interested in speaking to students? When I was in graduate school, there were no courses that even touched on petroleum geology. I knew oil and gas companies hired a lot of geologists and geophysicists, but did not understand the exact nature of their contributions. While this did not prevent me from applying to several energy companies, I would have benefited greatly from hearing first-hand from someone in our industry. I wanted to remedy this shortfall by giving students an opportunity to learn about what we do in our industry. I developed short-courses and lectures that would expose students to some of the geoscience applications we do in industry. Preparing and leading webinars affords me an opportunity to continue reaching out to and engaging with students wondering about our careers, while minimizing expenses and travel wear-and-tear.

There are many people and organizations that deserve my thanks. I will mention only a few.

My ultimate thanks go to the Father, Son, and Holy Spirit. I have been wonderfully blessed during my education, career and retirement by my God. He has guided me and given me inspiration in all that I have accomplished. To God be the glory!

I must also thank ExxonMobil Upstream Research Co. for releasing most of my teaching materials for student outreach. I'd like to single out Larry Baker for planting the seed of getting material released for some worthy cause. Chuck Caughey was chairman of the VGP when I took the concept of on-campus short courses to him in 2006. His enthusiasm and support spurred me on to start in-person presentations. To date I have visited more than 100 campuses.

ExxonMobil was generous with my time and expenses, allowing me to make up to three multi-campus trips per year. My thanks also go to the AAPG Student Chapters and the department chairs for allowing me to interact with their students.

I received a lot of help from AAPG, especially after retiring from ExxonMobil. AAPG covered many of my travel expenses and now support me in giving webinars. Special thanks go to Heather Hodges and Susie Nolen at AAPG headquarters. I must also thank Danielle Sumy from IRIS for encouraging me to conduct my first webinar.

Many of my "students" have gone on to join the petroleum industry, giving me great satisfaction. I regret that age has caused me to cut back. I challenge those reading this to consider giving some of your time to help prepare the next generation of petroleum geoscientists. Get involved with the student chapter at your alma mater (or get one started there). Try extending a business trip a day or two to visit a university near your out-of-town work location. Adopt a university far removed from the "oil patch" to serve as a remote mentor for the IBA competition. Join me in giving back a little something to the industry we love by reaching out to students.

In closing, once again I thank the AAPG for noticing my efforts and conferring on me such a great honor.

Fred W Schroeder

Editor's Note: Fred W. Schroeder passed away on February 17, 2020.

MARGO AND NED TIMBEL
Harrison Schmitt Award

We've all heard the expression 1+1 = 3. Silly, really. 1+1 cannot equal 3! Or can it?

When I started work at Champlin Petroleum in Denver, Colorado, in 1985, my assigned mentor was Ned Timbel. Little did I know how fortunate I was.

Ned was a quiet, unassuming geologist with an M.S. from Miami University. As I grew to know him, I would learn a little bit here—he had a complete woodworking shop in his basement; and a little bit there—he was a potter with the wheel in college. A little bit more here—a talented downhill skier; and a little bit more there—a competitive sailboat racer. I discovered still more about Ned: a trainer of Labrador Retrievers, owner and manager of rental properties, builder of model airplanes (the kinds that fly with actual motors) and race cars (the kind you drive around an actual track), restorer of classic boats, committed fly fisherman who ties his own flies, and avid cyclist (riding the Triple Bypass to this day). And more besides.

I came to understand that my mentor was actually a highly functional intellectual, in the "over-the-top smart" sense, while also modest and unpretentious. How could anyone keep up with Ned?, I recall thinking.

Ned would mention his wife, Margot, in proud and glowing terms: "She's brilliant. Makes me look like I'm standing still. I can't believe all she can accomplish. She's a great geologist. A beautiful skier. Better sailor than me. Remarkably well-read and worldly. Degree from Princeton." Later I met Ned's wife, the multitalented Margot Kent Timbel. Ned was underplaying it.

My wife Allyson and I were lucky enough to become, and remain, friends with the Timbels. They are a true force of nature. Everything they do, they do well. But when they are with you, they ask about you: your kids, your pets, what you are reading, what you had for breakfast… It's never about them.

And somehow, through all of this accomplishment, they managed to raise two remarkable kids, Carter and Mackenzie. Both geologists, and themselves growing to be extraordinary in their own right.

A few years ago, just when I thought the Timbels could never fail, it happened. They finally failed at something. Not just failed, a complete flop, tank, bomb! They

failed at retirement… and 600 students each month, participating in more than 50 classes at 40 locations in Colorado every week, are thankful that they did. Not just thankful, many say they owe their lives to them: figuratively and literally.

Margot and Ned decided to do something meaningful together in retirement, something that would positively impact others' lives. Both their fathers were veterans of World War II: Ned's father was a Navy pilot and pilot trainer and Margot's was in the Army Signal Corps. Ned's dad committed suicide in his sixties. Margot's dad struggled with depression. To honor their fathers, the Timbels decided to support our military personnel in a life-giving way.

In 2014, Margot and Ned started Comeback Yoga, a Colorado-based nonprofit that provides free yoga classes to veterans and military personnel, their families, and supporters, to help veterans develop tools to cope with post-traumatic stress and post-traumatic stress disorder. Comeback Yoga serves active-duty men and women, the recently deactivated, military people of all ages, in all service branches. Comeback also offers scholarships to veterans to become yoga teachers themselves. Over 30% of Comeback's teacher corps are veterans.

Their organization serves veterans and active-duty folks where they are, in VA hospitals, outpatient clinics, conference rooms, and military bases. Trauma-informed yoga is attuned to the experience and condition of military men and women. Brain science and brain-and-body understanding make the work feasible and effective.

"In the military, people are trained to be on alert all the time," explains Margot, "therefore, parts of the brain are never at rest. Yoga is calming; it can help them reconnect with their bodies, which rebuilds their confidence and self-regulation."

Margot teaches integrated, moving flow yoga to veterans of all ages and experience levels. Her students often comment on the quality of her voice and how it helps them find a peaceful space for their yoga practice. Margot brings her scientific curiosity and knowledge with her to the yoga mat and uses brain research and trauma-informed yoga to help her students find relief, confidence, and calm in their practice.

Ned started teaching yoga at the Denver VA Hospital and studies trauma informed yoga, neuro-plasticity, brain research and imaging, and attachment theory in early childhood development. Ned, a Yoga Alliance-certified 500-hour teacher, has taught more than 500 trauma-informed yoga classes. His yoga classes are inviting, easily done by people of varying physical abilities, and fun. His students appreciate his emphasis on breath practices, body-to-mind connections, and movement with breath poses.

To provide the most rewarding classes to military personnel and their supporters, scientists Ned and Margot pursue research about the latest updates in biology, neurobiology, therapy, and yoga. They are committed to providing a safe environment to help others reduce anxiety, mitigate trauma, and reinforce resilience.

Together they are meeting a vital need: more than 1.4 million men and women serve our country in active duty. Colorado is tenth nationwide, having 38,000 active duty military personnel. Suicide rates in the military are high. In 2018, more than 500 service members nationwide died by suicide; two-thirds of them were more than 50 years old. Suicide rates in 2018 tripled among Special Operations forces, making them the most at risk of all military units. The Timbels are committed to changing this.

When the one and one are Margot and Ned Timbel, 1+1 can definitely equal 3.

Scott Tinker

Response

To be blunt, we flunked retirement. Curiosity and compassion caused us to pivot from the wonder and uncertainty of hydrocarbon exploration to the amazing world of the brain and the body and how our life experience impacts them both. For any of you reading this with trepidation about what the future might hold in "retirement", be prepared to flunk out of leisure. Get ready to investigate other aspects of your world with your abundant skills and curiosity. Don't hesitate. Life is wondrous and full and short. We are grateful we jumped off into uncharted territory.

Thank you to our crew of nominators who shall go unnamed but are deeply appreciated. You kept your secret well. So well in fact that we had no idea why Mike Party was calling us last summer.

Thank you to Scott Tinker and his way with words and ideas. Our

friendship over many decades means a great deal to us.

Thank you to AAPG for being such a wonderful professional organization—full of opportunity, optimism, advocacy, determination and fine people of all generations.

Thank you to our family who indulge our deep and wide-ranging interest in trauma, brain science, and interpersonal neurobiology. And yoga, of course.

Most of all, we want to thank the men and women who were drafted or volunteered to serve our country in any branch of the military. They put themselves and their families in the line of fire. They continue to endure unforeseen consequences, even those who never experienced direct combat. We are grateful for their service and we hope they find Comeback Yoga is of service to them.

Margot and Ned Timbel

WILLIAM (BILL) R. DUPRE
Public Service Award

Citation—William (Bill) R. Dupre: For a truly dedicated outstanding instructor, one continuously striving to inspire and educate students from grade to graduate school as well as the public-at-large. For a truly dedicated outstanding instructor, one continuously striving to inspire and educate students from grade to graduate school as well as the public-at-large.

William (Bill) R Dupre is eminently worthy of the AAPG Public Service Award. Throughout his long and highly valued career as a faculty member in the Earth and Atmospheric Department, University of Houston, Bill has been involved in numerous outreach services as well as those within the professional organizations. As an example of his longtime valued service to the geologic as well as lay communities, more than 20 years ago Bill received the Distinguished Service Awards from the Texas Earth Science Teachers Association (1997) and more recently from the Houston Geological Society (2019).

Bill's educational background in geology includes University of Houston (1964-1966), The University of Texas (B.S. 1968, M.A. 1970), and Stanford University (M.S. 1974, Ph.D. 1975). Bill was an assistant professor at Wesleyan University (1974-1976) before we at the University of Houston could attract him to join our Geology Department (1976-2019).

A minor portion of Bill's outreach contributions include (1) service to professional organizations: co-chair of technical sessions for the GSA and AAPG/SEPM, chaired SEPM Coastal Sedimentation Research Group, Houston Geological Society Treasurer (1985-1986), Executive Committee member (1991-1993), and director (2004-2006); member AAPG Publication Committee (1982-1984), and AAPG Delegate (1989-1990, 2000-2002). (2) extracurricular service related to teaching include: AGI - Advisory Board for Earth Science Curricula (K-6) (1991-92). Bill worked with the AGI to expand the high school and middle school earth science curriculum. He was a member of Science Advisory Board: Children's Museum to develop a major Earth Science Project (1992-1994). He also was a committee member to develop teaching standards (TEKS) for a high school course in earth science (2006-2008). Bill followed that by organizing the Houston area hub of geoscience and education faculty along with Houston high school teachers as part of a statewide initiative to increase geoscience activity (and minority involvement) at the high school level (2010-2014). Most impressively, Bill has made more than 70 visits to K-12 classrooms to provide talks to inform and excite interest in geology. (3) environmental concerns: he has become deeply involved with informing the lay public concerning flooding in the Houston area, a topic of immense regional concern following the devasting effects as a result of Hurricane Harvey. He tirelessly worked on the planning and

production of a significant conference: "Flooding in Southeast Texas: The Science Behind the Flooding." His concern was to get the lay public to better understand how the geologic conditions were related to the flooding so that the public as well as local governments could plan and hopefully avoid similar future disasters. As one result, Houston Geological Society's Community Outreach has initiated: "Flooding and Floodplains in Houston: Past, Present and Future." Bill has been active in presenting talks at a number of community centers. One example, at the Bayland Community Center, focused on Brays Bayou and this free outreach drew 95 local residents. He has given similar presentations to residents of Cypress Creek Watershed, Buffalo Bayou Watershed, West Fork of the San Jacinto River Watershed, Houston Canoe Club, etc. In the last few years Bill has also given interviews to the *Houston Chronicle* as well as the NPR pertaining to the impact of sand mining on the San Jacinto River, a topic related to the flooding. (4) Another aspect of Bill's service to the lay community is evident in his two lectures at Houston Museum of Fine Arts: "The role of geology on influencing modern landscape artists", these presentations were associated with an exhibit on "The Modern West: American Landscapes."

As indicated by the abbreviated synopsis of Bill's service, William R. Dupre is not only worthy of receiving AAPG's Distinguished Service Award, but is an exemplary standard of such service.

Henry S. Chafez

ROGER A. "PETE" MATUSZCZAK

Pioneer Award

Citation (Posthumously)–To Pete Matuszczak, for his perseverance and geologic insight leading to the discovery of Colorado's giant Wattenberg field some 50 years ago, paving the way for the production from tight oil and gas prospects around the world.

Pete Matuszczak was born in the small town of Shawano, Wisconsin in 1926. He served his country in the infantry in the Pacific Theater during World War II. Following the war, Pete attended the University of Wisconsin, graduating with bachelor's and master's degrees in geology in 1950 and 1951. He then went to work for Stanolind Oil and Gas Corporation (part of Amoco), eventually settling with his wife and growing family in Colorado in 1954.

While with Amoco in the late 1960s, Pete observed that nearly all wells drilled over a large area in northern Colorado had water-free gas shows. He mapped this area along the Denver Basin as a delta-front depositional system in the tight "J" sandstone of the Dakota Group. Pete became convinced that individual finds in the area were part of a much larger prospect. He further thought that commercial production was possible from the area if the "J" was stimulated with the new technique of massive hydraulic fracturing, which Amoco was then beginning to deploy. Although skepticism initially existed, Pete persevered and successfully persuaded Amoco to drill further exploratory wells in the area, resulting in the discovery of the Wattenberg Field in 1970.

In the late 1970s Pete left Amoco and joined Tiger Oil Company, where he worked as a geologist until the company folded in the late 1980s. He went back to work for Tiger Oil in the mid 2000s after the company was reorganized. Pete remained with Tiger Oil working on prospects until his retirement in 2010. Between his stints with Tiger Oil, Pete bought and operated the Cordial Lounge on West Colfax in Denver, Colorado, where many of his oil industry friends still gather each week.

Pete Matuszczak was a longtime member of the Rocky Mountain Association of Geologists

(RMAG). He served as its president in 1976. Pete was recognized by the RMAG in 1981 as their Explorer of the Year. In their recognition the RMAG noted that, in the exploration effort of a large organization, it was rare for a responsible party of a discovery to be singled out from the team effort of many individuals. It further noted that this was not the case in the Wattenberg field discovery. The testimony of Amoco coworkers singularly acclaimed Pete Matuszczak's origination of the prospects, determination, and responsibility for the pursuit of the multi-well evaluation with the successful discovery of Wattenberg. Based on its remaining reserves the US Energy Information Administration recently stated that Wattenberg is the fourth largest oil/condensate field and the ninth largest natural gas field in the country. It is the largest field in the state of Colorado and one of the largest in the Rocky Mountain Region.

Always ready to explore, Pete almost single-handedly built the family a log cabin on property near Granby, Colorado. He was also active in the Boy Scouts of America, serving as both a merit badge counselor and Eagle Scout Review Board member. In addition, he was a member of the Kiwanis Club, serving as its Southwest Denver chapter president in the late 1970s. Even retired Pete never stopped exploring and talked of the geology of the Mississippi Delta and its possible similarities and implications to other sites with his eldest son the day before he passed at the age of 93.

Lee A. Matuszczak and Matthew R. Silverman

JANINE KRIPPNER
Geosciences in the Media Award

Citation—To Janine Krippner for her stellar work communicating complex information about the world's volcanoes to a general audience and her never-ending battle against explosive misinformation.

By the age of 13, Janine Krippner had already chosen her career: volcanologist. Born and raised in the New Zealand town of Te Awamutu, she grew up surrounded by these geologic giants. She understood their power to both give and take—and wanted to help communities nestled in their shadows.

Her first love was Mount Doom, a volcano on New Zealand's North Island formally known as Ngauruhoe. Krippner was inexplicably drawn to it as a child. Later, she had the chance to study its explosive past as a master's student at the University of Waikato mentored by Roger Briggs.

After graduating in 2009, she headed to Perth, Australia, to work as an exploration geologist at Shell. Two years later, she returned to her volcanic roots on the other side of the Pacific, studying pyroclastic flows as a doctoral student at University of Pittsburgh. But after her graduation in 2017, the question of what's next loomed as large as Mount Doom.

At the time, hurricane season was in full swing as Harvey, Irma, and Maria battered Atlantic coasts. Meteorologist took to social media to communicate the storms' dangers—and the world listened. Krippner watched with growing fear; volcanologists lacked similar lines of communication with the public. If an eruption tore through a densely populated region, it was unclear what would feed the internet's hunger for information.

She didn't have to wait long to find out. That September, Indonesia's Mount Agung grew restless. A message from a friend visiting Bali alerted her to brewing danger: Many weren't sure where to get reliable information about the risks. Despite Indonesian officials' tireless work to issue warnings, many tourists didn't know where to find them. Even if they did, volcanic jargon and Google Translate jumbled the meanings. So Krippner started translating, one tweet at a time.

To her surprise, the tweets took off and media requests poured in by the dozen. For the next three months, as the volcano rumbled, Krippner spent her nights camped out at her kitchen table communicating official warnings to a general audience. It was exhausting, but it solidified her goals to work with others and

strengthen lines of communication between scientists, media, and the public.

Now with Smithsonian's Global Volcanism program, she continues this work today: devoting her life to getting understandable, reliable information on the world's volcanoes to those in need.

Maya Wei-Haas

SEAN KIMIAGAR
Young Professionals Exemplary Service Award

Citation—For understanding the importance of pushing for change and supporting peers to excel at their best level every day. Sean is a constant reminder that AAPG members have each other, and that is a lot!

Sean Kimiagar is a true cowboy who doesn't focus on what was, but instead what could be. Sean is a natural mentor due to his approachable nature, business acumen, and willingness to offer openness to offering one-on-one career advice and mentoring to Students and Young Professionals.

Sean completed his B.S. in petroleum geoscience at the Petroleum Institute, an ADNOC founded university affiliated with the Colorado School of Mines. Early in his education, he quickly learned that his original academic ambitions to study petroleum engineering didn't hold a candle in the wind to geology. His first exposure to the science was an engineering field trip engineering field trip where he was instructed to describe the rocks observed in a road-cut. Sean noted that studying the subsurface was much more enjoyable than studying differential equations, and immediately switched his focus to geology. He went on to complete a management certificate at Stanford University before receiving his M.S. degree in 2013 from The University of Texas at Arlington.

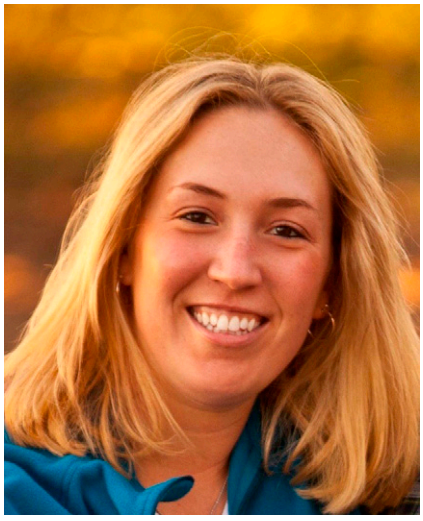
During his time as an M.S. candidate, his engagement with AAPG accelerated, like a rider on a steel horse, when past AAPG president Scott Tinker, recommended him for a spot at the Global Student Chapter Leadership Summit (2009). At that conference, Sean saw the positive impacts of mentoring and the importance giving back can have for individuals and organizations alike. Those lessons encouraged him to form the Kimiagar Foundation, which has focused on assisting relief efforts after Hurricane Harvey and other natural disasters.

During his professional career, Kimiagar has worked as a geologist in the Halliburton earth modeling team, led C&C Reservoirs business development efforts in the Middle East, worked all active United States shale plays as A&D geologist for Detring Energy Advisors, and is currently a technical advisor at Enverus.

He has served on the House of Delegates Credentials Committee (2017-2018), the DEG Executive Committee (2015-2016), and the Regions from (2009-2012). In addition, Sean has presented to multiple student chapters on career planning and professionalism.

Sean is the kind of a person that you can always rely on. He is able to take on any challenge without complaint, and give it his all. He will push you to grow into a better person, while quietly working behind the scenes to support that growth.

Richard Ball



KRISTEN LEE WOODEN
Young Professionals Exemplary Service Award

Citation—For exceptionally selfless leadership, enduring contributions to student and young professional programs, and sustained promotion of the aims of AAPG.

Kristen Wooden was born in Worcester, Massachusetts. Like many of us, Kristen fell into geology after

taking an introductory college geology course. She enjoyed it so much that she changed her major from business to geology the following semester. She graduated with honors in geology with a concentration in business management from Albion College in 2009.

Kristen then attended the University of Nebraska and earned a master's degree in geology in 2012. She competed in the 2011 AAPG Imperial Barrel Award program and her team won the Section semifinal and ultimately took part in the international final. She also served as the University of Nebraska AAPG Chapter President from 2011 to 2012.

Kristen attended AAPG Leadership Days as a student chapter representative, when she met Richard Ball and Stephanie Thomas, then AAPG Student Chapter Committee Co-chairs, who recommended Kristen to the Chevron AAPG Student Expo recruitment team. After an interview with Chevron at the AAPG Student Expo, Kristen started full-time employment in the deep-water Gulf of Mexico exploration team and then worked offshore West Africa appraisal, offshore Angola asset development and deep-water Gulf of Mexico operations. She is currently conducting exploration and appraisal geology in the Mid Continent business unit.

Since joining Chevron, Kristen has served as a member of the AAPG Student Expo Committee (2016-2018), secretary of the AAPG Imperial Barrel Award Committee (2013-2015), and chair of the AAPG Imperial Barrel Award Committee (2015-2018). While serving on the AAPG Imperial Barrel Award Committee, Kristen and her husband, Steve, welcomed children, Keeley and Emma. Their second child arrived only seven days before the 2017 Houston ACE, yet Kristen demonstrated her dedication as IBA chair by presenting the IBA awards as promised. She says this was possible because she was close to home, but one might marvel at Kristen's ability to manage personal and professional responsibilities and her unflappable demeanor.

Kristen attributes her career at Chevron to the opportunities AAPG provided; from the skills learned in the AAPG Imperial Barrel Award program to meeting the people who would eventually open the door to her career. Kristen is actively looking for new ways to serve the AAPG, and we are fortunate that she is so willing to give back.

David R. Cook

GÁBOR C. TARI
Vlastimila (Vlasta) Dvořáková International Ambassador Service Award

Citation—To Dr. Gábor C. Tari, "international ambassador" of our profession, excellent geoscientist, industry expert and teacher, for his excellent service to the Association at the international level and his immense contributions to the success of many conferences organized globally by the AAPG.

Gábor C. Tari was born in Szeged, southeastern Hungary. In 1987 he obtained an M.Sc. degree in geophysics from Eötvös University, Budapest under supervision of Frank Horvath, and in 1994 a Ph.D. degree in geology and geophysics from Rice University where he was supervised by Albert Bally.

After finishing his Ph.D. Gábor joined Amoco and began his professional industry career, working first in Romania and then in Angola. He worked for a while for BP after it merged with Amoco, but eventually joined Vanco Energy Company in 1999. This assignment marked the beginning of his very fruitful studies offshore Africa in Morocco, Senegal, Ivory Coast, Ghana, Equatorial Guinea, Gabon, Namibia, Mozambique, and Madagascar. All these studies stimulated Gabor's interest in deep water basins, and as an effect in 2004 he started working on the Black Sea Basin. In 2007 he joined OMV in Vienna, Austria, working as the group chief geologist on numerous projects including Romania, Bulgaria, Egypt, Kazakhstan, the Kurdistan Region of Iraq, and various Mediterranean, Middle Eastern, and African basins.

It is worth to mention that, apart from numerous discoveries, his work resulted also in an impressive string of high-level publications, something of which many

full-time professors of geology could be only jealous.

Very early in his professional career Gábor became very active in various professional societies, including AAPG, which he joined in 1991. His exposure to various countries and continents and involvement in diverse exploration projects allowed him to very quickly become deeply engaged in activities of our Association.

Gábor has an exceptional track record of being the main driver or a catalyst for many events organized by AAPG. The list of AAPG conferences he co-organized either as a conference cochair or organizing committee member is truly impressive and includes events in Kiev (2010), Marrakech (2011), Baku (2012), Barcelona (2013), Tbilisi (2013), Bucharest (2016), London (2017), Granada (2017), Lisbon (2018), Vienna (2019), Krakow (2019), and Batumi (2019); and there is more in the pipeline of course: Athens (2020) and Madrid (2020).

Gábor's other assignments related to his work on behalf of the AAPG include

- Distinguished Lecturer in Central and Eastern Europe (2011-2002)
- member of the International Regions' Committee (2001-2004)
- member of the International Subcommittee of the Distinguished Lecturer Committee
- associate editor of the Bulletin (2009-2014); and member of the House of Delegates (2010-2016).

Besides working in the oil and gas industry, Gábor is also engaged in academic affairs by teaching seismic interpretation to graduate students, for a number of years at Rice University, Houston, Texas, and more recently at the University of Vienna in Austria. In this role, he is also part of the AAPG Visiting Geoscience Program and is instrumental in providing high-level education to large numbers of AAPG Student Chapters in Europe and beyond.

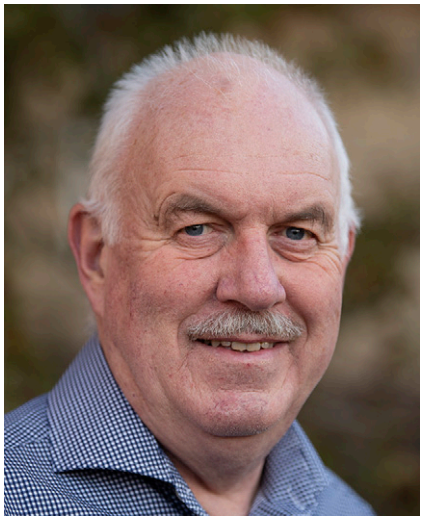
The list of Tari's achievements as an international ambassador for AAPG is truly impressive, and I'm sure would be very hard to surpass. I cannot think of a better candidate for Vlastimila (Vlasta) Dvořáková International Ambassador Service Award – and I'm also sure that Vlasta, dear friend of both of us, would fully agree with me. This is highly deserved award.

Piotr Krzywiec

TOR OFTEDAL SØMME
Wallace E. Pratt Memorial Award

TONY DORE
Wallace E. Pratt Memorial Award

ERIK LUNDIN
Wallace E. Pratt Memorial Award



BJØRN OVE TØRUDBAKKEN
Wallace E. Pratt Memorial Award

The Wallace E. Pratt Memorial Award for the best paper published in the *AAPG Bulletin* is presented to Tor Oftedal Sømme, Tony Dore, Erik Lundin, and Bjørn Ove Tørudbakken for "Triassic–Paleogene paleogeography of the Arctic: Implications for sediment routing and basin fill" (*AAPG Bulletin*, v. 102, no. 12, p. 2481–2517).

Their work describes a regional view of the tectonostratigraphic evolution of the Arctic from the Triassic to the Paleogene. The paper emphasizes the temporal and spatial link between tectonic deformation and basin stratigraphy and discusses the resulting paleogeographic evolution throughout the region.

Tor Oftedal Sømme received his M.Sc. in 2005 and his Ph.D. in 2009 from the University of Bergen. He then joined Equinor working as an exploration geologist, later moving into research. His main interest is stratigraphic analysis of sedimentary basins and the link between onshore and offshore sediment routing systems

Tony Dore held senior technical and leadership positions with Equinor (formerly Statoil) for 25 years, including vice present Americas/North America (2002-2011). He is now global chief scientist with the Energy & Geoscience Institute.

Tony has published on stratigraphy, Atlantic-Arctic evolution, basement reactivation, basin modeling, passive and transform margins, and hyperextension and exhumed petroleum systems. His awards include the Petroleum Group Medal (2006), Order of the British Empire in 2010, AAPG Special Award, (2011), William Smith Medal of the Geological Society (2015), and Lifetime Achievement Award from the Geological Society Petroleum Group (2017).

Erik Lundin is an exploration geologist at Equinor. He received a B.S. (1984) from Fort Lewis College, a M.S. (1987) from the University of Arizona, and a Dr.Philos. (2008) from the University of Oslo. His main interests are structural geology, regional geology, and tectonics. He has worked extensively in the Atlantic and the Arctic.

Bjørn Ove Tørudbakken received his Cand. Real. from the University of Oslo in 1982. After working 4 years in academia, he started in the oil industry in 1986. He is presently working with international exploration at Equinor. His main interests are regional geology and exploration concepts.

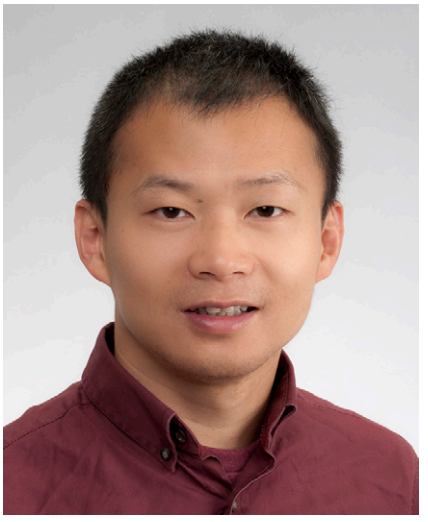
TERRILYN OLSON
Robert H. Dott, Sr. Memorial Award

The Robert H. Dott, Sr. Memorial Award is presented to honor and reward the author/editor of the best special publication dealing with geology published by the Association. This year's award is presented to Terrilyn Olson for *Memoir 112: Imaging Unconventional Reservoir Pore Systems*.

This memoir covers recent advances in the acquisition and application of high-resolution image data to unconventional reservoirs, with emphasis on integrating multiple techniques. The 10 papers address the importance of mineralogy, organic matter content, and fabric to reservoir quality issues.

Terri is a petroleum geologist and petrophysicist with 37 years of experience working with Amoco, BP, several independents including EOG, and the digital rock group of a technology company. She has been involved with AAPG publications for more than 20 years as author, reviewer, associate editor, and book editor. She is currently

consulting on image interpretation and integration and lives in Golden, Colorado.



LEI JIANG
J. C. "Cam" Sproule Memorial Award

The J. C. "Cam" Sproule Memorial Award, presented to the author(s), age 35 or younger at the time of submittal, in recognition of the best paper published by the Association or any affiliated society, division, or section, is awarded to Lei Jiang for "Diagenesis of an evaporite-related carbonate reservoir in deeply buried Cambrian Strata, Tarim Basin, northwest China" (*AAPG Bulletin*, v. 102, no. 1, p. 77–102).

This paper emphasizes the crucial role of diagenesis, especially dolomitization, fracturation, and thermochemical sulfate reduction (TSR), impact on deeply burial, evaporiate-related carbonate reservoir of Cambrian age in the Tarim Basin, northwest China. Therefore, the Cambrian carbonates is likely a potential target in future exploration in this basin.

The co-authors of this paper are Richard H. Worden, Chun Fang Cai, Anjiang Shen, and Stephen F. Crowley.

Lei Jiang is an associate professor at the Institute of Geology and Geophysics, Chinese Academy of Sciences, and a visiting associate professor at Chengdu University of Technology (CDUT). He received his B.S. (2007) from CDUT and Ph.D. (2013) from the University of Chinese Academy of Sciences. He has worked for the University of Liverpool (2011–2013 and 2014–2015) as a visiting researcher, the Bureau of Economic Geology at The University of Texas at Austin (2015–2017) as a postdoctoral fellow, and Yale University (2017-2018) as a visiting associate professor. His research interests focus mainly on carbonate geochemistry, diagenesis, and paleoclimate.

JOHN C. DOLSON
John W. Shelton Search and Discovery Award

ZHIYONG HE
John W. Shelton Search and Discovery Award

BRIAN W. HORN
John W. Shelton Search and Discovery Award

John Dolson, Zhiyong He, and Brian W. Horn received the John W. Shelton Search and Discovery Award for the most outstanding contribution to the AAPG Search and Discovery website titled "Advances and perspective on stratigraphic trap

exploration-making the subtle trap obvious"

This paper represents a culmination of a 40-year effort by the senior author to explore effectively for stratigraphic taps. In 1989, Amoco held an internal 'subtle traps' conference which resulted in realization that "there was no point looking for a subtle trap… we had to learn how to make then obvious." That effort translated into increased emphasis on seismic visualization and better integration of sequence stratigraphic principles and applied petrophysics with workstations and peer reviews.

Our paper also builds upon Michel Halbouty's leadership in generating a half century of giant fields memoirs that underpinned the analysis presented in this paper. In 2003, Myron K. Horn published the first AAPG Giant Fields database in GIS format. That work resulted in insightful papers with Paul Mann, Horn and others in 2003 and 2007. Unfortunately, Myron passed away at age 86 in 2016 and the database was last updated in 2010. Robert Merrill and Charles Sternbach have kept the giant fields tradition live and we've built upon that work.

In 2017, the authors were invited to give a talk of stratigraphic trap exploration in the Middle East in Oman at an AAPG GTW workshop. We knew this database would hold the key to new insights. Analogues help us understand evolving technologies and give insight into new ideas and new areas. We added an additional 107 fields to the GIS database for the 2017 meeting and to date have edited and reviewed an additional 500 fields, including updating trap type, reservoir depths and location.

John C. Dolson is the director of DSP Geosciences and Associates and a senior advisor to Delonex Energy, LTD (London). He received is B.A. in natural sciences from Colorado College in 1971 and an M.Sc. in earth sciences from Colorado State University in 1981. He grew up in St. Louis, Missouri, collecting fossils along local outcrops and became hooked on geology about the time he learned how to read. He began his professional career as summer park ranger at Black Canyon of the Gunnison National Park in Colorado, combined with teaching earth and life science in Loveland, Colorado, until heading to graduate school at CSU in 1979.

In 1994, John moved to Egypt for an 8-year stint in the Gulf of Suez, Western Desert, and Nile Delta, where he served as a senior advisor for many teams that found giant fields and difficult traps through better data integration and visualization. John joined BP in the United Kingdom for 18 months in London and then 4 years as senior advisor to TNK-BP in Russia, where he was involved with unraveling two giant stratigraphic traps and extensive training for Russian staff. While in Russia he also served as AAPG vice president (2007).

He formed DSP Geosciences and Associates in 2008 and has worked globally with over 30 companies, primarily in basin and play analysis, high resolution sequence stratigraphy (with his late partner, George Pemberton). He joined Delonex Energy in 2013 as senior geological advisor where he continues to look for oil in Africa.

Zhiyong He is the founder and principle at ZetaWare, Inc. and has been dedicated to developing practical solutions and software tools for exploration focused petroleum system analysis. The software suite, Trinity 3D, Genesis, and Kinex, is now used in nearly 200 companies worldwide, from small startup exploration companies, to multi-nationals, and NOCs.

Zhiyong grew up in the Gobi Desert in western China. After high school, he worked in the farm fields for 3 years as part of a "re-education" program during the "cultural revolution." His first job was as a cargo train "hook-up" engineer in the railroad transportation division of a steel works near the west end of the Great Wall. After obtaining a Ph.D. in geology from University of South Carolina, Zhiyong worked for Atlantic Richfield as a basin modeler, and was the principle developer of ARCO's basin software.

In the last 20 years as a software developer and consultant, Zhiyong has taught more than 100 private and public training courses on petroleum system analysis and basin modeling for clients worldwide. The classes are aimed at various levels and subjects for young professionals, senior geoscientists and exploration managers as well as government researchers.

He has been involved in or helped with projects and clients in some of the most significant discoveries in the last 15 years, including Jubilee, Mangala, Johan Sverdrup, SNE, and Zama.

In the recent years, Zhiyong has been focusing on developing the Trinity software suite as a platform for integrating all types of geological data (especially fluids) and developing the concept of top-down petroleum system analysis to compliment the bottom-up basin modeling approach. His recent research involved looking for geospatial trends and patterns in petroleum fluid properties, and the interpretation of processes that control fluid type properties, such as expulsion and migration fractionation.

Brian Horn has worked in exploration and production for 28 years with Amoco, BP, and Maersk Oil prior to joining ION in 2010. In his current role he is responsible for the technical and commercial advisory group to support E&P operators, NOCs, and government ministries. His experience includes play-based exploration, basin and play fairway analysis, petroleum systems, regional stratigraphic and seismic correlations, prospect development, integration of geological and engineering and production data for appraisal and development projects, and resource potential assessments. In his previous roles with E&P operators he has delivered exploration portfolios, exploitation and development programs, prospect generation, and development-scale reservoir characterization for (infill) drilling designed to identify and evaluate critical geologic uncertainties focused on increasing recovery efficiencies and reservoir management strategies. Horn received his bachelor's and master degrees in geology from the University of Colorado, Boulder and his Ph.D. in geology and gological engineering from the Colorado School of Mines, Golden, Colorado.

JOHN HOLBROOK
George C. Matson Memorial Award

SARAH D. ALLEN
George C. Matson Memorial Award

The George C. Matson Memorial Award for the best paper presented during an oral technical session at the Annual Convention and Exhibition is presented to John Holbrook and Sarah D. Allen for "Braided vs. meandering a valid distinction?"

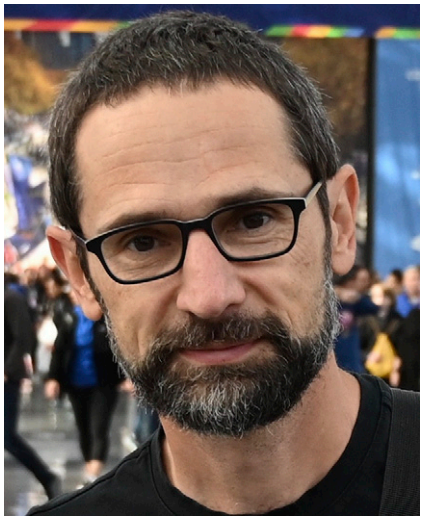
Braided and meandering are traditionally treated as separate river patterns. Braided streams can meander; thus, the distinction between meandering and braided, while practical, is not valid. Meandering in braided streams is accomplished by preferential welding of mid-channel bars to the inside bend of point assemblages.

John Holbrook is a professor at Texas Christian University. He has held adjunct and guest professor positions at Enugu State University, Nigeria; St Petersburg State University, Russia; University of Texas at Dallas; and Hebrew University, Jerusalem. His research is focused on fluvial and sequence stratigraphy. He has geology degrees from University of Kentucky (B.S.), University of New Mexico (M.S.), and Indiana University (Ph.D.). He was principal investigator for the NSF SedHeat Network in geothermal energy and is a past member of both GSA and SEPM councils. He was a Distinguished Lecturer for AAPG. He a licensed Professional Geologist and a principal investigator for the Fluvial Research Group (FRG) industry consortia.

Sarah completed her undergraduate degree at The University of Texas at Arlington and master of geology degree at Texas Christian University in Fort Worth. Her master's work focused on the dynamics of braided rivers, specifically the role of mid channel

bars in the lateral migration of braided channels. Sarah is currently working as an asset geologist at Chesapeake Energy in Oklahoma City.

JACOB COVAULT
Jules Braunstein Memorial Award



ZOLTÁN SYLVESTER
Jules Braunstein Memorial Award

MICHAEL R. HUDEC
Jules Braunstein Memorial Award

CAN CEYHAN
Jules Braunstein Memorial Award

DALLAS B. DUNLAP
Jules Braunstein Memorial Award

The Jules Braunstein Memorial Award for the best poster presented at the AAPG Annual Convention and Exhibition is presented to Jacob A. Covault, Zoltán Sylvester, Michael R. Hudec, Can Ceyhan, Dallas B. Dunlap for "Deep-Water Channels "Swept" Downstream After Bend Cutoff in Salt Basins."

Submarine channels are important, but heterogeneous hydrocarbon reservoirs. In the deepwater Campos salt basin, we interpreted structural control on the formation of commonly overlooked patterns of channel evolution, which we tested with numerical models of channel meandering. We expect similar depositional processes and products in other petroliferous deepwater salt basins.

Jacob Covault is a research scientist and leader of the Quantitative Clastics Laboratory at The University of Texas at Austin. His expertise is the sedimentology and stratigraphy of

deep-water depositional systems, and source-to-sink sediment dispersal. Prior to his time at UT-Austin, Jacob was a senior research scientist at Chevron Energy Technology Company and served the Department of the Interior at the US Geological Survey. He received Ph.D. and B.S. degrees in geological and environmental sciences at Stanford University, where he played football 1999-2003. Jacob was the recipient of the 2017 SEPM Wilson Award in recognition of "Excellence in Sedimentary Geology by a Young Scientist."

Michael Hudec is a senior research scientist at the Bureau of Economic Geology, The University of Texas at Austin. At UT he is the principal investigator of the Applied Geodynamics Laboratory (AGL), an industry-sponsored research project studying salt tectonics. Michael's research interests are the influence of tectonics on the evolution of salt basins, the mechanics of salt-diapir growth, structural restoration of salt structures, and processes governing evolution of mobile shales.

Dallas Dunlap is a research scientist associate at the Bureau of Economic Geology at The University of Texas at Austin where his research focus is centered around the interaction of mass-wasting processes and submarine channel evolution. Dallas is involved with several committees and boards at both Society of Exploration Geophysicists and AAPG and is currently co-chair of the AAPG Visiting Geoscience Program. He is passionate about the outdoors and for fostering a greater appreciation of earth sciences and the future of energy utilization.

Editor's Note: Biographical information on Zoltán Sylvester and Can Ceyhan was not available at the time of publication.

FENGLIN GAO
SEG/AAPG Best Paper in *Interpretation* Journal Award

YAN SONG
SEG/AAPG Best Paper in *Interpretation* Journal Award

ZHUO LI
SEG/AAPG Best Paper in *Interpretation* Journal Award

ZHENXUE JIANG
SEG/AAPG Best Paper in *Interpretation* Journal Award

ZHIYE GAO
SEG/AAPG Best Paper in *Interpretation* Journal Award

XINXIN ZHANG
SEG/AAPG Best Paper in *Interpretation* Journal Award

LEI CHEN
SEG/AAPG Best Paper in *Interpretation* Journal Award

QINGXIN LIU
SEG/AAPG Best Paper in *Interpretation* Journal Award

Fenglin Gao, Yan Song, Zhuo Li, Zhenxue Jiang, Zhiye Gao, Xinxin Zhang, Lei Chen, and Qingxin Liu have been recognized for their authorship

of the best paper published in the SEG/AAPG

Interpretation journal titled "Pore characteristics and dominant controlling factors of overmature shales: A case study of the Wangyinpu and Guanyintang Formations in the Jiangxi Xiuwu Basin" (*Interpretation*, v. 6, no. 2, p. T393-T412).

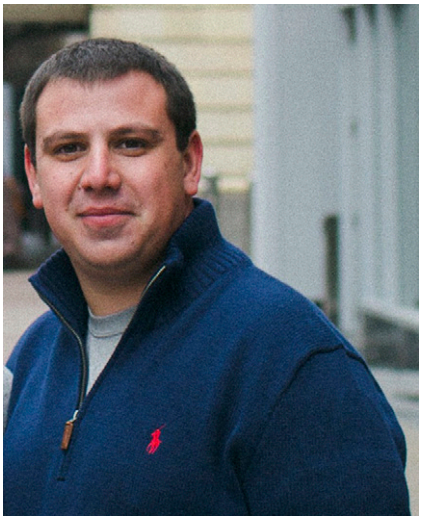
Because of the great potential for hydrocarbon generation, the Lower Cambrian Wangyinpu and Guanyintang Formations of the Jiangxi Xiuwu Basin have become the most important targets for shale-gas exploration in the Jiangxi province. We investigate the pore characteristics and main controlling factors of overmature shale using field emission-scanning electron microscopy, image-processing software (i.e., the Particles [Pores] and Crack Analysis System), X-ray diffraction, and gas-adsorption experiments. The results show that the shales have a high abundance of organic matter (OM), over maturity, and highly siliceous mineral content. The kerogen type is identified as type I. OM pores are the most developed, followed by interparticle (interP) pores and intraparticle (intraP) pores. We combine complementary image processing and gas-adsorption methods to reveal that micropores are mainly from OM pores; mesopores are from OM pores and interP pores; and macropores are from OM pores, interP pores, and intraP pores. Although the number of micropores is at a maximum, the total contribution of mesopores and macropores to the pore volume (PV) is larger than that of micropores. However, the specific surface area (SSA) is mainly from the micropores. OM content and maturity are the main controlling factors for the development of pore structures. Because of overmaturity, OM loses its potential for hydrocarbon generation and new pores cannot be produced. Gas loss leads to reservoir pressure drop, and the pores generated during the mature stage collapse and even disappear because they lack support. Therefore, PV, SSA, and porosity decrease when the OM content is more than 10%. When the OM content is less than 10%, most of the OM pores are preserved because they are protected by the skeleton particles.

Fenglin Gao, the main author of the paper, is a doctoral graduate student at the Research Institute of Unconventional Oil and Gas Science and Technology, China University of Petroleum (Beijing). She is mainly engaged in the research work of unconventional oil and gas accumulation and distribution regularity.

Editor's Note: Photographs of Yan Song, Zhuo Li, Zhenxue Jiang, Zhiye Gao, and Qingxin Liu were not available at time of publication. Biographical information for Yan Song, Zhuo Li, Zhenxue Jiang, Zhiye Gao, Xinxin Zhang, Lei Chen, and Qingxin Liu was not available.

MAISHA AMARU
Gabriel Dengo Memorial Award

TAO SUN
Gabriel Dengo Memorial Award



FABIEN J. LAUGIER
Gabriel Dengo Memorial Award

MORGAN SULLIVAN
Gabriel Dengo Memorial Award

BRUCE POWER
Gabriel Dengo Memorial Award

BRIAN J. WILLIS
Gabriel Dengo Memorial Award

LISA R. GOGGIN
Gabriel Dengo Memorial Award

The Gabriel Dengo Memorial Award is given each year in recognition of the best paper presented at the previous year's AAPG International Conference and Exhibition. This year, the award is presented to Maisha Amaru, Tao Sun, Fabien J. Laugier, Brian J. Willis, Morgan Sullivan, Lisa R. Goggin, and Bruce Power for "Integrated Computational Stratigraphy Reservoir Characterization and Seismic Validation."

An integrated reservoir characterization approach is described that includes building high-resolution computational stratigraphy models and validating them against seismic data. The approach is demonstrated on the example of deep-water fans. This advanced type of integration allows for a better understanding of reservoir connectivity and the seismic expression of stratigraphic features.

Maisha Amaru holds a Ph.D. in geophysics from Utrecht University in the Netherlands. She joined the oil and gas industry and Chevron in 2007 and worked on applied and research projects around velocity modeling, seismic imaging and uncertainty analysis. In recent years, she focused on research projects that integrate geology and geophysics on both, exploration and reservoir scale. Currently, Maisha Amaru leads a team of earth science researchers who perform research and development on new quantitative stratigraphy, structural and reservoir modeling technologies for reservoir management.

Tao Sun has a B.S. in physics from Peking University and a Ph.D in physics from the University of Oslo, Norway. Tao Sun joined Chevron as a consultant research geologist in 2012. Currently, he is a senior principal scientist in Chevron. Tao Sun is mainly responsible for the development of the state of art physics based forward numerical models for deposition systems in both shallow and deep-water environment, and the application of these models to develop next generation sequence-stratigraphic concepts and depositional models, and new geologic modeling methods and technologies.

Fabien J. Laugier has been a research stratigrapher with Chevron since 2014, specializing in deep-water stratigraphy, modeling, and heterogeneity. He focuses on predicting reservoir heterogeneity and connectivity, and consults on international and domestic projects ranging from deep-water to unconventional to aeolian, and is the project manager for machine-enhanced stratigraphy R&D. He has significant field stratigraphy experience in 15 countries and leverages this to understand how fine-scale heterogeneity missed by subsurface sampling impacts performance. Prior to Chevron he received his Ph.D. in stratigraphy from Colorado School of Mines, focused on shelf-edge to deep-water deposits in the Karoo Basin, South Africa.

Brian Willis is a principle research geologist specializing in clastic stratigraphy and depositional modelling. His long-term research interests focus on relating surficial depositional processes to the spatial arrangement of preserved lithic bodies and predicting how lithic heterogeneities influence patterns of subsurface fluid flow. Previously Brian was an assistant professor at Texas A&M University, a research scientist at the University of Texas, a geologist at BP-Canada, and a research fellow at the Smithsonian Natural History Museum. Brian has a B.S. from the University of Minnesota and M.S. and Ph.D. from Binghamton University.

Morgan Sullivan is currently a senior earth science advisor with Chevron Energy Technology Company in Houston. In this role he is involved in developing and applying new technologies to aid in solving complicated reservoir problems. He maintains broad technical interests in the sequence stratigraphy and clastic depositional systems, with emphasis on developing and applying new technologies to aid in the prediction of areal reservoir distribution and connectivity when seismic data does not have the capability to detect /image the reservoir (deep, tight, sub-salt).

Lisa Goggin completed her masters and Ph.D. in geology at Indiana University. During 23 years at Chevron, she has been an exploration, development and research geologist who specializes in volumetric seismic interpretation and visualization. She has served as a corporate instructor for interpretation software and field schools and currently performs strategic research in seismic shale analysis and the integration of clastic computational stratigraphy models to exploration and development workflows. She has numerous patents and is an AAPG Distinguished Lecturer (2019-2020), board member (National Cave and Karst Research Institute), Registered Professional Geologist (ASBOG), and a member of AAPG, GSA, and HGS.

Bruce Power is a geological advisor in Interpretive Imaging Strategic Research with Chevron Energy Technology Company. He obtained his Ph.D. in geology from McMaster University in Hamilton, Ontario, Canada, in 1993 with a focus on clastic stratigraphy and sedimentology. He has been employed by Chevron since 1991, primarily on interpretation of shallow marine and deep marine clastic

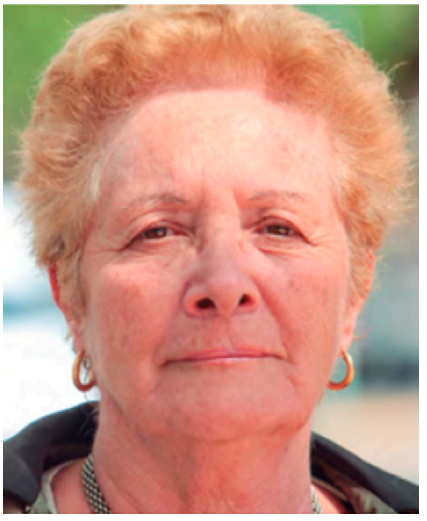
reservoirs. His current research focus is on geological property estimation from seismic data and geological data conditioning in machine learning applications to seismic data imaging and interpretation.

PABLO BARROS ARROYO
Ziad Beydoun Memorial Award

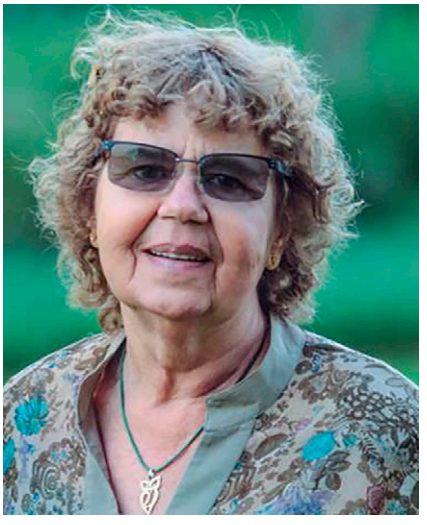
JULIANA MARINO
Ziad Beydoun Memorial Award

MURIEL MILLER
Ziad Beydoun Memorial Award

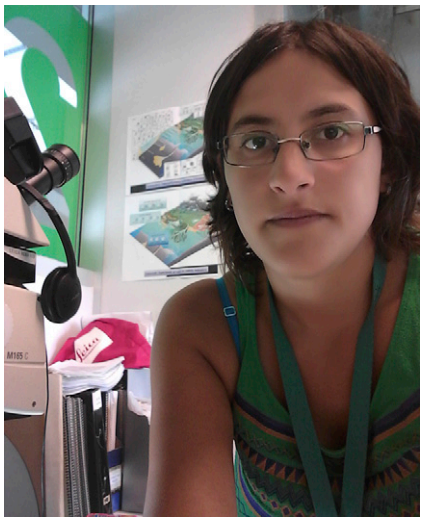
PABLO GIAMPAOLI
Ziad Beydoun Memorial Award



GLADYS NOEMI ANGELOZZI
Ziad Beydoun Memorial Award



DIANA I. RONCHI
Ziad Beydoun Memorial Award



M. LUCIANA HIRIART
Ziad Beydoun Memorial Award

The Ziad Beydoun Memorial Award is given each year in recognition of the best poster presented at the previous year's AAPG International Conference and Exhibition. This year, the award is presented to Pablo Barros Arroyo, Juliana Marino, Muriel Miller, Pablo Giampaoli, Gladys Noemi Angelozzi, Diana I. Ronchi, and M. Luciana Hiriart for "Regional Seismostratigraphic Model of the Tertiary Sedimentary Fill of the Austral-Magellan Fuegian Basin and its Potential Reservoirs."

This publication is the result of a regional study aimed to evaluate the reservoir potential of the Tertiary sedimentary fill of the Austral-Magellan Basin in the southernmost part of Argentina.

Pablo Barros is originally from Madrid, Spain. He studied geology at the University of Montpellier in France where he received his B.Sc. and M.Sc. in earth sciences and reservoir geology. He continued his studies at the Delft University of Technology, in the Netherlands, where he received his M.Sc. in petroleum engineering and geosciences in 2011. In 2011 he moved to Argentina to work for Repsol-YPF in the Subsurface Study Group where his main focus was detailed reservoir characterization for reservoir modelling. In 2019 he moved to Colombia to work as a geomodeler in Ecopetrol.

Muriel Miller received her M.Sc. in geology from the University of Buenos Aires and oil specialization from the Engineering College. She started as a stratigrapher in YPF Lab, interpreting sedimentary environments. Then moved to the Argentine south as well site geologist. After, she worked in the YPF Exploration Department building traps models and managing exploration projects. Following worked in Bridas in Exploration. Then shifted to work in CGC as E&D manager focusing Latin American basins, in ENAP in offshore projects, and in Apache as Advisor Geologist. Lately she worked in the YPF Upstream. Today works as Independent Basin modeler and stratigrapher

Pablo Giampaoli has a degree in geology from the Buenos Aires University and has 22 years of experience in the oil industry. He is currently working as a team leader for the International Exploration Group at YPF oil company. His main areas of expertise are structural geology, prospect volumetrics and risk analysis. He is also teacher of petroleum geology, basic pPetrophysics and basin analysis at the University of Buenos Aires. He has been an AAPG member since 1997.

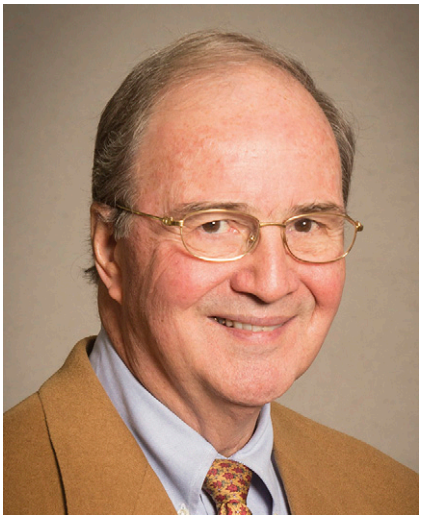
Gladys Noemi Angelozzi holds a degree in geology (1977) from the National University of La Plata. She has worked since 1980 in the Department of Biostratigraphy of the Research and Development Laboratory of Florencio Varela, where she began the study of calcareous nannofossils at the YPF S.A. Petroleum Company. Since 1994 she has been a managing partner of the GEMA S.R.L. Biostratigraphic Consultant where she studied associations of other South American oil basins. In 2014 she joined YPF-Tecnologia with her consultancy to lead the Biostratigraphy laboratory.

Diana I. Ronchi earned a degree in geology (1974) at Universidad Nacional de La Plata. From 1972 to 1980 she was a professor at the Department of Mineralogy of the Universidad Nacional de La Plata. Between 1975 and 1993 she worked as biostratigrapher at the Research and Development Laboratories of YPF. From 1994 to date she leads the consulting firm GEMA S.R.L. During those years she has studied all the Argentine oil basins and many South American basins and some of those studies were published in international journals of paleontology and geology. In 2014 she joined Y-TEC with her consulting company to lead the Biostratigraphy Laboratory.

Luciana Hiriart is a palentologist and works as tecnologo at YPF Tecnología S.A., where she develops biostratigraphic studies. She has studied at Universidad

Nacional de La Plata, Argentina and her work focuses specifically on analysis of microfossils.

Editor's Note: Biographical information for Juliana Marino was not available at the time of publication.



LEE B. BACKSEN
L. Austin Weeks Memorial Medal

The L. Austin Weeks Memorial Medal is given in recognition of extraordinary philanthropy and service to advance the mission of the AAPG Foundation. The premier Foundation award honors the late L. Austin Weeks, whose philanthropic legacy set an exemplary standard. The award was established in 2008 and is the

Foundation's highest award. Funding for the original award was provided through the AAPG Foundation Awards Fund. The 2020 recipient is Lee B. Backsen.

Backsen, a Foundation Trustee Associate since 1998 and a Trustee since 2012, has served in various roles as a Trustee Associate officer and on several AAPG committees, including the Advisory Council and the House of Delegates.

He received his bachelor's and master's degrees in geology from Iowa State University and began his exploration career in 1963 with Shell Oil in Houston, a 17-year stint that was followed by various officer and management roles with several companies, including Kerr McGee, Pelto Oil, Spectrum Oil and Gas, Burlington Resources, Grant Geophysical, UMC Petroleum and, as president of General Atlantic Gulf Coast, a subsidiary of General Atlantic Resources Inc.

From 2000 to 2008, as an oil and gas consultant, Backsen provided prospect evaluation and exploration management to industry clients that included Ft. Apache, Andex Resources, Continental Land & Fur Inc. and Grant Geophysical.

His leadership for AAPG and the AAPG Foundation has been just as successful, including twice serving as chair of the Trustee Associates' annual meetings, being the ACE Fundraising chair in 2004, and serving in the House of Delegates for 22 years.

He and his wife, Alice, also have been active with the Presbyterian Church in various global humanitarian outreach efforts.

M. RAY THOMASSON
Chairman's Award

The Chairman's Award is the first award established by the Foundation and is given to extraordinary contributions (either monetary or service) to the AAPG Foundation and also to call attention to the role and value of the Foundation. The Chairman's Award is given to remarkable people for their extraordinary support of the AAPG Foundation and its programs – in other words, it is a perfect descriptor of for the valuable and valued contributions made over the years by M. Ray Thomasson.

Thomasson has been a Foundation Trustee Associate since 1995 and a Trustee from 2011 until stepping down last year.

He has dedicated the past 40 years of a 52-year exploration career to advancing the use of multi-disciplinary teams in the

integration of geology, petrophysics, and geophysics, in order to explore for hydrocarbons using the "play concept."

Thomasson grew up in Columbia, Missouri, and his introduction to geology was as a junior in high school when he worked during the summer as a field hand on a mining survey crew, mapping phosphates in the Phosphoria formation in southeast Idaho. His interest in geophysics started with a job for United Geophysical as a jug hustler, assistant surveyor, and computer during his freshmen year in college.

He received both his bachelor's and master's degrees in geology from the University of Missouri, then served two years as an intelligence officer with the US Air Force. He then attended the University of Wisconsin, receiving his doctorate with the dissertation, "Late Paleozoic Stratigraphy and Paleotectonics of Central and Eastern Idaho."

He declined a job teaching paleontology and stratigraphy at the University of Illinois, instead starting his career as a junior geologist with Shell Oil in Midland, Texas. He went on to hold many positions at Shell, including manager of exploration and economics, acting chief of operations, and manager of forecasting planning and economics, which led to his being named Shell's chief geologist.

After leaving Shell he was named vice president of exploration for McCormick Oil & Gas. Eventually he formed Spectrum Oil and Gas, consulted for Texas Crude and then became president and CEO of Pend Oreille Oil Company before starting his present company, Thomasson Partner Associates Inc., in 1991.

For AAPG, Thomasson served on a host of AAPG committees in addition to being named an AAPG Distinguished Lecturer, chair of the Advisory Council and AAPG president Thomasson has been a Foundation Trustee Associate since 1995 and a Trustee from 2011 until stepping down last year.

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He received both his bachelor's and master's degrees in geology from the University of Missouri, then served two years as an intelligence officer with the U.S. Air Force. He then attended the University of Wisconsin, receiving his doctorate with the dissertation, "Late Paleozoic Stratigraphy and Paleotectonics of Central and Eastern Idaho."

He declined a job teaching paleontology and stratigraphy at the University of Illinois, instead starting his career as a junior geologist with Shell Oil in Midland, Texas. He went on to hold many positions at Shell, including manager of exploration and economics, acting chief of operations, and manager of forecasting planning and economics, which led to his being named Shell's chief geologist.

After leaving Shell he was named vice president of exploration for McCormick Oil & Gas. Eventually he formed Spectrum Oil and Gas, consulted for Texas Crude and then became president and CEO of Pend Oreille Oil Company before starting his present company, Thomasson Partner Associates Inc., in 1991.

For AAPG, Thomasson served on a host of AAPG committees in addition to being named an AAPG Distinguished Lecturer, chair of the Advisory Council, and AAPG president in 1999-2000. Such leadership brought him AAPG's Distinguished Service Award, Honorary Membership Award and, in 2009, the Michel T. Halbouty Outstanding Leadership Award.

He has four daughters and is married to Merrill Shields, who is an attorney and retired as chief-of-staff for Gale Norton, a former attorney general of Colorado.

REBEKAH KIENENBERGER
Teacher of the Year Award

The Teacher of the Year award is given for excellence in the teaching of natural resources in Earth sciences, K-12.

The AAPG Foundation has named Rebekah Kienenberger as the recipient of the 2020 Teacher of the Year award. Kienenberger is an Earth and space science teacher at Arete Preparatory Academy in Gilbert, Arizona.

Upon learning that she had been honored with the award, Kienenberger said, "I was absolutely shocked when I found out I had received the AAPG Foundation Teacher of the Year award. I know that what I do makes a difference but it can be easy to forget in the moment."

"Geology has been my heart and soul since high school but is often underrepresented and underestimated in terms of importance in schools. As an educator, it has been my goal to change the mindset around the field of geology and demonstrate why it is so crucial that all students learn about our Earth and its processes in order to better protect our planet and ourselves."

Kienenberger holds a bachelor's degree in geology from Missouri State University and a master's degree in geology from the School of Earth and Space Exploration at Arizona State University. She has been a faculty member of Arete Preparatory Academy for 8 years.

Corinne Jacobson, former assistant headmaster of Arete Preparatory Academy credits Kienenberger with writing Earth science curriculum and grants that have totaled nearly $200,000 for the school. Kieneberger also conducted "over 20 field trips to volcanoes, caves, copper mines, sand dunes, fossil digs and the Grand Canyon." In addition, she has "spent hours designing and hand-building materials for labs, such as live stream tables and environmental investigations … which give students a way to explore and participate in science through observation and data analysis."

"One of our core goals is to inspire the love of learning," Jacobson said. "Ms. Kienenberger consistently inspires her students inside and outside the classroom … she is a lifelong learner who brings enthusiasm and depth to the classroom."

"I am a teacher because I love what I do," said Kienenberger, "and I can think of no greater good than cultivating the minds, souls and character of the young people who will lead our world one day. Thank you AAPG for honoring the work that teachers do every day, particularly in the field of geology."

BRADFORD "BRAD" BURTON
Inspirational Geoscience Educator Award

Bradford "Brad" Burton, an associate professor in the Natural and Environmental Sciences Department at Western Colorado University (WCU) in Gunnison, Colorado, has been named as the 2020 Inspirational Geoscience Educator Award (IGEA) recipient. Burton holds the Rady Chair in Petroleum Geology at WCU, where he instructs and mentors undergraduate students. Burton says he uses a "practical approach to geoscience education by introducing students to real-world data and projects, challenging students to be problem solvers and to work with uncertainty."

Burton's current research, in collaboration with colleagues Elizabeth Petrie (WCU) and Kelly Bradbury (USU), focuses on the kinematic history of a graphitic fault zone in the Pioneer Mountains core complex in south-central Idaho, and relating that tectonic history to

modern and ancient faults in the region for Earth science education.

Burton grew up in Billings, Montana, a son of a petroleum geologist. "I do not recall a time when geology was not a major part of my life," he said. "Dad would strap me into his old Power Wagon and we would bounce across the Montana prairie through the night to some drilling rig or outcrop. By five, I would recite the geological time scale and wash the drilling mud from cutting samples."

After a tour of duty in the United States Marine Corps, Burton earned his bachelor's degree at Montana State University, his master's degree at Idaho State University and his doctoral degree from the University of Wyoming. His 18-year career in the petroleum industry included leadership and executive positions in frontier basin and international exploration for Norcen Energy, Shell Canada, Talisman Energy, and P1 Energy Corporation.

Former student, and current graduate student at Colorado School of Mines, Alex Branda said that "while studying seismic, petrophysics and production data associated with oil fields." Burton also introduced students to "the business variables as well. The challenges he presented in these projects was his way of using industry experience to help students problem-solve as geologists and formulate solutions as though we were working under specific economic business models." Branda said that Burton's teaching "shaped me into the geologist and professional I am today … I attribute him with much of my success over the past few years, and I'm more than optimistic for future geology students to come."

Another former student and current graduate student at Colorado School of Mines, Corey Milar had an internship in Canada, sponsored by Infinity Oil and Gas, with Burton as principal investigator. "[Burton] oversaw and supervised all aspects of our research. This experience enhanced my understanding of the oil and gas industry and provided practical work experience in petroleum exploration.

As a professor, Milar said that Burton "expects deliverables that are consistent with professional standards" and "encourages a positive, ethical, and team-driven environment, all while holding each individual accountable for the quality of their work."

Mentorship is a key component of Burton's pedagogical philosophy. "Throughout my career, the mentorship of professors and senior geologists with whom I worked has always been my most important guiding force," Burton said, "and it is that type of mentorship that I have tried to bring to students at Western Colorado University."