The SEG Foundation advances geophysics today and inspires geoscientists for tomorrow through funding innovative activities and grant programs that benefit geophysicists, their professional community, the Society of Exploration Geophysicists (SEG), and the general public.

The SEG Foundation was incorporated by the State of Oklahoma in 1987 as a 501(c)(3) not-for-profit organization. The SEG Foundation encourages and supports scientific, educational, and charitable activities of benefit in the field of geophysics and related sciences, while also disseminating scientific information to the general public. The SEG Foundation depends on charitable contributions to fund meaningful geoscience programs and activities for SEG members and the Society at large.
The SEG Foundation enters its 32nd year full of vitality and with a spirit of optimism for a future of service to a world in great need of the talents of applied earth scientists. Founded in 1987 by visionaries, the Foundation has reached out from its strong and growing base of student scholarships, partnering with donors to initiate and grow groundbreaking new global programs. Not only do these programs attract and nurture new practitioners of applied earth science, they develop and sustain applied earth scientists throughout their careers. Ten years ago, Geoscientists Without Borders® (GWB) began to sponsor projects that apply and grow earth science in humanitarian projects in communities of need around the world.

SEG Foundation donors can feel confident that the programs they support are executed professionally and efficiently and that the Foundation stewards their donations prudently. Due to unselfish efforts by a virtual army of volunteers coordinated by SEG staff, beneficiary selection processes are well developed and robust, whether for scholarships, travel grants, GWB, or lecture programs. Best practices have been applied to minimize staff effort and overhead. Over the last three years, the Foundation has maintained a strong fundraising cost ratio, spending 13.5 cents for each dollar raised. At year-end, the Foundation’s assets were at US$20 million, and a number of updates to the Foundation’s financial policies have served to strengthen the stewardship of donors’ gifts.

Yet, we can and need to do more. The needs and priorities of donors are ever-changing. Some of the Society’s very generous donor corporations have merged, impacting not only donations but also the careers and development of earth scientists. Technological advancements have led inexorably to shifts in how applied earth science is focused, with big implications in training and career development. With continued urbanization of the world’s population, foreknowledge of risks from natural phenomena like earthquakes, tsunamis, landslides, and flooding becomes ever more important. Affordable and safe access to water, energy, and other resources will always be priorities and are out of reach for many.

And so, the challenge to the SEG Foundation is as clear as it is unchanging: to grow and adapt its programs in partnership with donors to meet the needs of society and provide support to applied earth scientists at all phases of their careers so that they can meet these needs.

Finally, I would like to take this opportunity to personally thank Mike Forrest, my predecessor, who served the Foundation as chair for four years. Mike personifies a tremendous response to the aforementioned challenges; the vitality and optimism which the SEG Foundation carries forward owes much to his leadership.

Michael G. Loudin
2018 SEG Foundation Chair
The SEG Foundation Board of Directors has overall responsibility for all aspects of the Foundation’s functions, including fundraising and oversight of investments. This 16-member Board is comprised of dedicated industry leaders and volunteers who are passionate about geophysics and our professional community. Directors are appointed by the president of SEG.

Five leadership Board committees provide business guidance and ensure its financial well-being. These committees include: the Executive Committee, Audit Committee, Development Committee, Finance and Investment Committee, and the Nominating Committee. In addition, Board liaisons are assigned to specific Foundation-funded SEG program committees to ensure donor intentions are being honored and to enable open pathways of communication between SEG programs and the SEG Foundation.

2018 OFFICERS

Michael G. Loudin chair Anna C. Shaughnessy vice chair Pete W. Cramer treasurer Dorsey Morrow secretary

2018 DIRECTORS

David C. Bartel Glenn W. Bear Craig J. Beasley Arthur Cheng Peter M. Duncan Raymond C. Farrell Michael C. Forrest Gretchen M. Gillis Julie K. Hardie Zhaobo (Joe) Meng David J. Monk Maurice M. Nessim Magne A. Reiersgard
The following charts display the sources of revenue and program and support expenses for 2018 and 2017:

**REVENUES**

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions</td>
<td>$1,702,000</td>
<td>$782,000</td>
</tr>
<tr>
<td>In-kind support from SEG</td>
<td>46,000</td>
<td>102,000</td>
</tr>
<tr>
<td>Unrealized gain/loss</td>
<td>(1,552,000)</td>
<td>2,690,000</td>
</tr>
<tr>
<td>Loss on bad debt</td>
<td>(10,000)</td>
<td>(39,000)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$186,000</strong></td>
<td><strong>$3,535,000</strong></td>
</tr>
</tbody>
</table>

**EXPENSES**

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEG program support</td>
<td>$2,319,000</td>
<td>$2,374,000</td>
</tr>
<tr>
<td>Management &amp; general</td>
<td>220,000</td>
<td>322,000</td>
</tr>
<tr>
<td>Fundraising</td>
<td>136,000</td>
<td>141,000</td>
</tr>
<tr>
<td>Community grants</td>
<td>-</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2,675,000</strong></td>
<td><strong>$2,937,000</strong></td>
</tr>
</tbody>
</table>

**NET ASSETS**

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of year</td>
<td>$22,510,000</td>
<td>$21,912,000</td>
</tr>
<tr>
<td>End of year</td>
<td>20,021,000</td>
<td>22,510,000</td>
</tr>
<tr>
<td><strong>Change</strong></td>
<td><strong>($2,489,000)</strong></td>
<td><strong>$598,000</strong></td>
</tr>
</tbody>
</table>

All monetary values are in U.S. dollars. Complete audited financial statements available at seg.org/foundation.
2018 FINANCIAL SUMMARY

SEG program and Foundation support expenses are funded by contributions from corporate and individual donors, the Foundation’s Development Reinvestment Fee, and the Annual Fund. The Foundation continued to see the effects of the industry downturn with fewer contributions (both in number and in size) than in previous years. The Foundation maintained basic management and general support services throughout the year. However, the Board of Directors also began serious discussion regarding the need for another major gifts campaign to benefit new and existing SEG programs — in particular, Geoscientists Without Borders®. The Foundation net assets were slightly more than US$20 million at the end of 2018.

FOUNDATION-FUNDED SEG PROGRAMS

During 2018, Foundation donors supported 18 SEG programs/activities, providing grants to SEG totaling more than US$2.3 million. These programs include: Professional Development (Distinguished Lecture, Honorary Lecture, Distinguished Instructor Short Course, SEG on Demand, SEG Wiki; US$613,000), Experiential Learning (EVOLVE, Field Camps: US$354,000), Social Impact (Geoscientists Without Borders®; US$435,000), Student Programs (Student Chapters, Scholarships, Student Leadership Symposium, Student Education Program, Travel Grants, Challenge Bowl, Near Surface Geophysical Research Award; US$901,000), and Others (Historical Preservation, SEG Online, SEG Publications; US$16,000).

REVENUES: CONTRIBUTIONS

With generous renewed multiyear commitments from sustaining investors BGP Inc. (SEG on Demand) and Shell E&P (Honorary Lecture), the Foundation saw a significant increase in corporate fundraising in 2017. In addition, 11 Major Gift individuals contributed more than US$235,000 to support the Annual Fund and other designated SEG program funds. (Note that revenue reported by the Foundation includes new pledges and contributions made in the current year and does not reflect additional cash received from pledges made in prior years.)

EXPENSES: SUPPORTING SERVICES

The Foundation's expenses include program support, management and general, and fundraising. Program support is directly related to program grant awards to SEG. Management and general are related to the general administration and operation of the Foundation. Fundraising is directly related to the development and stewardship of Foundation donors.

FUNDRAISING EFFICIENCY

A commonly used metric for monitoring fundraising efficiency is the “fundraising cost ratio.” To calculate the cost per dollar raised, divide the fundraising expenses by total contributions. Calculating fundraising expenses and revenues using rolling averages over a period of three to five years reduces the impact on any one large gift, bequest, grant, or a low-revenue year on the fundraising cost ratio in any given year. The Foundation has chosen to use this three-year rolling average, and feels, to be most prudent of donor intent, this ratio should not exceed 20%.

FUNDRAISING EFFICIENCY FORMULA

\[
\frac{\text{fundraising expenses}}{\text{contributions}} \times \$100 = \text{dollars spent per $100 raised}
\]

Dollars spent per $100 raised

All monetary values are in U.S. dollars. Complete audited financial statements available at seg.org/foundation.
Each year, SEG selects two highly regarded individuals as Distinguished Lecturers in recognition for their contributions and commitment to excellence in the fields of geophysics and geology. It is both a tremendous honor and responsibility to be selected as a Distinguished Lecturer, as each lecturer is expected to present 15–20 presentations at affiliated and associated societies and student chapters around the world. These face-to-face interactions provide stimulating and interactive sessions with students and professionals worldwide.

The Distinguished Lecture Program is funded in part by the SEG Foundation and the generosity of its donors. These funds are used to book venues, purchase course materials, and assist with travel and accommodation expenses. All Distinguished Lectures are offered free of charge to attendees. Many are available for free online streaming via SEG on Demand.

Matt Sexton, a second-year Ph.D. student at the University of Houston, serves as the student chapter vice president. Matt is tasked with booking lectures and coordinating workshops for the university’s student chapter, booking up to 12 presentations a year.

“The Distinguished Lecture presentations are by far the best and the most attended,” said Matt. “We can have up to 40 people attend, including students and faculty. The content is relevant and compelling, and the presenters are very well-respected yet approachable individuals. People always want to stay longer to personally meet the SEG Distinguished Lecturer.”

Matt credits the informal, yet professional, environment for the success of the lectures. He said the presentations often turn into discussions where people can jump in and add comments or ask questions.

“Feedback is always well received,” said Matt, “and I think this is because of the face-to-face interaction the presenter has with the audience. You can’t get that virtually. People come to meet and connect with the presenter and each other. That’s one of the added benefits in addition to hearing a fantastic presentation.”

During his involvement with the SEG student chapter, Matt has booked four distinguished lecturers. His most recent was William (Bill) Symes, 2018 Distinguished Lecturer, who toured January through June.

“I enjoyed Bill’s style,” said Matt. “He explained things clearly without using too much technical ‘jargon’ so everyone could clearly understand while at the same time not take away from the complexities of the topic. I heard much praise from people familiar with the topic and from newcomers to the field, and both groups were thoroughly interested throughout the presentation.”

Matt said he will continue to seek SEG Distinguished Lecturers to present to his department and student chapter, and he credits the success and quality of presentations to the highly selective process and the support the program receives from its donors.

“The Distinguished Lecturers are truly the best,” Matt reiterated. “I’m always excited to book and meet them when they are in town. I’m greatly appreciative for the insights and contributions they share and how they can always relate to the audience.”
DISTINGUISHED LECTURE PROGRAM

The Distinguished Lecture Program honors and recognizes outstanding individuals for their contributions and advancements to the fields of geophysics and geology. Each year, two Distinguished Lecturers are selected and tour internationally presenting topics of global interest. In addition to recognizing these individuals’ contributions, the role of a Distinguished Lecturer is also to promote geophysics, stimulate general scientific and professional interest, expand technical horizons, and provide a connection to SEG activities and practices. For more information regarding the lecture programs, please visit seg.org/education/lectures.

To view SEG lectures online, visit seg.org/ondemand. Encourage your friends, colleagues, and students to explore this valuable resource.

COMMITTEE:
Distinguished Lecture
Gerard T. Schuster, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTORS:

2018 DL LECTURERS:

WILLIAM W. SYMES: Q1/Q2
Noah G. Harding professor emeritus and research professor in computational and applied mathematics, Rice University (United States)
Title: “Advanced imaging for practitioners”
Schedule: 34 lectures, 1053 attendees
Countries: Argentina, Brazil, Brunei, Canada, China, Colombia, Indonesia, Malaysia, United States

SATISH SINGH: Q3/Q4
Professor, Institut de Physique du Globe de Paris (France) and Earth Observatory of Singapore, Nanyang Technological University (Singapore)
Title: “Seismic full waveform inversion for fundamental scientific and industrial problems”
Schedule: 30 lectures, 1011 attendees
Countries: Australia, Canada, France, Indonesia, Italy, New Zealand, Poland, Singapore, Spain, Switzerland, United Kingdom, United States

The Distinguished Lecture (DL) and Honorary Lecture (HL) programs are considered to be some of the most effective outreach programs of SEG as evidenced by the reported 7281 attendees in 36 countries for the 2018 tours. Attendance of a DL/HL talk is one of the only opportunities for many young people to directly interact with distinguished SEG speakers.
HONORARY LECTURERS CONNECT WITH THE AUDIENCE BEYOND THE PRESENTATION

Gaining knowledge beyond the traditional classroom enhances and enriches the learning experience for both students and professionals. The geoscience industry is constantly evolving with new discoveries, fresh research, and infinite opportunities. The SEG Honorary Lecture Program invites the industry’s leading experts to share their research regarding the most innovative and relevant geophysical topics.

The Honorary Lecture Program sponsors up to six lecturers every year, representing each of the world’s major regions — Europe, Latin America, Middle East and Africa, North America, Pacific South, and South and East Asia. Helene Stemland, a second-year Ph.D. student at the University of Bergen in Norway, has had the opportunity to meet two of SEG’s Honorary Lecturers — Martin Landrø (2017) and Ivan Vasconcelos (2018).

“I think it’s really important for students and professionals to meet and learn from others in the industry,” said Helene. “The Honorary Lecture Program provides the opportunity to personally learn from and interact with some of geophysics’ brightest minds.”

Helene is a member of the university’s student chapter and has served as student chapter president. She studied geophysics as an undergraduate and is currently studying seismic of the Arctic permafrost as a Ph.D. student. Helene is native to Norway but has studied in Australia as an undergraduate and in the United States at Stanford University as a visiting student researcher. She also attended SEG’s 2018 Annual Meeting in Anaheim.

Helene mentioned that both lecturers conveyed complicated topics but were still able to connect with the audience. In 2018, she had the opportunity to sit down with Ivan after his presentation.

“Ivan was very good at presenting and took his time to explain some of the more complicated parts of the lecture,” she shared. “As students, we really enjoyed that Ivan took the time to sit down with us for almost an hour after the presentation. We just chatted about his life as a geophysicist, his background, suggestions for our career paths, and he told us stories from his career. This informal, and unplanned, part of the lecture is what we have since talked about most.”

Helene also said that Ivan knows many of the same people she knows, and that making connections with the lecturers was equally as beneficial as the presentations.

The Honorary Lecture Program is funded in part by the SEG Foundation and the generosity of its donors. All Honorary Lectures are offered free of charge to attendees. Many are available for free online streaming via SEG on Demand. For more information regarding the lecture programs, and to view past and current lecturers, please visit seg.org/education/lectures.

HONORARY LECTURE PROGRAM

Each year, up to six traveling Honorary Lecturers (HL) transfer knowledge to major regions of the globe. The regional focus strengthens services SEG provides to an expanding global membership. The six 2018 regions included Latin America, Europe, Middle East and Africa, North America, Pacific South, and South and East Asia. In 2018, the SEG Board also approved a virtual Near Surface Global Lecturer who will deliver two virtual lectures. Lectures may be given in English or a language appropriate to the region. To view SEG lectures online, visit seg.org/ondemand.

COMMITTEE:
Distinguished Lecture
Gerard T. Schuster, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTOR:
2018 HL LECTURERS:

**RUBEN D. MARTINEZ: LATIN AMERICA**
Petroleum geoscience consultant and instructor, Reservoir Geoscience LLC (United States)
Title: "How recent advances in seismic depth imaging can enhance prospect identification and appraisal"
Schedule: 23 lectures, 1028 attendees
Countries: Argentina, Brazil, Colombia, Mexico, United States, Uruguay

**IVAN VASCONCELOS: EUROPE**
Assistant professor, Utrecht University (Netherlands)
Title: "Full-wavefield focusing in seismic imaging — Concepts, applications, and examples"
Schedule: 24 lectures, 816 attendees
Countries: Austria, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom

**MARIA ANGELA CAPELLO: MIDDLE EAST AND AFRICA**
Executive advisor for deputy CEO North Kuwait, Kuwait Oil Company (Kuwait)
Title: "The evolving challenges of geophysicists — From amplitude mappers to partners in drilling and water search"
Schedule: 16 lectures, 1082 attendees
Countries: Azerbaijan, Egypt, Kenya, Nigeria, Oman, Saudi Arabia, South Africa, United Arab Emirates

**CHRISTINE E. KROHN: NORTH AMERICA**
Retired senior research associate, ExxonMobil Exploration Company (United States)
Title: "The complexity just below our feet and the implications for the fidelity of land seismic data"
Schedule: 15 lectures, 555 attendees
Countries: Canada, United States

**MAZIN FAROUKI: PACIFIC SOUTH**
Geophysical advisor, Asia Pacific region, PGS Geophysical (Malaysia)
Title: "Dense sampling in marine seismic: Efficiency in acquisition without compromising data quality"
Schedule: 25 lectures, 902 attendees
Countries: Australia, China, Indonesia, Japan, Malaysia, New Zealand, Singapore, Thailand

**RIMA CHATTERJEE: SOUTH AND EAST ASIA**
Associate professor, Indian School of Mines (Dhanbad)
Title: "In-situ stress, pore pressure, and geomechanical modeling: An aid to reservoir exploration and development in the Kirshna-Godavari and Upper Assam Basins, India"
Schedule: 12 lectures, 687 attendees
Countries: India, Indonesia

2018 NEAR SURFACE LECTURER:

**ESBEN AUKEN**
Professor of geophysics, Aarhus University (Denmark)
Title: "Exploiting the huge advancements in EM instrumentation for full 3D large-scale resolution of the subsurface"
Schedule: Two virtual lectures, 147 attendees

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**2018 STATS**

115 LECTURES
33 COUNTRIES
64 UNIVERSITIES
5070 ATTENDEES
2 VIRTUAL LECTURES
147 ATTENDEES

The Distinguished Lecture (DL) and Honorary Lecture (HL) programs are considered to be some of the most effective outreach programs of SEG as evidenced by the reported 7281 attendees in 36 countries for the 2018 tours. Attendance of a DL/HL talk is one of the only opportunities for many young people to directly interact with distinguished SEG speakers.

SEG.ORG/LECTURES
To be selected to teach the SEG Distinguished Instructor Short Course (DISC) is among one of the highest honors in the Society. Each year, SEG nominates one highly qualified individual to instruct an eight-hour, one-day short course on a topic of widespread interest in more than 25 locations worldwide.

In 2018, Dr. Kurt J. Marfurt served once again as the SEG DISC instructor, presenting “Seismic Attributes as the Framework for Data Integration throughout the Oilfield Life Cycle.” Kurt was previously the 2006 SEG/EAGE DISC instructor on “Seismic Attribute Mapping of Structure and Stratigraphy.” During his most recent 2018 tour, Kurt traveled to 28 different locations, presenting to over 800 participants in 19 countries.

Kurt joined the University of Oklahoma (OU) in 2007, where he serves as the Frank and Henrietta Schultz Professor of Geophysics within the ConocoPhillips School of Geology and Geophysics. His primary research interest is the development and calibration of new seismic attributes to aid in seismic processing, seismic interpretation, and reservoir characterization. Recently, he has focused on applying coherence, spectral decomposition, structure-oriented filtering, and volumetric curvature to mapping fractures and karst with a particular focus on resource plays.

Kurt is an honorary member of SEG and has received the SEG best paper (for coherence), SEG best presentation (for seismic modeling), as a coauthor with Satinder Chopra best SEG poster (one on curvature, one on principal component analysis) and best AAPG technical presentation, and as a coauthor with Perez Altimar, SEG/AAPG Interpretation best paper (on brittleness) awards. In addition to his teaching and research duties at OU, Kurt leads short courses on attributes for SEG and AAPG, and currently serves as editor-in-chief of the AAPG/SEG journal Interpretation.

Kurt’s 2018 DISC presentation was intended for seismic interpreters who wanted to extract more information from their data, along with seismic processors and imagers who wanted to learn how their efforts impact subtle stratigraphic and fracture plays. The goal of the course was to offer attributes to quantify geometric, dynamic, kinematic, statistical, and geomechanical properties of the 3D seismic data volume, as well as use 3D
visualization and multiattribute crossplots to interactively enhance and isolate geologic features that otherwise might be overlooked.

Kurt also included concepts of geomorphology, diagenesis, and tectonic deformation to integrate seismic and well-log data within an appropriate geologic framework. Participants engaged in presentations on fundamental assumptions, algorithm application, analysis of the results, as well as utilized the course textbook that included mathematical details of volumetric attribute calculation, image processing, and machine learning algorithms.

DISC is a popular SEG educational program, and offers an environment for participants to learn and interact with some of the most accomplished individuals in the industry. In addition to a nominal participation fee, the program is also partially funded through the generosity of Shell and by the DISC Endowment, founded by Richard and Fran Baile. Many thanks to our participants and donors for supporting this program and keeping it relevant and thriving.

DISTINGUISHED INSTRUCTOR SHORT COURSE

DISC is an eight-hour, one-day short course on a topic of current and widespread interest. The DISC instructor is a nominated, prestigious, world-class instructor, lecturing globally and also recorded for online viewing. The DISC Program continues to be a long-standing, high-level SEG resource. Regarding the DISC Program, please visit seg.org/disc.

COMMITTEE:
Distinguished Instructor Short Course
Adel El-Emam, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE AND INDIVIDUAL INVESTORS:

Endowment Funds: US$405,333
Richard and Fran Baile and others

2018 DISC INSTRUCTOR:

KURT J. MARFURT
Professor of geosciences, University of Oklahoma (United States)
Title: “Seismic attributes as the framework for data integration throughout the oilfield life cycle”
Schedule: 28 locations, over 800 attendees
Countries: Argentina, Australia, Austria, Brazil, Canada, China, Colombia, Denmark, Germany, Italy, Japan, Kuwait, Malaysia, Norway, Oman, Saudi Arabia, South Korea, Trinidad and Tobago, United States

SEG.ORG/DISC
SEG on Demand is your one-stop-shop for online streaming of SEG-affiliated lectures, webinars, virtual courses, and more. Funded in part through the SEG Foundation, SEG on Demand is a key educational resource for all things geophysics, brought to you by the brightest and most influential industry experts.

As a newcomer to SEG on Demand, your first stop should be the Competency Management System (CMS). Launched in 2016, CMS was created to help users identify new learning opportunities and provide further course options for a more well-rounded experience. CMS is available free of charge and offers visitors a step-by-step self-assessment to identify competency gaps based on given results. The system then recommends a learning plan with the necessary tools needed to propel users within their career. “The Competency Management System is designed to help SEG members attain their career goals,” said Marilyn Brown, professional development advisor at SEG. “We want to provide members the full experience by helping them identify gaps and directing them to the SEG resources (including those available through SEG on Demand) to help them fill those gaps.”

BGP Inc. has been a key contributor to SEG on Demand and has sponsored multiple courses that have been translated into Mandarin. Through these projects, BGP has enhanced the overall experience of SEG on Demand with the hope that many more courses will be available in multiple languages in the future.

Through SEG on Demand, all of the Honorary and Distinguished Lectures are available for free online streaming to SEG members, while abundant course options are also available for purchase (members receive special pricing). Users can access SEG on Demand and learn from anywhere at any time.

“An excellent way to self-assess. It can help professionals at different career stages to know which areas need to be improved,” said Fernando Castellanos, University of Alberta, of CMS. Continued and additional support for SEG on Demand and the CMS would allow for even more course options for geophysicists as well as the development of new opportunities and refreshing current content. For more information regarding SEG on Demand and CMS, email ondemand@seg.org.
SEG ON DEMAND

The Continuing Education Committee works to provide a curriculum of high-quality professional courses to the exploration-geophysics community. To ensure that the current needs and standards of the community are met, it is essential to exercise constant control on the curriculum of offered topics and the way the courses are given.

Committee members added 10 Geophysical Society of Houston/SEG webinar recordings to the SEG on Demand library in 2018. In December, SEG entered into a partnership with Knowledgette, an online platform that specializes in bite-size knowledge taught online by experts in the petroleum industry. Selected SEG on Demand recordings are also available in languages other than English, including Mandarin-translated resources.

The CMS allows members to assess their current capabilities against specific competency models for key geoscience careers. The software is designed to easily identify competency gaps based on assessment results and then recommend a learning plan that helps close those gaps. For more information regarding SEG on Demand and CMS, please visit seg.org/ondemand or seg.org/cms.

COMMITTEE:
Continuing Education
Bill Harbert, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTOR:
With hundreds of thousands of visits each year, the SEG Wiki brings the impact of the science and the Society to the greater public. The Wiki helps facilitate international awareness of geophysics and SEG worldwide and brings the science to the next generation of SEG members.

Facilitating ongoing translations of SEG’s best-selling book, Robert Sheriff’s Encyclopedic Dictionary of Applied Geophysics, has been one of the more extensive projects within the Wiki. At the end of 2018, 91% of the book had been translated to Spanish by 68 volunteers making over 45,000 edits to the Wiki. Mandarin and Arabic translation projects for this important resource are also in progress.

Major contributors to the Society and to the science are also highlighted within the Wiki. Past SEG Honors and Awards winners and SEG presidents, along with applied geophysicists who have contributed significantly to the science, are nobly showcased in the Wiki.

Hundreds of volunteers have played a vital part in writing the 117,305 changes to the Wiki. In 2018, classroom partnerships with the University of Houston and the University of Oklahoma contributed dozens of new articles. In fact, a student from the University of Houston contributed the Wiki’s 100,000th lifetime edit in March 2018.

The 2018 SEG Wiki Champion, Heather Bedle from the University of Oklahoma, was selected from this class partnership. Heather shared, “I got involved because I was looking for a way to volunteer within SEG. Plus, working on expanding the Wiki is important to me as an educator. I am glad to be part of such a tremendous effort in the geophysics community. As long as there are topics to write about, I plan on letting my students continue creating new Wiki pages for years to come.”

These class partnerships, along with the creation of the Student Center on the Wiki, help students connect the learnings in the classroom and involvement with SEG student chapters to a wider audience. This engagement from the onset of their
applied-geophysics journey with SEG will help encourage a lifetime of connection and contribution to the Society.

The Wiki Committee leads the Wiki to new areas, such as growing class partnerships and partnering with the Geophysical Society of Houston to bring its geoscience museum to the public through the Wiki. Special thanks to Apache for their ongoing annual support of this effort, and to IHS Markit, Shell, and In-Depth Geophysical for their additional financial and content-related contributions. The success of the Wiki is dependent on the contributions from our volunteers and donors.

SEG WIKI PROGRAM

An encyclopedia of applied geophysics, the SEG Wiki is a publicly accessible and editable website, open to all users registered with SEG. The SEG Wiki’s main mission is to supply scientific material to the geoscience community and the general public through online books, tutorials, geoscience articles, and biographies of key geoscientists and engage emerging and established professionals. The Wiki is maintained by volunteers, strategic university partnerships, the SEG Wiki Committee, and readers throughout the world.

2018 ACCOMPLISHMENTS

• Robert Sheriff’s Encyclopedic Dictionary of Applied Geophysics translation progress: 91% completed in Spanish, 50% translated to Mandarin, new Arabic translation started
• Biographies of past SEG award winners and SEG presidents added
• Dozens of new articles contributed through continued class partnerships with the University of Houston and the University of Oklahoma
• Heather Bedle from the University of Oklahoma was named the 2018 SEG Wiki Champion

For more information regarding the SEG Wiki, please visit wiki.seg.org.

COMMITTEE:
Wiki Committee
Karl Schleicher, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTORS:
EVOLVE: DEVELOPING THE FEARLESS EXPLORERS OF THE FUTURE

EVOLVE prepares participants to launch and advance their careers in the rapidly developing and multidisciplinary geophysics profession by building their confidence and bringing them closer to the goal of becoming fearless explorers. The program incorporates the industry’s long-established values by encouraging thoroughness, thoughtfulness, and stewardship of investors’ funds while maintaining a high level of professionalism and integrity.

The 2018 program kicked off in mid-February and included 60 students from around the world. Each multidisciplinary team had four to six members, including geologists, geophysicists, petrophysicists, and reservoir engineers. All teams were assigned one of three data sets and received the same data, software, and educational materials. The majority of the technical activities took place within the DecisionSpace® platform. Regardless of location, the DecisionSpace® platform (cloud) allowed everyone to see each other’s work and facilitated effective integration and collaboration across disciplines.

The overarching goals were (1) to find the best exploration or production investment opportunity within the team’s asset (data set) and (2) to make business recommendations to management on the best way(s) to create value from the asset.

“I had a tremendous and mind-blowing experience participating in EVOLVE 2018 during the last eight months with the IST team. During these months, I gained fantastic understanding in geological and geophysical data analysis, well-log analysis, prospect characterization, risk assessment and economic and volumetric evaluation in a multidisciplinary subsurface data integration project,” said João Narciso from the Instituto Superior Técnico.

In September, after considerable work over an eight-month period, the students presented their best-investment opportunities to a panel that simulated an oil company boardroom. The panel and mentors provided additional guidance and suggestions to help the students improve their understanding of the opportunities and to allow them to communicate their results more effectively.

EVOLVE 2018 finished successfully at the SEG Annual Meeting in Anaheim. The event displayed the ability of the students to communicate with senior industry professionals using technical and business language that they understand. Industry personnel who participated were impressed by the breadth of knowledge and practical recommendations that the students presented.

EVOLVE 2018 was more than technical activities and learning. It also strived to develop the human traits required to be a successful explorer while having fun along the way. As the teams and mentors collaborated in Anaheim for the final presentations, lifelong bonds were formed. While it was only a beginning for the students, EVOLVE 2018 helped set the participants on the right career path. These young professionals will be better prepared for a successful career involving complex subsurface, economic, and human elements, and they will indeed be ready to become fearless explorers of the future.

Diego Córdova was a part of the Mayan Petroleum team from Mexico. “I can’t believe it’s over. We worked for almost a year! We are so thankful to SEG and Halliburton for providing all the data we needed and for creating this amazing program that helps students keep learning while facing real-life work. Individually, I was awarded for persistence, and I have to say this word really does define me. Thank you to my team for making
it possible. And to the people we met in Anaheim: we learned a lot from you.”

**EVOLVE PROGRAM**

The EVOLVE Program is a passing of practical knowledge to the next generation by using experiential learning to find the best investment opportunity. EVOLVE fosters collaboration and global participation and consists of open-ended exercises that have no prepared answers. Project management, teamwork skills, and business values are honed within the context of exploration, reservoir appraisal, field development planning, and production enhancement scenarios.

Each multidisciplinary team, consisting of four to six members, collaborates and conducts multidisciplinary analyses using real-world seismic, wireline, core, production, and other data. Team members may include geologists, geophysicists, petrophysicists, and reservoir engineers. For more information regarding EVOLVE, please visit seg.org/evolve.

**COMMITTEE:**
EVOLVE Technical
Olga Nedorub, chair
See the full committee member list at seg.org/about-seg/governance/committees

**CORPORATE INVESTOR:**
HALLIBURTON

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**2018 STATS**

| 10 TEAMS |
| 60 PARTICIPANTS |
| 14 COUNTRIES |

**2018 TEAMS**

AGH University of Science and Technology — Poland

Instituto Superior Técnico, Universidade de Lisboa — Portugal

Norwegian University of Science and Technology, The University of Edinburgh — Norway, United Kingdom

RWTH Aachen University, Delft University of Technology, University Pierre and Marie Curie — Germany, Netherlands, France

Texas A&M University — United States

Universidad Autónoma del Carmen — Mexico

Universidad Simón Bolívar — Venezuela

University of Alberta (#1) — Canada

University of Alberta (#2) — Canada

University of Bucharest, University of Sciences and Technology, Rio de Janeiro State University — Romania, Algeria, Brazil

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Allen Bertagne and the POSOIL team in an active work session (left)
Visualization of Gulf of Mexico prospect in DecisionSpace® (right)
Aristotle once wrote, “For the things we have to learn before we can do them, we learn by doing them.” Hands-on learning is a proven key component to a well-rounded education. The SEG Field Camps Program aims to provide students the tools needed for a successful career by taking learning beyond the classroom into real-world training.

Founded in 2005, the AfricaArray Field School promotes, strengthens, and maintains a workforce of highly skilled geoscientists and researchers for Africa. This public-private partnership of universities, government institutions, and private companies supports field training and research in geoscience. Students and early-career participants from all over the world, and who vary in age and skillsets, collaborate for a three-week field school and scientific workshop. It is firmly believed that well-trained geoscientists are crucial for sustainable development as demands grow for Africa’s natural resources and the continent’s environment is impacted by global change.

Dr. Susan Webb, associate professor at the University of the Witwatersrand, is passionately involved in the AfricaArray Field School. The project is a collaborative effort led by the University of the Witwatersrand, Pennsylvania State University, and the Council for Geoscience. Susan has witnessed the program’s growth and success along with its impact on both the industry and the people who participate. Each year, as many as 100 applications are submitted to the field school, and 30–35 participants are selected.

“It’s amazing to see the growth of this program,” exclaimed Susan. “An early version of the field camp was launched in 2001 in an effort to address the lack of practical field skills in our program and consisted of just six–eight students. With so few people in the field, much of the equipment would sit idle as there were not enough of us to use it all at the same time. We have made great strides in expanding the program, assisted by SEG Foundation funding, so that we can teach more people and all the equipment can run at the same time. It’s been a long but fun road to success!”

The scope of AfricaArray evolves and expands as its partnership base grows and new capabilities are added to scientific observatories. Susan explained that there is always something to find, and the program has led to some new and exciting discoveries.

“The field school is life changing,” explained Susan. “It serves a major turning point for our participants as they learn to solve problems, handle equipment, take measurements, and process their own field data. Many have never been in the field and haven’t applied the full workflow for a geophysical investigation. Once they are here, a lightbulb seems to go off in their minds, and they gain a much clearer understanding. There is so much in geophysics that cannot be taught on a computer screen. You need to be there, step by step, and measuring and troubleshooting in order to really connect with a project.”

Participants of the field school take their experience from AfricaArray to jumpstart their careers, and many have gone on to successfully lead or establish their own companies. Susan said the relationships built and the confidence gained is one of the most rewarding aspects of AfricaArray.

“Many of our students and young professionals come to us very inexperienced,” she said. “They are not comfortable handling the equipment or data, and often want to give up when they cannot figure out a problem. But they leave with such confidence, both in their capabilities and their research.”

“Personally, I cannot thank SEG enough for its continued support of AfricaArray,” said Susan. “It makes such a difference in the lives of our participants and in the science of geophysics. The program could not survive year after year without our donors believing in what we do and what we stand for — thank you.”
FIELD CAMPS PROGRAM

The Field Camps Program was established in 1993 by the SEG Foundation to provide seed money for geophysics faculty and SEG student chapters to create and support field courses that provide students with hands-on experience in data collection and analysis using geophysical instruments and software applications.

Funded by the generosity of its donors, the SEG Foundation awards grant funds ranging from US$1000–$20,000 to support the Field Camps Program. This funding is intended to support projects that promote professional development, student support, and youth outreach goals as well as the advancement of geophysics. For more information regarding SEG field camps, please visit seg.org/fieldcamps.

COMMITTEE:
Field Camps
Jeffrey Shragge, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTORS:
TGS

2018 GRANT RECIPIENTS:

BULGARIA
Geophysics Field Camp “Sozopol 2018”; University of Mining and Geology “St. Ivan Rilski”

CZECH REPUBLIC
International Field Research Experiences for Students; Charles University in Prague

INDIA
SEG-BHU Geophysical Field Camp 2018; Banaras Hindu University

INDONESIA
Field Camp SEG UGM-SC 2018; Universitas Gadjah Mada
Geophysics Field Study Karangsambung 2018; University of Padjadjaran

POLAND
2018 Field Camp — Field Competition; AGH University of Science and Technology

ROMANIA
Integrating geophysics, geology and geotechnics for a highway tunnel feasibility study; University of Bucharest

SOUTH AFRICA
AfricaArray International Geophysics Field School; University of the Witwatersrand

UKRAINE
Geoscience Field Camp in Ukraine 2018; Taras Shevchenko National University of Kyiv

UNITED STATES
GeoFORCE Texas 10th Grade Academy; UT-Austin, Jackson School of Geosciences
Geophysical characterization of the Pagosa Springs geothermal system; Colorado School of Mines
Marine Geology and Geophysics Field Course; UT-Austin, Jackson School of Geosciences
Support for SAGE (Summer of Applied Geophysical Experience) 2018; Purdue University
UH Geophysics Field School 2018; University of Houston

2018 STATS

APPLICATIONS
21 SUBMISSIONS
12 COUNTRIES
US$232,173 REQUESTED FUNDING

AWARDS/GRANTS
14 RECIPIENTS
9 COUNTRIES
US$103,751 TOTAL AWARDS
Values from US$2000–$20,000 (average $7411)

SEG.ORG/FIELDCAMPS
In an effort to keep the humanitarian applications of geophysics at the forefront, a true gem under the umbrella of SEG is Geoscientists Without Borders® (GWB). This program aims to unite geoscientists with multidisciplinary and community-based partners for the benefit of mankind and community. Since 2008, GWB has awarded 42 projects in 30 countries. Two of these projects specifically addressed groundwater exploration in rural communities in Africa. These communities faced severe water shortages, and villagers walked miles to fetch often-contaminated water not suitable for human consumption.

Tim Larson from the University of Illinois and Zuze Dulanya from the University of Malawi joined forces to address the devastation of water scarcity facing four rural communities in Malawi, South Africa. The two-year project team included students, professors, geoscientists, and volunteers both local and abroad. The goal of the project was not only to address the water-scarcity issues, but to also provide long-term groundwater solutions for these communities.

“Malawi is unique in that nearly one-fifth of it is covered by Lake Malawi, but this water is not available to the rural communities,” said Zuze. “It’s challenging for rural villagers to have sustainable access to any kind of water.”

The team faced two major issues in supplying water to these rural areas: (1) water scarcity and quality issues — water sources are often contaminated with saline, which is unsuitable for consumption; and (2) providing enough water for overpopulated areas — shallow water wells do not support growing populations.

After two years of hard work and research, the team was successful in finding boreholes and implementing a reliable source of groundwater for each of the four communities.

“I’ve been doing geophysics for 40 years, and the humanitarian component of this particular project was very exciting to me,” said Tim. “When the time came to open the boreholes in these communities, there was always a big celebration. The people would sing, dance, and jump in excitement, especially the women and children. They were so excited to not only have water, but to have clean and clear water that could be used throughout the village.”

The team also provided villagers with the necessary tools to maintain the water source going forward. In no way did Tim and Zuze want this project to be a quick fix or temporary solution. Water point committees were established and management structures were implemented in each community so that the project could sustain over a long period of time.

“We are so satisfied in what we were able to accomplish,” said Zuze. “I remember one local villager told us he never thought scientific research could have such an impact on so many people. To me, this was a humbling sentiment. I’ve never done something like this, and often times, as scientists, I think our work is detached from the people it is meant to serve.”

A project that was awarded GWB funding in 2018 is led by Hendratta Ali, associate professor of geosciences, geology, at Fort Hayes State University (FHSU), and her collaborator Manika Prasad, professor of petroleum engineering at Colorado School of Mines. Together, they are building a team to locate aquifers and drill for groundwater in faulted areas of bedrock in a rural community of Cameroon. The project is personal for Hendratta, who is native to Cameroon, and it remains home to her family. She has previously led self-funded projects in the region in an effort to contribute to the dire need for clean water but credits Manika for motivating her to apply for a GWB grant to further her impact.

“The problem is very real and very important to me,” said Hendratta. “I lived that situation and continue to live it every time...”
I visit my family and friends. I know and understand what people in rural areas have to do to access clean water. I am hoping that this project builds upon my previous surveys so that we can contribute to provide a community with more or better access to clean water and together with them identify the tools they need to continue to monitor the quality of their water. Water can change and become contaminated … finding it is just the first step. Testing and managing the water source makes it sustainable for the long term.”

The project is currently in its early stage. The team is analyzing remote sensing data and coordinating with local collaborators so that once they arrive in Cameroon, the project can proceed smoothly. Hendratta works closely with faculty and students from the University of Yaoundé and the University of Bamenda in Cameroon, where she received both her undergraduate and master’s degrees. Students and faculty from the universities in Cameroon will collaborate with the team of students and faculty from FHSU and Colorado School of Mines on the project.

“Mentoring is so important to me,” said Hendratta. “Mentors have been essential to my career. It was my mentor who motivated me to apply for this grant in the first place, and I want to use this project to provide experience to as many students as possible and not just university students. Ideally, we would also like to incorporate local K–12 students and expose these students to real-world applied geophysics and opportunities happening in their own community. I would like to demystify geosciences for kids.”

The field project is slated to begin in July 2019, and Hendratta expects to be in Cameroon for four weeks before returning to the United States for the 2019–2020 academic year. Actual drilling for groundwater is scheduled to begin in the summer of 2020, with the ultimate goal of providing the community with an accessible water well and some resources to test and maintain the water quality by 2021.
“I want the communities involved to build upon what we start,” said Hendratta. “I want to empower them to be as self-sustainable as possible. GWB provides a unique opportunity for scientists to apply their technical and research skills when so many other grant programs are mostly only tied to research. There are few opportunities to actually serve people directly, and it’s beautiful to see the reach and result of your work. I have so much appreciation to the donors of GWB — GWB is helping people and communities that don’t have many options.”

These two projects exemplify the importance of applied geophysics and groundwater exploration. Water is the essence of life and a critical component in the survival of many communities around the world. The communities that will be served through these two projects are just a fraction of many. After a decade of dedication, GWB continues to stretch its reach across the globe and propel the application of geophysics to impact critical areas. It is indeed lifesaving to provide these geoscience services. Thanks to our donors, GWB has and continues to utilize geoscience to improve the quality of life of thousands of people all over the world.

**GEOScientISTS Without Borders® Program**

GWB is a cornerstone of the SEG strategic plan, providing a significant opportunity for SEG and its membership to make a social contribution. It provides funding that supports geoscience projects that seek to solve problems of human need around the world. Founded in 2008, GWB has awarded nearly US$3.3 million in grant funding to 42 projects in 30 countries. Projects range from groundwater management; earthquake, volcano, tsunami, and landslide preparedness; habitat improvement; archaeology; and pollution mitigation. GWB aims to unite multidisciplinary and community-based partners to provide resources that result in a sustainable humanitarian benefit to the community. For more information regarding GWB, please visit seg.org/gwb.
COMMITTEE:  
Geoscientists Without Borders®  
Robert Merrill, chair  
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE AND INDIVIDUAL INVESTORS:  
Schlumberger  
foundling supporter

Endowment Funds: US$1,707,500  
Debra and Mark Gregg/KiwiEnergy Ltd. (founding supporter)  
Michael C. Forrest Honorary Endowed Fund

2018 PROJECT LOCATIONS/GRANT RECIPIENTS:

BENIN (WEST AFRICA)  
Low-cost geophysical instrumentation for groundwater management in West Africa; Colorado School of Mines

CAMEROON (CENTRAL AFRICA)  
Geophysical investigation of fault zone aquifers and water-quality assessment in Cameroon; Fort Hays State University

GUATEMALA (CENTRAL AMERICA)  
International partnership to develop volcano monitoring capacities in Guatemala; University of Liverpool

MEXICO (NORTH AMERICA)  
Hydrometeorologic and geologic hazards at Pico de Orizaba Volcano; Universidad Veracruzana Xalapa

MYANMAR (ASIA)  
Improved earthquake hazard assessment: Tools, knowledge, and infrastructure; Louisiana State University

NEPAL (SOUTH ASIA)  
Seismic site effects study in Nepal; Tribhuvan University

2018 STATS

APPLICATIONS
45 SUBMISSIONS
25 COUNTRIES

AWARDS/GRANTS
6 RECIPIENTS
6 COUNTRIES (PROJECT LOCATIONS)
2 ONE-YEAR PROJECTS
4 TWO-YEAR PROJECTS
US$464,678 TOTAL AWARDS
Values from US$38,000–$99,700

SEG.ORG/GWB
We all want to be the best, whether it’s in our studies, career, or hobbies. A little competition can stimulate healthy rivalries, fulfill goals, and offer extra motivation to perform at a higher level. At SEG, we want our student chapters to offer the best resources available to their members, and we encourage members to continuously push the envelope and step out of their comfort zone to better prepare themselves for an exciting career in geophysics.

Each year at the SEG Annual Meeting, the Society recognizes the world’s best SEG student chapter through the SEG student chapter Excellence Program. To be considered, the chapter must submit a Student Chapter Report, which awards points and rankings based on requirements set by the Society. The chapter receiving the highest score is announced at the Annual Meeting and awarded the coveted Best Chapter Cup and a US$5000 grant. The grant covers expenses for a faculty advisor and student officer to attend the following year’s Annual Meeting.

In 2018, the student chapter of Taras Shevchenko National University of Kyiv was recognized as “Best in the World” by the Student Chapter Excellence Program. The chapter was established in 2002 by Faculty Advisor Pavlo Gryshchuk and has grown in membership and SEG participation quite rapidly since 2012. Pavlo attracted students by organizing monthly meetings, scheduling frequent and relevant lectures, and helping students navigate programs offered by SEG. Under his guidance, members of the student chapter participated in SEG’s Student Leadership Symposium (SLS) and Student Education Program (SEP), reviewed SEG publications such as The Leading Edge and Geophysics, authored sections of the SEG Wiki, shared about SEG and geophysics through local outreach, and organized multiple field camps.

In 2017, Student Chapter Vice President Oleh Loshakov organized the first SEG field camp in Ukraine with the help of US$3000 in grant funding. The following year, 2018 Student Chapter President Oleh Petrokushyn followed Loshakov’s lead and organized a second field trip with assistance from a US$5000 grant. The second field camp incorporated 23 students from 10 different countries. The organization of these field camps was built upon the chapter’s previous activity and helped solidify its status as Best Student Chapter.

“Success was achieved when our students began taking advantage of the opportunities offered by SEG, including participation in SEP, SLS, and field camps,” said Pavlo. “Participants of these events recognized that, in contrast to lectures, practical training is more interesting and effective for the understanding of geophysical technologies. Various international programs have made it possible to learn more about geophysics, make friends in the field, and discover new ways to realize potential. With extreme enthusiasm, I am proud of the students’ initiative and the hard work that it took to achieve our chapter’s world recognition in 2018!”

The Student Chapter Excellence Program not only encourages student chapters to effectively represent the university, but it also encourages students to work collaboratively and to take
advantage of all the SEG programs available that can enhance their education. With hands-on experience through field camps, extended learning with international peers, along with experience in presenting papers and reviewing industry journals, students in successful student chapters gain much more than the prized cup and grant funding. They win through the experiences made possible by SEG and its donors and sponsors and the encouragement to expand their skillsets alongside fellow peers.

“Joining the SEG student chapter was a life-changing decision for me,” said Loshakov. “It gave me a way to implement my ambitions to grow as a person, leader, and a professional. We never had ambitions to be the best in the world, we were just aiming to make our days full of new experiences, new people, and new knowledge. That is why we organized field camps, invited lecturers, conducted speeches at schools, and participated in various activities of SEG. We always aimed to share our experience and help other students find their way in geology or geophysics. Raising the cup as the Best Student Chapter in front of hundreds of people sparks incredible emotions that make this moment a life-long memory. I am happy that our activities were noticed by SEG. Next year, one more representative of our student chapter will go to the SEG Annual Meeting and possibly be inspired to do something great.”

STUDENT SUPPORT/STUDENT CHAPTERS

SEG strives to create a culture of leadership that will take the geophysical community forward for years to come. Since a student's sense of belonging can be a strong predictor of their eventual success, SEG is committed to providing budding geophysicists with as many tools and networking opportunities as possible as they grow into their geophysical career.

SEG student chapters are an excellent resource to increase interest among students of geophysics. By providing opportunities for leadership, achievement, and cultivation of ideas, Student Chapters open the door for students to actively participate in projects and initiatives that promote geophysics. For more information regarding SEG student chapters, please visit seg.org/studentchapters.

COMMITTEE:
Student Chapter Excellence Program Committee, subcommittee of CUSP
See the full committee member list at seg.org/about-seg/governance/committees

INDIVIDUAL INVESTORS:
Endowment Funds: US$1,593,590
Student Support Fund: anonymous donor
SEG/Rutt Bridges Emerging Nation Grants
Brian Sabin Student Support Fund

2018 STATS

336 CHAPTERS
66 COUNTRIES

RECIPIENTS/AWARDS
2018 Best SEG student chapter — Taras Shevchenko National University of Kyiv
US$5000 award

25 OUTREACH GRANT APPLICATIONS RECEIVED
5 RECIPIENTS
US$3040 TOTAL AWARDS
To become a geophysicist, it takes motivation, discipline, and immense curiosity. Geophysicists in the modern era have ever-changing roles, from oil and gas exploration, evaluation of climate change and environmental hazards, to the pursuit of groundwater and improved humanitarian welfare, and infrastructure revitalization and development. Geophysicists today are impacting our world more than we ever thought imaginable, and training the next generation of geophysicists is crucial to preserving and building upon the science obtained thus far.

As young people gain interest in the field, SEG wants to meet them with the tools and support they need to build a life-long career. One of the most lucrative tools for students, both undergraduate and graduate, is the SEG scholarships Program. SEG feels deeply that financial status should not prevent students from pursuing their passion, and these scholarships help fill the gap and allow students more financial freedom.

“I do not come from a wealthy family, and no one in my family is a geoscientist,” said Andréa Darrh, a first-year Ph.D. student at Colorado School of Mines. “I’m not sure they even know exactly what I do! But, I would not have been able pursue a Ph.D., or possibly even an undergraduate degree, in geophysics had it not been for the SEG scholarships Program. In high school, I was looking at out-of-state universities, and we didn’t have the means to pay the high tuition costs. So, I searched “geoscience scholarships” on the Internet and SEG popped up. I applied, and shockingly, I was awarded my first SEG scholarship for my upcoming freshman year.”

Andréa is a native of Parish, New York, and graduated from Texas A&M University with a bachelor of science degree in geophysics before beginning her Ph.D. in the fall of 2018. She is a fifth-year recipient of an SEG scholarship, and the funds have been applied to tuition for her to continue studying nonseismic geophysical methods. Her love for geoscience was sparked by an earth science class in high school, which led her to Texas A&M University.

“As a freshman at A&M, I was petrified of being late to my first geoscience class, so I showed up an hour early and listened to the professor teaching the class before mine,” said Andréa. “My curiosity got the best of me, and I was so fascinated in what he had to say that I kept showing up early week after week. My geology professor at the time noticed and advised me to join this professor’s research group, and that’s when it all began for me.”

At Texas A&M, Andréa attended field camps in Odessa, Texas, studying the erosion of the Odessa meteor, and later in Brenham, Texas, tending to a neglected Civil War cemetery by locating and marking burials with proper headstones. She is now embarking on a new journey, having almost completed her first year of the five-year Ph.D. program at Colorado School of Mines.
“Even as a young geoscientist, SEG has already done so much for me. The Scholarships Program enabled me to pursue my dreams, and the mentor assigned to me through the program has forever changed me. I am the person I am today because of my mentor and the professional development I have received through SEG.”

When asked if there was anything she would want SEG and supporters of the SEG Foundation to know, her voice cracked with gratitude. “The generosity and donations of others is the only way I can pursue what I love,” she said. “You are making dreams come true, and I know there are others that have a story like mine. Thank you.”

Only time can tell Andréa’s next steps, but she dreams big stating she could see herself as a professor or in research. But she also has interest in archaeological geophysics studying ancient ruins, or maybe, if science progresses, even pursuing geophysical work on Mars. “How cool would that be?” she said. “Maybe someday we will have communities on Mars, and it would be amazing to apply my research there.”

SCHOLARSHIPS PROGRAM

Since its inception in 1956, the SEG scholarships Program has been helping advance the field of applied geophysics by encouraging students who excel in the geosciences. Approximately US$8.4 million in scholarship money has been awarded to date to the top geoscience students based on merit. From freshmen just beginning their education to Ph.D. students doing research to advance the field, SEG scholarship awardees are recipients of the most prestigious geoscience scholarships in the world.

SEG scholarships range from US$500 to $10,000 per academic year, and the number of scholarships awarded depends chiefly upon the number of sponsors and the amounts they contribute. For more information regarding SEG scholarships, please visit seg.org/scholarships.

COMMITTEE:

Scholarships
Ron Kerr, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE AND INDIVIDUAL INVESTORS:

Endowment Funds:
US$7,776,000
48 individual, 13 corporate, 10 sections/societies

See page 47 for a listing of the 2018–2019 Scholarship Awards.
Increasing student involvement in the field of geophysics is a primary goal of SEG. The Society aims to invest in the future by supporting future generations of geoscientists and helping them succeed through hands-on, real-world opportunities that provide exposure to the field well beyond the classroom. One of the ways to achieve this goal is through the Society’s partnership with Chevron in pursuit of the Student Leadership Symposium (SLS).

Each year, SLS selects 50 highly motivated students who are active officers in their SEG student chapters to participate in a two-day leadership symposium during SEG’s Annual Meeting. SLS offers students the opportunity to collaborate with peers and professionals from all over the world to gain leadership, teamwork, and communication skills and expand their knowledge and network in all things geoscience.

In 2018, Sara Kellal of Algeria was selected as one of the participants of SLS in Anaheim. She is a second-year graduate student studying petroleum geophysics at the University of Boumerdes. Sara has served various roles in her SEG student chapter, stating that when she first joined, the chapter was fairly inactive. During four years of active involvement, she has served as communications representative, external relationship assistant, and secretary. Currently, Sara is a student leader and representative for the SEG Women’s Network Committee in Algeria. Through her involvement, she has become more aware and actively involved in various SEG programs, which led her to SLS.

“I don’t know how to describe my excitement when I was accepted into SLS,” said Sara, grinning ear to ear. “I’ve never been outside of Algeria, and to be accepted into an international program with the opportunity to travel and meet geophysicists from all over the world … it was tremendous. To be honest, when I heard I was accepted, I didn’t sleep all night because I was so excited.”

Sara credits the training she received through SLS for molding her into a leader and giving her the confidence to make presentations and ask questions in a group setting.

“I’ve always been a shy and timid person,” said Sara. “I didn’t know how to talk and engage in conversation, and SLS gave me the chance to improve my communication skills. It forced me to work in groups with new people and it’s amazing how much I grew as a person in such a short time. I completely came out of my shell, and I am now more confident in my work and in myself.”

Sara said networking with peers and professionals was her favorite aspect of the program, and she stays in touch with many people she met through SLS and the Annual Meeting.

“There were so many people there of high authority,” she said. “I was humbled just being in the same room as them! The overall experience was incredible. It has had such an impact on me, and I am better because of this program. It expanded my perspective, taught me new skills, and connected me with people all over the world.”

Sara will finish her degree in October 2019 and plans to pursue a second master’s degree in exploration geophysics at the University of Leeds in England. She said her experience in SLS was a rare and cherished opportunity, and she expressed her deep gratitude to Chevron, SEG, and the donors of the SEG Foundation for the chance to participate in such a unique program.

STUDENT LEADERSHIP SYMPOSIUM

The SEG/Chevron Student Leadership Symposium (SLS) focuses on leadership, teamwork, and community skills building for 50 student participants who are all active officers of their SEG student chapters. SLS
recipients receive grant funding to cover expenses related to travel, accommodations, and registration to the SEG Annual Meeting. SLS immediately precedes the SEG Annual Meeting, and includes an address by the SEG president, best practice presentations from selected SEG student chapters, professional leadership coaching, an organized team-building activity, and a strategic problem-solving session with the SEG Board of Directors and other SEG leaders. Student travel grants cover the expenses for travel, lodging, and registration to the Annual Meeting. For more information regarding SLS, please visit seg.org/sls.

COMMITTEE:
Travel Grants
Kyle Spikes, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTOR:

Sara Kellal, graduate student at University of Boumerdes


2018 STATS
APPLICATIONS
95 APPLICANTS
Applicants must be active SEG student chapter officers

AWARDS/GRANTS
50 RECIPIENTS
50 UNIVERSITIES
27 COUNTRIES
20 FEMALES
30 MALES
18 PHD
16 MS/MSC
16 BS/BSC
US$108,345 TOTAL TRAVEL GRANTS

SEG.ORG/SLS
POSITIVITY AND GRATITUDE
FROM AN SEP PARTICIPANT

The ability to take life in stride and turn challenges into opportunities is outstanding. Rana Benbella, a 24-year-old geophysicist from Cairo, Egypt, has learned that even when things do not go as planned, unexpected opportunities arise and can result in far more than imagined.

Rana received a bachelor of science degree in geophysics from Ain Shams University and is currently continuing her studies as a graduate student. She originally planned to enter the school’s aerospace engineering program. When the opportunity failed to present itself, Rana changed majors and chose to pursue geoscience because it has the aerospace components with the addition of earth science and physics. Rana said as a child she always wanted to travel, and she chose a field that would allow her to see and study the world.

“My dream is to travel, and I’ve always wanted to do something different,” said Rana. “I think things have worked out now that I landed in geophysics.”

Rana quickly became involved with the university’s SEG student chapter, serving as chair of the Research and Development Committee. As a third-year undergraduate student, she applied to the SEG/ExxonMobil Student Education Program (SEP), a two-and-a-half-day short course that provides college students hands-on real-world training during the SEG Annual Meeting. Unfortunately, due to incomplete documentation, Rana could not attend SEP that year.

But, as she said, she kept moving forward. Her persistence landed her a second opportunity to attend SEP two years later in Anaheim, and according to Rana, it was worth the wait.

Rana Benbella, graduate student at Ain Shams University

“It was an amazing experience,” she said. “It was my first time to the United States, and overall it was a new and exciting experience for me. It was great to hear the different technical views at the Annual Meeting and to learn how geophysics is applied throughout the world. I learned so much and connected with so many people.”

ExxonMobil is a critical partner for SEP and provides course materials, team exercises, and instructors to offer a unique experience and prepare students for the challenges of a career in the oil and gas industry. Travel grants provide funding to cover expenses related to travel, lodging, and registration for SEP and the SEG Annual Meeting. SEP participants are also encouraged to take advantage of the opportunities at the Annual Meeting, including attending presentations of the technical program, networking with peers and industry experts, engaging in student-oriented events, and visiting vendors in the exhibition hall.

Rana credits her experience at SEP for an internship she was recently selected for in France. She met representatives of TOTAL S.A. on the SEG Annual Meeting exhibition floor and continued to follow up regarding internship opportunities. Her tenacity paid off, and Rana will intern for six months, May through December 2019, in Paris.

Rana is also enthusiastic about the many adventures SEG has already provided in her young career. She has traveled to Poland and Ukraine for SEG field camps, the United States for the Annual Meeting, and now France for her internship. She said she hopes to continue to work and learn in the oil and gas industry while simultaneously completing her master’s degree and pursuing a Ph.D.

“SEG is paving the way for me to live my dream — to travel the world and do what I love,” she said. “It’s funny how things work out. It hasn’t been expected, but with some persistence and hard work, I guess anything is possible.”
STUDENT EDUCATION PROGRAM

SEP is staffed with leading professional geoscientists who act as instructors and facilitators through two-and-a-half days of lectures and discussion followed by practical hands-on exercises. This program, immediately preceding the SEG Annual Meeting, includes lectures and exercises directly related to geoscience/geophysical work performed in the oil and gas industry. ExxonMobil generously provides course materials, team exercises, and instructors. Student travel grants cover the expenses for travel, lodging, and registration to the SEG Annual Meeting. For more information regarding SEP, please visit seg.org/sep.

COMMITTEE:
Travel Grants
Kyle Spikes, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE INVESTOR:

ExxonMobil

SEP BY THE NUMBERS (2008–2018):*

\[762\text{ participants}, \quad 32\% \text{ females}, \quad 68\% \text{ males}, \quad 43\% \text{ MS/MSc}, \quad 35\% \text{ PhD}, \quad 22\% \text{ BS/BSc}\]

*2010–2018 classification data (615 participants)
Taking the leap from student to professional can seem overwhelming, but SEG aims to ease the transition through its various student grants and educational programs. For Edith Sotelo, a recent graduate of Texas A&M University, an SEG Technical Program Travel Grant helped her break into the professional scene and gain real-world experience at the 2018 SEG Annual Meeting in Anaheim.

Edith was born and raised in Peru where she attended Universidad Nacional de Ingeniería and majored in chemical engineering. She went on to pursue a master’s degree in petroleum engineering, and during her coursework she met Dr. Gibson, a professor of geophysics. Dr. Gibson became a great mentor for Edith, and upon completion of the graduate petroleum engineering program, she joined Dr. Gibson’s research group and went on to complete a second master’s degree in geophysics. In her final year of the geophysics program, Edith wanted to submit an abstract and present her research at the 2018 SEG Annual Meeting, but said funding was tight and the school offered limited financial support for trip-related expenses.

“Dr. Gibson has always been very supportive of my research and suggested that I apply for a travel grant,” said Edith. “It was the first time I applied for an SEG Technical Program Travel Grant, and I was so happy that I was awarded the grant. It covered all of my expenses. I could not have had the experience without the funding.”

SEG Technical Program Travel Grants provide funding for students and recent graduates who are chosen to present a paper at the SEG Annual Meeting. In addition to presenting their research to a live audience, recipients have the opportunity to engage in other activities available at the meeting as well as network with peers, professionals, and industry experts. SEG Technical Program Travel Grants are awarded to recipients pursuing a degree in geoscience or related fields and who are in compliance with SEG and OFAC sanctions and policies.

“It was such a fulfilling experience,” continued Edith. “At first, I was a bit intimidated because the SEG Annual Meeting is a huge event, and it was the first time for me to present my research to such a vast audience. But as I engaged with the audience and they asked questions, I became quite proud of my work. And then, of course, it enabled me to interact with others in the industry related to my research topic.”

Edith presented her abstract titled, “Compliance estimation and multiscale seismic simulation of hydraulic fractures.” She believes that this study has the potential to improve fracture characterization in unconventional reservoirs. Her work was published in the 2018 November issue of *Interpretation*. Edith plans to dive even deeper into her research while pursuing a Ph.D. at the University of Lausanne in Switzerland. She also said she plans to continue her involvement with the Society.

“I really appreciate SEG for believing in me enough to fund such an incredible experience,” said Edith. “It shows that the Society supports the upcoming generation of geoscientists, and that it is truly investing in the future of the field. As the current generation paves the way with modern discoveries and innovations, the baton will eventually have to be passed to the next generation, and we are eager to receive it! I’m very thankful to the professionals who are supporting students, and I hope to one day also have the opportunity to give back.”
STUDENT TRAVEL/REGISTRATION GRANTS

Students interested in participating in SEG-sponsored student programs are encouraged to apply for travel and registration grant assistance. In 2018, SEG Technical Program Travel Grants and Student Registration Grants were provided for students presenting at the SEG Annual Meeting in Anaheim. In addition, registration grants were also made available to students participating in the SEG Summer Research Workshop in Galveston, Texas. For more information regarding travel grant opportunities, please visit seg.org/travelgrants.

COMMITTEE:
Travel Grants
Kyle Spikes, chair
See the full committee member list at seg.org/about-seg/governance/committees

INDIVIDUAL INVESTORS:
Arthur Cheng

Endowment Funds:
SEG/Rutt Bridges Annual Meeting Travel Grants
Student Support Fund

2018 STATS

APPLICATIONS

61 ANNUAL MEETING TRAVEL GRANT APPLICANTS

590 TOTAL STUDENT ATTENDEES AT ANNUAL MEETING

RECIPIENTS/AWARDS

10 TECHNICAL PROGRAM TRAVEL GRANT RECIPIENTS

49 ANNUAL MEETING STUDENT REGISTRATION GRANTS

5 SUMMER RESEARCH WORKSHOP REGISTRATION GRANTS

US$15,993 TOTAL AWARDS

SEG.ORG/TRAVELGRANTS
The SEG Challenge Bowl combines knowledge, competition, and fun on a global stage for geoscience students. Undergraduate students from all over the world compete in local and regional competitions with the hope of qualifying for the World Finals at the SEG Annual Meeting.

Multiple choice and short-answer questions keep students on their toes as they rush to engage in various topics of geoscience along with history of the field and questions regarding SEG. This unique opportunity allows students to engage, compete, and network on an international stage and is made possible by the SEG Foundation and the generosity of its donors. The SEG Challenge Bowl has become an elite and favorite program of students, and the benefits expand well beyond the competition stage.

Santiago Actis and Abelardo Romero, both seniors at the University of La Plata, Argentina, went into the 2018 Challenge Bowl as somewhat underdogs. Santiago competed in local and regional competitions in 2017, but did not advance to the World Finals. He said partnering with Abelardo in 2018 was his second chance at a great opportunity.

“I love the competition,” said Santiago. “It’s a chance to test my knowledge in geoscience and meet people from other universities.”

Santiago and Abelardo teemed up, and as seniors they felt more prepared for the 2018 competition. The team competed locally but skipped the regional competitions due to being the only eligible team. They were then automatically qualified for the 2018 World Finals at the SEG Annual Meeting in Anaheim.

“We didn’t know what to expect,” said Abelardo. “There are few Latin American teams, so we didn’t know where we fell in the rankings, but we were really excited for the opportunity to compete in Anaheim.”

But getting to Anaheim posed the real challenge. The university Santiago and Abelardo attend is free for students, but any activity outside of the university is costly, and funding is difficult to obtain. They applied for multiple grants to assist with the costs related to travel and accommodations associated with participating in the Challenge Bowl and even paid some expenses out-of-pocket. Luckily, they landed three grants — one from the Williams Foundation in Argentina and the other two from Pan American Energy and their own faculty. In October 2018, the two boarded a plane for the 13+ hour trip from Buenos Aires to Anaheim.

They describe their experience as eye-opening. In addition to the Challenge Bowl, they took advantage of the opportunity to attend multiple presentations, network with peers from around the world, and meet industry experts as well as SEG staff.

“It was amazing to meet people whose research I have studied,” said Santiago. “I can’t describe the feeling when you actually shake their hand. Plus, it was great to meet people involved in the industry as well as other students that are on our same path. I think
connecting with people was the most beneficial part of the entire experience. It was so interesting getting different perspectives and seeing various types of science, because geoscience is different all over the world. Seeing it outside Argentina gave us a new and broader perspective.”

Once the Challenge Bowl geared up, Santiago and Abelardo said they weren’t sure what to expect. “We never expected to win, but as we continued to advance we thought, ‘well, maybe we can win,’” but both somewhat laughed at the thought. As the competition heated up, the team found themselves in the finals against King Abdul University, Saudi Arabia, and the University of Houston, USA, and in the end took the 2018 Challenge Bowl World Finals title. Both also received a US$500 cash prize.

The team reflected on their experience with laughs and gratitude. They also reiterated that the experience allowed them to expand beyond the classroom and gain hands-on experience and meet people from around the world who also share their passion for geoscience.

“We just want to say thank you to SEG and to the donors that make programs like the Challenge Bowl possible,” they concluded. “We consider this a once-in-a-lifetime experience, and we gained much more than winning the competition. To have the opportunity to participate in something outside of the university, outside of Argentina, and setting a precedent of what our education is capable of, was simply incredible. I really think this experience has laid a foundation for our careers. After going to Anaheim, we are both interested in someday working abroad and further exploring geoscience and geophysics around the world. Thank you.”

CHALLENGE BOWL WORLD FINALS

Launched in 2006, this international contest tests students’ breadth and depth of knowledge about the field of geoscience. The quiz show format results in intense competition as contestants compete in a rapid-fire, push-the-buzzer, who-can-answer-first quiz competition to challenging geoscience questions.

The contest itself is in the form of a short answer multiple choice quiz on topics in the geosciences (geology, geophysics, geography, and some geodesy), as well as some questions about the history of the science and SEG itself. Geoscience questions range in difficulty from second- and third-year undergraduate level to first-year graduate school.

Winners of regional competitions competed in the SEG Challenge Bowl World Finals during the SEG Annual Meeting in Anaheim on 15 October 2018.

INDIVIDUAL INVESTORS:
Multiple individual donors

2018 WORLD FINALS STATS

10 TEAMS COMPETED
20 STUDENTS TOTAL

RECIPIENTS/AWARDS

FIRST PLACE — SANTIAGO ACTIS AND ABELARDO ROMERO, LA PLATA UNIVERSITY, ARGENTINA
SECOND PLACE — KING ABDULLAH UNIVERSITY
THIRD PLACE — UNIVERSITY OF HOUSTON
US$1500 TOTAL AWARDS

INDIVIDUAL INVESTORS:
Multiple individual donors
Each year, one undergraduate or graduate student is chosen by the Society of Exploration Geophysicists as the Near Surface Geophysical Research Award recipient. This highly distinguished award honors and supports student research by offsetting expenses directly related to the recipient’s near-surface geophysical research, including field data acquisition, laboratory studies, specialized computer software, and other activities related to the completion of the research program.

In 2018, the Society honored Alexander Yablokov, a Ph.D. student at Novosibirsk State University (NSU) in Russia, for his work on the implementation and development of algorithms for automatic processing of surface wave data. Alexander began his research as an undergraduate at NSU, and received positive results in data processing for engineering seismic. He continued his research and went on to earn bachelor and master of science degrees in geology and geophysics at NSU. He also worked in the university’s laboratory. His research is constantly evolving, adding new dimensions as he dives deeper into his topic. Alexander says he actively collaborates with other researchers by assisting with synthetic seismogram modeling by finite difference solvers, while colleagues provide him with field data.

“Qualification and experience are sufficient for us to conduct the processing and interpretation of exploration and engineering seismic data,” said Alexander. “I have advanced skills in numerical modeling of seismic waves, programming, seismic data processing, inversion algorithms, as well as field seismic survey experience. We are working on the implementation of MASW in lateral heterogeneous medium, and just recently, I began studying advanced spectrum analysis of surface waves.”

Alexander serves as vice president of his university’s SEG student chapter and contributed to the organization of a geophysical field camp in Republic Altai which studied unique archaeological sites. He also participated in various research groups and is currently working at the Research Institute. Alexander is also passionate about sharing geoscience with schoolchildren.

In addition to winning the 2018 SEG Near Surface Geophysical Research Award, Alexander is a winner of the local International Scientific Student Conference, as well as a travel grant recipient from NSU to deliver an oral presentation at the EAGE conference in Anapa, Russia. Although only three years into his research, Alexander has already authored 22 articles.

The SEG Near Surface Geophysical Research Award was founded by the Near-Surface Geophysics Technical Section in 2016. The endowment provides sustainable grant funding to deserving students. Alexander is the third Near Surface Geophysical Research Award recipient and received a US$1740 grant to support his project.

A special thank you to the Near-Surface Geophysics Technical Section of SEG for establishing and increasing an endowment for this specialized award. Thanks also to the individual donors who have supported this annual award through contributions to the SEG Foundation.
NEAR SURFACE GEOPHYSICAL RESEARCH AWARD

The intention of the SEG Near Surface Geophysical Research Award is to provide a research grant(s) in support of an undergraduate or graduate student in good standing, enrolled in a relevant academic program at an accredited institution, and engaged in near-surface geophysics research. The award is further intended to offset expenses directly related to the awardee’s near-surface geophysics research, including field data acquisition, laboratory studies, specialized computer software, or other general activities related to the completion of the research program. For more information regarding this award, please visit seg.org/ns.

COMMITTEE:
Travel Grants
Kyle Spikes, chair
See the full committee member list at seg.org/about-seg/governance/committees

CORPORATE AND INDIVIDUAL INVESTORS:
Endowment Funds: US$33,260
Near-Surface Geophysics Technical Section of SEG (founding supporter)
HISTORICAL PRESERVATION

The sense of history can contribute to community pride and to a better understanding of the community’s present. The SEG Historical Preservation Committee was formally established to continue the preservation of important artifacts, instruments, and documents that had previously been a part of the SEG Geoscience Center. SEG volunteers continue to visit and clean the artifacts that were placed in temporary or permanent locations.

With the mission to share the history of Oklahoma companies and its people in the geophysical industry, Scott Smithson, a retired professor of geophysics from the University of Wyoming, donated a Mertz Model 10 Vibrator to Seismic Source Company in 2018. The cost of transportation from Wyoming to Ponca City, Oklahoma, was provided by a grant from the SEG Historical Preservation Fund for preserving geophysical history.

Vibroseis is a technology that transformed oil exploration throughout the world. Known as a “vibrator” to the people who use it, this 1971 Mertz Model 10 vibrator mounted on an Atlas off-road buggy generated a controlled input of seismic frequencies that were measured and recorded as part of a process to map subsurface geology and aid in locating petroleum reservoirs. The vibroseis system eliminated the need for dynamite by “vibrating” the ground continuously, creating a controlled and steady flow of seismicity. By recording and measuring the seismic waves with follow-up data processing, geophysicists constructed highly detailed 3D images of the earth’s subsurface geology, producing displays that increased the likelihood of identifying petroleum reservoirs.

The vibrator pictured above was used by Conoco vibroseis crews in the 1970s and was later donated to the University of Wyoming for hands-on geophysical research projects to teach students the methods of seismic exploration.

INDIVIDUAL INVESTORS:
Endowment Funds: US$190,486
Cecil and Ida Green and others
SEG ONLINE

Members benefit from SEG’s leading online services and value-added content concerning all things geophysics. SEG works diligently to add value for its members and other visitors by producing and maintaining online information that is useful and timely.

Ongoing efforts are made to leverage information and technology in an efficient, productive, and secure manner. Improved security features of the website help visitors feel secure when navigating the content and when providing personal and payment information to SEG for transactional purposes. Improving search features and functionality, updating promotional items, allowing visitors to opt-in to targeted email campaigns, and enhancing the dues renewal process for members are other ways that SEG enriches its website experience. SEG also manages the appropriate hardware, software, networking, and communications infrastructure for automation.

INDIVIDUAL INVESTORS:
Endowment Funds: US$214,619
Rutt Bridges and various individual donors

SEG PUBLICATIONS

With a commitment to editorial excellence and in-depth coverage of the changes, trends, and technologies shaping the geophysics industry, SEG’s portfolio of publications and books provides key information and resources for geoscience professionals and students around the world.

The online SEG Library contains more than 20,000 articles from The Leading Edge, GEOPHYSICS, and INTERPRETATION; more than 30,000 expanded abstracts from SEG Annual Meetings and other meetings; more than 130 eBooks; and a vast amount of applied-geophysics content hosted for related organizations. This online resource provides countless opportunities for members and those in the general public to learn more about the science or to delve deeper into a specific topic or theory.

NEW BOOK TITLES IN 2018:

- Seismic Attributes as the Framework for Data Integration throughout the Oilfield Life Cycle by Kurt J. Marfurt
- Introduction to Petroleum Seismology, second edition by Luc Ikelle and Lasse Amundsen
- The Seismic Signal and Its Meaning by André Luiz Romanelli Rosa

INDIVIDUAL INVESTORS:
Endowment Funds: US$28,937
Various individual donors

2018 STATS

US$8008
TOTAL GRANTS

2018 STATS

US$1787
TOTAL GRANTS
CORPORATE INVESTORS

Many industry leaders have partnered with the SEG Foundation to give back to the geophysical community that has supported them over the years. Corporate Sustaining Investors create new opportunities and expand on existing services provided through SEG to its membership and to the general public.

The SEG Foundation and SEG recognize and thank our Corporate Sustaining Investors. The recognition list below is organized by lifetime giving to the SEG Foundation, including major contributions and employer matching programs.

$2,000,000+

- Schlumberger
- ExxonMobil
- Anadarko Petroleum Corporation
- Human Energy

$1,000,000 TO $1,999,999

- CGG
- Equinor
- TGS
- BGP
- PGS
- Halliburton

$500,000 TO $999,999

- Apache
- ION
- KiwiEnergy
- Emerson
- ConocoPhillips

$250,000 TO $499,999

- Total
- Geophysical Pursuit, Inc.
- Santos
- IHS Markit
- Marathon Oil Corporation

Note: All monetary values are in U.S. dollars.
TRUSTEE ASSOCIATES

SEG Foundation Trustee Associates directly contribute to the success of many important programs through financial support and outstanding leadership in the SEG Foundation’s philanthropic activities. Individuals can become a Trustee Associate with a commitment of $10,000 (or more) to the Annual Fund (outright gift or up to a five-year pledge). Trustee Associates are then recognized by their cumulative lifetime giving to the SEG Foundation. Since their inception in 1989, Trustee Associates have contributed almost $12.5 million to the SEG Foundation.

$1,000,000+
Anonymous donor

$500,000 TO $999,999
Debra and Mark Gregg/KiwiEnergy Ltd.

$250,000 TO $499,999
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Wulf F. Massell
Red McCombs
Dolan K. McDaniel

Note: All monetary values are in U.S. dollars.

*deceased
<table>
<thead>
<tr>
<th>Trustee Associates</th>
<th>Memorial Tribute</th>
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<tbody>
<tr>
<td>Raymond H. Mendez</td>
<td>Sadly, the SEG Foundation lost four Trustee Associates in 2018. Each made a significant difference in the lives of those they knew and will sincerely be missed in our geophysical community and Foundation family.</td>
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<td>Richard and Christine Miles</td>
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<td>Terry and Nadine Young</td>
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<td>Jin Zhou</td>
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<td>L. Decker Dawson</td>
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<td>Ruth Harrison</td>
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<td>Trustee Associate since 1994</td>
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<td>(Mrs. James E. Harrison)</td>
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<td>Richard E. “Dick” Schneider</td>
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2018 SUSTAINING TRUSTEE ASSOCIATES

Sustaining Trustee Associates form an elite group of SEG Foundation contributors that shares an ongoing commitment to the vitality of the organization’s activities. Sustaining Trustee Associates are existing Trustee Associates who have made an additional commitment of US$2000 (or more) to the Annual Fund in 2018.

William and Evangeline Abriel
William “Bill” Barkhouse
David and Rebecca Bartel
Glenn and Lorie Bear
Alistair and Mary Brown
Lisa Buckner
Arthur Cheng
Richard Cooper
Robert and Lois Corbin
Pete and Terri Cramer
Rocco and Julie Detomo
Kenneth A. Dingwall
James and Patty DiSiena
Peter and Kathy Duncan
Michael Dunn
Kim and Karen El-Tawil
Timothy Fasnacht
Sergey Fomel
Linda Ford
Michael C. Forrest
Donald W. and Nancy* Frye
Jim Funk
Larry and Connie Galloway
Gretchen M. Gillis
Steve Hill
Rhonda and John Jacobs
Gary and Joni Jones
Scott King
Alfred and Julie Liaw
Mike and Bonnie Louden
James L. McNett
Gary and Mary Mercado
Edith J. Miller
Dorsey and Paige Morrow
Bob and Penny Neese
Stuart Obkirchner
Magne and Marianne Reiersgard
Karl and Carol Schleicher
Michael and Lynn Schoenberger
Gary and Lorene Seros
Damir S. Skerl
Alison Weir Small
Barry Smith
Tom and Evonne Smith
Martin Stupel and Catherine Lappe
Kenneth M. Tubman
Richard and Nancy White
John A. Willott

2018 DOODLEBUGGER SOCIETY DONOR CLUB

Members of this distinguished donor club choose their giving level from US$1000–$9999 in support of the 2018 Annual Fund.

William F. Adamson
Tom Agnew

2018 OTHER ANNUAL FUND DONORS

The majority of the donors listed here kindly included a gift to the SEG Foundation with their SEG membership dues (renewal) payments. Donors listed contributed up to US$99 in support of the 2018 Annual Fund.

Peter A. Aaron
Kenneth C. Abdulah
Susumu Abe
Raymond L. Abma
Gary Acton
Steve Adams
Sola Adesanya
William M. Agueldo
Jonathan B. Ajo-Franklin
Andrey Akhmetzhanov
Ali Qays Al-Janabi
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Barbara I. Anderson
Carl W. Anderson
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Paul D. Beggs
David L. Behm
Mark E. Bengtson
Kjell Berg
Marcello Bernabini
Angus I. Best
Larry A. Beyer
Shawn Biehler

*deceased
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Andrew C. Williams
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Theodore G. Zacharakis
Ke Zhang
Binzhong Zhou
Hua-Wei Zhou
Jokin Zubizarreta

2018 PROGRAMMATIC GIVING

The following donors thoughtfully made a gift to a specific SEG program in 2018.

Jo Alamri
Roger G. Baker
Paola Barnhisel
David and Becky Bartel
Craig and Betsy Beasley
Vahe and Maral Berejiklian
Barbara Bohn
Scott Cameron and Penny Bowen
Lawrence Braile
Huyen Bui
Neda Bundalo
J. C. Burger
Garo and Valerie Chalian
Arthur Cheng
Dean Clark
Martha Clark and Family
Andreas Cordsen
T. Norman and Ruby Crook
Helen F. Cunningham
Paul S. Cunningham
John de Leon
Virginia Dunn
Marvin and Charlotte Fisher
Michael C. Forrest
Roger and Beverly Forster
Mike Galbraith
Eric Gardner
E. W. and A. Z. Gelfand
The Gharakhanian Family
Ronda S. Giblin
Brian and Pat Gibson
Joseph Gittelman
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Tien Grauch
Earl and Reba Griffin Trust
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Rocky and Leisa Roden
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David Worthington
Omar Zaman
Pam Zeitlin
Sally G. Zinke
Anonymous
Anonymous
Agile Geoscience Ltd.
AIPG Foundation
Armenian Apostolic Church of Colorado
Pacific Coast Section of SEG

2018 CORPORATE MATCHING GIFTS

Many companies offer matching gift programs as a way to encourage employees (current and retired) to contribute to charitable organizations, both financially and with volunteer hours. The following companies matched employees’ gifts to the SEG Foundation in 2018, providing an additional US$44,415 in support.

Apache Corporation
Chevron Matching Employee Funds (YourCause LLC)
ConocoPhillips Company
ExxonMobil Foundation
Occidental Petroleum Corporation (Oxy)
Shell E&P Company
TGS-NOPEC Geophysical Company

*deceased
2018–2019
SCHOLARSHIP AWARDS:

SPONSORED AWARDS:
Anadarko/SEG scholarship
SEG/Equinor Scholarship
SEG/Latin American and Caribbean Scholarship
Dr. and Mrs. S. Norman Domenico Scholarship
Earl D. and Reba C. Griffin Memorial Scholarship
George V. Keller Scholarship

ENDOWED AWARDS:
SEG Foundation/Apache Scholarship
SEG Foundation/BP Scholarship
SEG/Chevron Scholarship
SEG/Excel Geophysical Services Scholarship
ExxonMobil Upstream Research Co. Scholarship
SEG/Landmark Scholarship
SEG/Schlumberger Scholarship
SEG/Shell E&P Scholarship
SEG/WesternGeco Scholarship
SEG/WesternGeco/Carl Savit Memorial Scholarship
SEG/WesternGeco/Henry Salvatori Memorial Scholarship
SEG 75th Anniversary Scholarship
SEG Foundation Scholarship
SEG/AGIP Scholarship
SEG/James L. Allen Scholarship
Michael Bahorich/SEG scholarship
SEG/David Bartel Scholarship
David and Rebecca Bartel Veteran’s Scholarship
Michael L. Batzle Scholarship
Ted Born Memorial Scholarship
SEG/John R. Butler Jr. Scholarship
John D. Delbridge Memorial Scholarship
SEG/Norman and Shirley Domenico Scholarship
Michael C. Forrest Scholarship
Donald and Nancy Frye Scholarship
Debra and Mark Gregg Scholarship
Frans and Alice Hammons Scholarship
SEG/P. C. Havens/Seismic Exchange Inc. Scholarship
SEG/James and Ruth Harrison Scholarship
SEG/Marvin and Jene Hewitt Scholarship
Fred and Kathi Hilterman Scholarship
SEG/Gerald W. Hohmann Memorial Scholarship
SEG/Ian G. Jack Scholarship
SEG/Lucien LaCoste Scholarship
SEG/David R. Lammlen Scholarship
Richard and Rollande Lockhart Scholarship
David E. Lumley Scholarship in Energy and Environmental Science
SEG/Thomas A. Mazza Memorial Scholarship
SEG/Barbara McBride Memorial Scholarship
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Billy F. Mitcham Jr. Memorial Scholarship
Billy F. Mitcham Sr. Memorial Scholarship
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Alexander Mihai and Catherine Ann Popovici Scholarship
James D. and Stella M. Robertson Scholarship
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Robert E. and Margaret S. Sheriff Scholarship
Charlie and Jean Smith Scholarship
Michael T. Spradley Memorial Scholarship
SEG/EAGE/Thomsen/BP Scholarship
SEG/Jack and Catherine Threet Scholarship
Aubra Tilley Scholarship
Shirley A. and Stanley H. Ward Scholarship
J. E. White Memorial Scholarship
SEG/David W. Worthington Scholarship
Keith H. Wrolstad Memorial Scholarship
Kenneth L. Zonge Scholarship
Geophysical Society of Alaska Scholarship
Dallas Geophysical Society Scholarship
DGS/Karen Kellogg Shaw Memorial Scholarship
SEG/Denver Geophysical Society Scholarship
GSH/Carlton-Farren Scholarship
GSH/Hugh Hardy Scholarship
Geophysical Society of Oklahoma City Scholarship
Geophysical Society of Tulsa/SEG scholarship

SCHOLARSHIP RECOMMENDATIONS SUMMARY 2018–2019

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<td>30</td>
<td>27</td>
<td>$88,078</td>
</tr>
<tr>
<td>Total</td>
<td>447</td>
<td>$519,766</td>
<td>278</td>
<td>80</td>
<td>29</td>
<td>$417,345</td>
<td>169</td>
<td>42</td>
<td>25</td>
<td>$102,421</td>
</tr>
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</table>

Note: All monetary values are in U.S. dollars.
HOW YOU CAN GIVE BACK

DOING TOGETHER WHAT CANNOT BE DONE ALONE

The SEG Foundation is fortunate to have many loyal and generous donors who believe in the mission of SEG. Many individuals want to give back to the Society and community that has served them and their families well over the years. There are many ways to give, and choosing the right option for you is important. Below are some giving options available to the SEG Foundation. If you have any questions about making a gift, please do not hesitate to contact us directly at foundation@seg.org or 1-918-497-5515. Thank you again for your time, talent, and treasure to help advance and inspire the members of our geophysical community.

MAKE A GIFT BY CHECK.

Please make your check payable to “SEG Foundation” and mail it directly to our Tulsa business office at 8801 S. Yale Ave., Suite 500, Tulsa, OK 74137 USA. If making a year-end gift, the date (postmark) you mail the check is considered the date of delivery.

MAKE A GIFT ONLINE.

The SEG Foundation’s online giving process gives donors the flexibility to make a donation anytime, anywhere. Our secure online processing system assures that credit card information is protected, and multiple SEG program options allow donors to give to the cause of their choice. Check it out today! Visit seg.org/donate for more details.

MAKE A GIFT OF STOCKS.

Often, long-term appreciated assets provide a charitable deduction for the full market value of the security. Such donations also allow the donor to avoid capital gains tax. Please contact the SEG Foundation if you have any questions about making a gift of stock or if you require the account information to complete your gift.

CORPORATE MATCHING GIFTS.

Many companies will match donations made by their employees, their families, and retirees. Serving on an SEG committee? Some companies will also make a donation to match employees’ volunteer hours with an organization. Please ask your human resources office about your company’s matching process and double the impact of your gift today!

ESTATE AND PLANNED GIFTS.

Making a planned gift through your estate is a great way to establish your legacy and celebrate the science and industry that contributed to your own success. Planned gifts can provide income and tax benefits to you and your loved ones. Please contact the SEG Foundation for more information or to let us know that you have included the SEG Foundation in your planning. We would appreciate the opportunity to recognize you now for your future contribution.

DONOR-ADVISED FUND (DAF).

A DAF allows a donor to make a charitable contribution and then recommend grants from that vehicle to a charity at specific times. The advantage to the donor is that a contribution to a DAF provides an immediate tax deduction while allowing him/her to control the timing of distributions from the fund to different charities.

SEEK OUTSIDE FINANCIAL ADVICE.

Not surprisingly, the rules get more complicated when the gift is more complicated. To determine what makes the most sense for you and your family regarding charitable giving, we encourage you to speak with your financial advisor to determine the best method and timing when giving.

OTHER NOTES.

Gifts of US$500 or more directed to endowments and specific programs are accessed a one-time 5% development reinvestment fee to support the work of the SEG Foundation. The SEG Foundation is a registered 501(c)(3) nonprofit. Therefore, your contributions to the SEG Foundation are tax deductible in the United States.
THANK YOU!
For more information on the impactful programs and activities listed in this report, please visit:

SEG: seg.org
SEG Foundation: seg.org/foundation
Professional Development: seg.org/education
GWB: seg.org/gwb
Student Programs: seg.org/students
SEG Wiki: wiki.seg.org
Online Giving: seg.org/donate