

I am writing to thank you for the kit full of wonderful geology samples that you

Here at Science Museum Oklahoma we have already made use of the samples. Las week I caue a ormin of children from our first through third orade spring broak Here at Science Museum Oklahoma we have already made use of the samples. Leaving macroscopic around the cruetale and minerale. camps passing around the crystals and minerals.

We have some experience with children handling smaller mineral samples, but I saw We have some experience with children handling smaller mineral samples, but I satisfies the difference the quality of the samples make to children. Their eyes in the samples and heavish the samples are Insthand the difference the quality of the samples make to children. Their eyes in the band the victor of patring topo large travelops, that the samples are travelops and the victor of patring topo large travelops. up, there were exclamations about how heavy, hard, and beautiful the samples are of children should be commended.

Whoever had the vision of putting very large, very high quality samples in the hands. children already know that rocks are neat. Most of them have their own rock and the state of the

ablideren aiready know that rocks are near Most of them have their own rock of the second sec

Thank you Oklahome Geological for making all this happen Foundation

We are so harper all there

Thank you for coming to our school We appreciate your generosity and Kindness. Thank you for your donation to our school You traveled so far Just to dondte the Rock and Mineral set. are welcome to san Aliquel anytime.

> Sincerely, Vriseyda San Miguel Jelicol

TABLE OF CONTENTS

2	Letter from the Chairman
3-4	Vision for the Future
5	The EveryDay Earth and STEM Outreach Program
6-7	Supporting Earth Science Education
	NEW PROGRAMS FOR 2018
8	The Larry Lunardi Rock, Mineral, and Fossil Collections
9	The David G. Campbell Native American Scholarship Program
	ANNUAL EVENTS
10-12	OGF Grants and Scholarships Banquet
13	OGF Legends Award Dinner / Christmas Reception
14-15	Foundation Investment Summary
16	2018 Donors
17	2018 Sponsors
19-20	2018 Legends



On behalf of the Directors of the Oklahoma Geological Foundation, I am proud to present to you the 2018 Annual Report of the Oklahoma Geological Foundation. This Annual Report provides the Directors an opportunity to briefly discuss the activities and accomplishments of the past year and to thank and recognize all the donors and sponsors whose gifts have been instrumental in the growth of the Foundation.

In 2018, the Foundation expanded the number of Directed Programs to twenty-two, with the addition of two new programs plus over \$100,000 in grants and scholarships were distributed to students, teachers, and schools. These individual grants, scholarships and awards are listed in the Annual Report. It is estimated in 2018 that over 8,600 students, 240 teachers, 50 schools were impacted from these distributions.

As reported in the 2017 Annual Report, the Foundation established the Oklahoma Geological Foundation STEM Program. One of the major programs within the STEM Program is the Foundation's EveryDay Earth Program, which is a video system used to assist teachers and students in Earth Science education and technology concepts. An expanded description of EveryDay Earth is included in this Report.

Another STEM related program established in 2018 is the Larry Lunardi and the Oklahoma Geological Foundation Rock, Mineral, and Fossil Collection Program, which distributes museum-quality rock, mineral, and fossil collections to schools throughout Oklahoma. As one of the Foundation's most popular Programs, one educator wrote "I just received a Grant in the form of rocks, minerals, and fossils. I wanted to write and thank your Foundation for such a wonderful gift for our school. The students are buzzing and completely amazed at this fabulous collection!

This will help us teach many Earth Science lessons. Students will be able to actually touch history! Thank you so much for this wonderful gift, it is absolutely priceless!"

Also, in 2018, the Foundation established the David G. Campbell Native American Scholarship Program. This Program will be designed to promote scholarships for Native American students from Oklahoma who desire to study the Earth Sciences.

The Foundation will continue to establish other meaningful Programs for the benefit of students, teachers, and schools in Oklahoma. Several of the previously existing Programs that have impacted thousands of students and teachers with innovative grants and scholarships are highlighted in this Annual Report.

Like many Foundations, the Oklahoma Geological Foundation continues to face numerous challenges relating to asset growth, balancing school and teacher requests for funding, and operating in a changing economic environment. The Directors continue to work very diligently towards growing and managing the Foundation's assets and investments, while strictly adhering to the Foundation's investment policy to insure confidence among our donors. The Financial Report, as presented in the Annual Report, illustrates the growth and stability of the Foundation, ensuring the success of current and future endeavours and Programs.

As you read through the 2018 Annual Report, you will see that your gifts to the Foundation have and will continue to make a remarkable impact on the education of our students. In a thank you letter received from one student, she wrote: "your generosity towards my educational journey is deeply appreciated! The financial burden you have lifted off my shoulders is such a blessing. I can not thank you all enough...". Another wrote "this scholarship gives me more motivation to achieve my goal. I want to pursue a master's degree after my undergraduate degree and this scholarship is an honor that strengthens my determination". Your gifts to the Foundation do make a difference!

On behalf of the Board of Directors, it is an honor for me to extend my sincere appreciation to you for your continued support of the Foundation. The Directors appreciate each Donor who has made one or multiple gifts. The part you play is extremely important and your commitment to support the many students and teachers across Oklahoma is truly appreciated. Thank you for enabling the Oklahoma Geological Foundation to continue executing its stated Mission and Vision. We genuinely value your involvement and support and respectfully submit the 2018 Annual Report for your review.

Warm and personal regards,

Thomas C. Cronin

OKLAHOMA GEOLOGICAL FOUNDATION

"VISION FOR THE FUTURE"

In 1993, a group of Oklahoma geologists had the foresight and desire to promote Earth Science programs within the Oklahoma school systems. Since 1996, the Oklahoma Geological Foundation has been an instrumental source of funding that directly benefits many Earth Science programs. From the beginning, the Oklahoma Geological Foundation has annually funded grants and scholarships throughout Oklahoma, to students in elementary, middle, and high schools, and to students enrolled in undergraduate and graduate programs in colleges and universities. The Foundation actively promotes numerous programs that support teachers and educational institutions.

The Oklahoma Geological Foundation continues to grow and by end of 2018, the Foundation has established twenty-two programs, each of which are available to encourage the participation in the Earth Sciences. As listed below with the dates of inception, they include:

- 1). The Frederick H. & Lois M. Kate Award (2006)
- 2). The Suzanne Takken Memorial Award (2006)
- 3). The Beth Cronin Elementary School Program (2006)
- 4). Kenneth Stewart Cronin Lecture Series Program (2006)
- 5). OGF Excellence in Earth Science Education Awards Program (2006)
- 6). The Frederick H. & Lois M. Kate EESE Award (2006)
- 7). Herbert G. & Shirley A. Davis OSU Geology Scholarship Program (2007)
- 8). The John Gatchell Earth Science Teaching Program (2008)
- 9). The Philip Boyle Foundation & The OGF's School Program (2008)
- 10). The Charles E. Branham Geological Library Program (2010)
- 11). The OGF Summer Field Camp Grants Program (2011)
- 12). Oklahoma Geological Foundation High School Grant (2011)
- 13). Oklahoma Geological Foundation Middle School Grant (2011)
- 14). Oklahoma Geological Foundation Elementary School Grant (2011)
- 15). Ruffel & OGF Innovations in Earth Science Education Program (2012)
- 16). Shirley A. Davis Program for Earth Science Education (2013)
- 17). F.M. Black Summer Field Camp Grant (2013)
- 18). William A. Clement Earth Science for Guthrie Middle & High Schools (2014)
- 19). Robert W. & Jo Ann Waring Memorial Scholarship Program (2015)
- 20). The Oklahoma Geological Foundation STEM Program (2017)
- 21). The Larry Lunardi & The OGF's Rock, Mineral, & Fossil Collection Program (2018)
- 22). The David G. Campbell & The OGF's Native American Scholarship Program (2018)



"The important thing is not so much that every child should be taught, as that every child should be given the wish to learn"

John Lubbock - 1834 - 1913

From the very beginning, the Oklahoma Geological Foundation has implemented a model of "Excellence in Earth Science Education." With the help and support from the Foundation, this model challenges students and teachers to make Earth Science education a priority. The Foundation's "Vision for the Future" is divided into the following Directives:

- 1). Encourage and financially support students who attend elementary, middle, and high schools within Oklahoma and who are enrolled in a Geological Science curriculum.
- 2). Encourage and financially support teachers and schools within Oklahoma that maintain a curriculum in the Geological Sciences.
- 3). Encourage and financially support students who: a) attend colleges and universities within Oklahoma and major in the Geological Sciences, with the goal of obtaining undergraduate or graduate degrees in those fields; and, b) students who plan to pursue a career in the field of Geological Sciences.
- 4). Encourage and financially support worthy, scientific endeavors that are conducted by other organizations that promote the Geological Sciences in Oklahoma.
- 5). Acknowledge and honor those Professionals that are working in businesses affiliated with the Geological Sciences, and who have made or continue to make significant contributions to their profession and communities.

The future well-being of Earth Science education, the Geological Sciences, and the Oil and Gas Industry will ultimately depend upon the next generation of Geoscientists, and because these future professionals are today's students the vast majority of funds from the Oklahoma Geological Foundation's Programs are being used to educate, train, and prepare students for the future. The Foundation Directors are fully committed to providing the Geoscience educational needs for teachers and institutions in Oklahoma.



Since December 1993,

the Oklahoma Geological Foundation has been a major Supporter of Earth Science education and the Science, Technology, Engineering, and Mathematics, (STEM) Outreach Program in Oklahoma.

Some of the Foundation's existing STEM Outreach Programs include:

- An Earth Science related teacher program called "More! Rocks in Your Head"
- The distribution of Rock, Mineral, & Fossil Collections to Oklahoma schools
- Foundation Annual Awards banquets honoring teachers, students, & schools
- Educational banquets recognizing Oklahoma's Legends in the Petroleum Industry

Recently, the Foundation has developed a new education program entitled "EveryDay Earth" which is a state-of-the-art video system to assist teachers and students in Earth Science education and technology concepts, by interactively exploring Oklahoma's landscapes and geological features. This Program is through a joint venture with Esteem Interactive Learning (a non-profit educational media production company) and Sponsoring Partners. The EveryDay Earth Program is an incredible groundbreaking teaching system that uses actual location based lessons which focus on Earth Science teaching material for schools throughout Oklahoma.

**STEM OUTREACH PROGRAMS

The EveryDay Earth Program was established in 2017 to combine Earth Science educational material in an entertaining format that students will enjoy. It is presented as a light comedic narrative that filters in multiple lessons as the students explore aspects of the Earth's hydrosphere, geosphere, biosphere, and atmosphere.

The Program will consist of ten to twelve stand-alone Modules, each Module being an impactful product, deliverable free of charge to sponsored schools. Production of Module 1 began in the fall of 2017 and was completed in the fall of 2018. The Foundation committed the necessary funding for the initial startup of the EveryDay Earth Educational Program along with participating Sponsors in the development of the Modules. Total cost of the Program is estimated to be \$1,200,000.

Module 1, based on Turner Falls Park in Davis, Oklahoma, contains sub-sections each related to at least six learning standards: Earth Materials (formation of rocks); Earth Processes (karsting, erosion, waterfall formations); Water Resources (human impacts and hydrogeology); Tectonics (Arbuckle Mountains, Earth History); Basic Principles of Geology (formations, fossils, and strata); and GeoEngineering.

Module 2 began production in late 2018. This Module will focus on the role of wind, water, and ice in modifying the surface of the Earth. Topics such as weathering, erosion, rivers, deltas, and oceans are included. Together, Modules 1 and 2 will complete the "Hydrosphere" narrative of the Program. Distribution of both Modules to the schools and teachers will begin in the fall of 2019. More information about the Program can be found on the OGF Website.

"Cherish the natural wonders, cherish the natural resources, cherish the history and romance as a sacred heritage, for your children and your children's children."

Theodore Roosevelt - 1858 - 1919

SUPPORTING EARTH SCIENCE EDUCATION FOR OKLAHOMA SCHOOLS, TEACHERS, AND STUDENTS

The Oklahoma Geological Foundation is extremely proud of the number of students and teachers directly impacted by the Foundation's many Programs and Grants. When a teacher or educational facility applies for funding, the Foundation formally asks the applicant for an estimate on the number of students that are affected as well as how many teachers are involved. The numbers given to the Foundation are remarkable.

ROCK, MINERAL, & FOSSIL COLLECTIONS

One Foundation initiative that has had an incredible influence on students and teachers throughout Oklahoma, is the Rock, Mineral, and Fossil Collection Program.

In April 2015, the Foundation, under the direction and leadership of Larry Lunardi, developed a program to supplement Mr. Lunardi's middle school Earth Science teaching model. Mr. Lunardi volunteers his time to assist instructors as they teach Earth Science education to their students. This Program provides a diverse collection of museum quality rocks, minerals, and fossils to Oklahoma based schools to supplement their Earth Science education program. These collections allow the instructors the ability to teach the Earth Sciences with actual rocks, minerals, and fossils, which is a direct learning benefit for the students. As of December 31, 2018, the Foundation has distributed 117 collections which has had a direct effect on approximately 31,000 students and involving over 650 teachers!

As stated earlier, these numbers are provided to the Foundation by the teachers who have requested and received these Collections.

UNIVERSITY GEOLOGY FIELD CAMPS

Since 2014, the Foundation has provided funding for 150 college level students to attend summer geology field camps. These students have been selected from Oklahoma State University, University of Oklahoma, and Tulsa University. A total of \$115,000 has been distributed to students attending Geology Field Camp since inception of the Program.

OKLAHOMA TEACHER WORKSHOPS

Annually, since 2011, the Oklahoma Geological Foundation has sponsored and participated in a

"Approximately
380 Earth Science
teachers have
participated in
a total of nine
workshops over
the past eight
years."

full-day workshop for Earth Science teachers, called: "More! Rocks in Your Head." This hands-on seminar is taught by Richard Opalka, a geologist and Earth Science teacher at Edmond North High School. The

course covers a full scope of Earth Science topics and teaching method skills for the teachers to take back to the classroom, making Earth Science a fun and memorable experience for their students. Topics covered include environmental processes, rock formation, mineral identification, geologic landforms, mapping and fossil fuel formation.

One previous participating teacher stated on the course evaluation form, "I have taught for 25 years. This is the best (most informative) workshop I have ever attended. I can go back to my school and use everything." Another teacher wrote, "this has been one of the best workshops I have been to. The information will be used in my classroom."

Approximately 380 Earth Science teachers have participated in a total of nine workshops over the past eight years.

SAINT ELIZABETH ANN SETON CATHOLIC SCHOOL

Edmond, Oklahoma

Saint Elizabeth Ann Seton Catholic School opened a state-of-the-art science lab in the fall of 2006 to facilitate the teaching of pre-K through 8th grade Earth Science education. The Foundation has funded Grants since 2007 to help equip the laboratory and to establish a first-class Earth Science Program. This facility is used in the education of approximately 450 students annually. The entire 7th grade year is solely dedicated to the study of Earth Science. To date, the Foundation has funded Grants totaling over \$64,000 to the school.

GUTHRIE HIGH SCHOOL

The Oklahoma Geological Foundation has been providing Grants to Guthrie High School since 2014. Funds from these Grants have been used to purchase much needed supplies, laboratory equipment, textbooks, thirty Chrome Books, a charging cart for storage, and Earth Science demonstration models to expand the Earth Science classes. In 2018, the Foundation provided the necessary funding to purchase a 65" interactive flat panel Smartboard and a Chromecast Ultra. This technology will allow students to give presentations from their classroom research projects as will as to interact with various assigned lessons.

Since 2012, the Oklahoma Geological Foundation has provided funds totalling over \$46,000 to the Geoscience Center.



The Foundation has provided funding of over \$24,000 for Grant requests. These Grants have impacted over 250 students in the 8th grade, as well as 250 other students within the Guthrie High School system.

TULSA GEOSCIENCE CENTER

The Tulsa Geoscience Center is a project developed by the Energy American Educational Institute and has been in existence for ten years. The Oklahoma Geological Foundation has supported the Center since 2012. The Center is an active member of the Tulsa area Science, Technology, Education, and Math (STEM) alliance and is one of only eight teaching facilities accredited by the Oklahoma Energy Resources Board (OERB).

The Geoscience Center's Mission is to show students how fun and interesting the Geosciences are and to encourage these students to continue with STEM education and further pursue STEM careers. The Center provides field trips for schools and other educational organization, has museum-quality exhibits donated by local geologists, and unlike many other museums, everything at the Center is hands-on and exciting.

Each visiting class is divided into groups of twelve to eighteen students. An OERB Director or volunteer with geological training, guides each student group with their teachers to various stations. At each station, they learn about rocks, minerals, and fossils, as well as dinosaurs, earthquakes, tsunamis, natural fluorescence, and fossil fuels. Each student can make their own fossil cast and assemble a rock, mineral, and fossil kit to take home. The Center is one-of-a-kind in Oklahoma, with STEM and Earth Science education as its core mission.

Historically, over 5,500 students, educators, and teachers visit the Geoscience Center annually. This number includes at-risk students and members of the various Scout Groups. Primarily, the Center targets K – 6th grades, but all educational levels visit the Center, which continues to grow each year.

THE LARRY LUNARDI AND THE OKLAHOMA GEOLOGICAL FOUNDATION ROCK, MINERAL, AND FOSSIL COLLECTION PROGRAM

The Larry Lunardi and the Oklahoma Geological Foundation's Rock, Mineral, and Fossil Collection Program was established in June 2018.

In April of 2015, the Foundation began supporting K-12 Earth Science education by assembling and distributing permanent, on-site collections of museum quality rocks, minerals, and fossils for schools in Oklahoma. This support was granted based upon Larry Lunardi's experience as a guest speaker of Earth Science education in Oklahoma City area schools. The feedback he received from the students and teachers when he passed around the samples from his own collection was incredible.

Officially established in 2018, by Lunardi and the Foundation, the Rock, Mineral, and Fossil Collection Program is extremely popular and well received by the teachers and students. Mr. Lunardi and the Foundation decided to expand the distribution of the Collection and to ensure that permanent funding is available to ultimately have the Collection in every school in Oklahoma.

As of December 31, 2018, a total of 117 Collections were distributed to Oklahoma schools, all of which are currently being studied by hundreds of teachers and thousands of students every school year. Schools that apply for these Rock, Mineral, and Fossil Collections are asked how many students and teachers use the Collections, and based on their responses, an estimated 31,000 students and 650 teachers were impacted from the 117 Collections that have been donated to the respective schools.





THE DAVID G. CAMPBELL AND THE OKLAHOMA GEOLOGICAL FOUNDATION NATIVE AMERICAN SCHOLARSHIP PROGRAM

The David G. Campbell Native American Scholarship Program was established in 2018 by David G. Campbell and the Oklahoma Geological Foundation.

As a Founding Director of the original incorporated Oklahoma City Geological Foundation, Dave Campbell has been instrumental in his support for the Foundation for over 25 years. Because of his sincere dedication, Dave received the Oklahoma Geological Foundation's Living Legend Award in 2010.

Dave Campbell is an honorable and proud Native American who is a long-time supporter of the annual Red Earth Festival in Oklahoma City. Mr. Campbell served as President of the Elders Council of the Red Earth Indian Center, from which he received the Spirit Award in 1999. Most notably, he is a recipient of the Oklahoma Governor's Arts Award for his dedication to community services.

This Program will help establish educational scholarships for those Native American students who desire to further their studies in the Earth Science curricula.

"Earth and sky, woods and fields, lakes and rivers, the mountains and the sea, are excellent schoolmasters and teach some of us more than we can ever learn from books."

John Lubbock - 1834 - 1913

Each year, the Oklahoma Geological Foundation conducts the "Annual Awards Banquet" to honor and give recognition to deserving students, teachers, and educational institutions by providing Grants, Scholarships, and Awards. From throughout Oklahoma, students, teachers, and their families are invited to attend the banquet. This reception continues to grow each year as students and teachers are presented their respective Grants and Awards. During this time, the recipients and their families are able to meet casually with the Foundation's Directors and Donors along with other peers from various educational facilities.

In 2017, The Foundation provided \$135,538 in funding for Grants, Awards, and Scholarships.

THE OKLAHOMA GEOLOGICAL FOUNDATION ANNUAL AWARDS BANQUET

Frederic H. and Lois M. Kate Endowment Fellowship	\$ 6,000
Oklahoma Geological Foundation Graduate Fellowship	\$ 6,000
Suzanne Takken Memorial Fellowship	\$ 6,000
Herbert G. and Shirley A. Davis OSU Geology Fellowships (2 @ \$2,500 each)	\$ 5,000
Frederick M. Black Field Camp Grants (3 @ \$2,000 each)	\$ 6,000
OSU Summer Field Camp Grants (14 @ \$750 each)	\$ 10,500
OU Summer Field Camp Grants (25 @ \$750 each)	\$ 18,750
Beth Cronin Elementary School Endowment (St. Elizabeth A.S. Catholic School)	\$ 6,785
OGF Support Grant: Rock, Mineral, & Fossil Collections	\$ 17,000
OGF Support Grant: Tulsa Geoscience Center	\$ 6,000
OGF Support Grant: More! Rocks In Your Head (Teacher Workshop)	\$ 4,538
OGF Support Grant: Guthrie High School	\$ 4,760
OGF Support Grant: Lakeview Elementary School, Yukon	\$ 188
OGF Support Grant: OSU AAPG Imperial Barrel Competition Team	\$ 1,500
OGF Support Grant: OU AAPG Imperial Barrel Competition Team	\$ 1,500
Oklahoma State University School of Geology	\$ 2,200

THANK YOU

FOR SUPPORTING THE FOUNDATION'S MANY EDUCATIONAL INITIATIVES!

OKLAHOMA GEOLOGICAL FOUNDATION

GRANTS, SCHOLARSHIPS, & AWARDS FOR 2018

HERBERT G. & SHIRLEY A. DAVIS OKLAHOMA STATE UNIVERSITY GEOLOGY SCHOLARSHIP: (\$5,000)

RECIPIENT: MARIA REISTROFFER (\$2,500)

Oklahoma State University

Thesis: "Reservoir Characterization of the Bakken Formation in the Williston Basin of North Dakota and Montana".

RECIPIENT: CONN WETHINGTON (\$2,500)

Oklahoma State University

Thesis: "Mudrock Evaluation of the Basal Washita-Fredericksburg as a Seal of the Creataceous Paluxy Formation Reservoir for Anthropogenic CO2 Sequestration on an Industrial Scale: Kemper County Energy Facility".

THE FREDERICK H. & LOIS M. KATE AWARD: (\$6,000)

RECIPIENT: SHERIDAN MULLEN

University of Oklahoma

Thesis: "Deltaic Sedimentation and Stratigraphy of the Cenomanian Frontier Formation in the Southeast Big Horn Basin, Wyoming."

BETH CRONIN ELEMENTARY SCHOOL PROGRAM: (\$6,785)

RECIPIENT: ST. ELIZABETH ANN SETON CATHOLIC SCHOOL, EDMOND

Grant: Grant awarded for purchase of twenty five Dell Chromebooks and Google Educational Management Console.

THE OKLAHOMA GEOLOGICAL FOUNDATION EXCELLENCE IN EARTH SCIENCE EDUCATION AWARDS PROGRAM: (\$3,000)

RECIPIENTS: ELEMENTARY, MIDDLE & HIGH SCHOOL EARTH SCIENCE TEACHERS FROM SCHOOLS THROUGHOUT OKLAHOMA.

The workshop "More! Rocks in Your Head" was held in Oklahoma City, on the campus of Chesapeake Energy. Over 40 teachers participated in the seminar.

Grant: Proceeds of Grant used to sponsor a full-day Earth Science workshop, titled: "More! Rocks in Your Head." This is a nationally acclaimed, hands-on workshop, covering a full scope of Earth Science topics and skills for the teachers, who can take these disciplines back to the classroom, making Earth Science a fun and memorable experience for their students.

THE OKLAHOMA GEOLOGICAL FOUNDATION ELEMENTARY SCHOOL GRANT: (\$2,000)

RECIPIENT: OKLAHOMA SCHOOLS, K - 12TH GRADES

Grant: Grant used to purchase Rock, Mineral, & Fossil Collections, to be distributed to schools in Oklahoma to promote geology and Earth Science education.

THE SUZANNE TAKKEN MEMORIAL AWARD: (\$6,000)

RECIPIENT: XIAOBO LIU

University of Tulsa

Thesis: "Seismic Wave Progradation and Q-compensated Imaging in Viscoelastic Media with Irregular Free Surface."

THE OKLAHOMA GEOLOGICAL FOUNDATION SUMMER FIELD CAMP GRANT: (\$29,250)

RECIPIENTS: STUDENTS FROM OKLAHOMA STATE UNIVERSITY, UNIVERSITY OF OKLAHOMA, AND THE UNIVERSITY OF TULSA, with a total of 39 students receiving \$750 each.

Grant: Funds awarded to undergraduate geology students to supplement 2018 Summer Field Camp expenses.

THE SHIRLEY A. DAVIS PROGRAM FOR EARTH SCIENCE EDUCATION: (\$188)

RECIPIENT: LAKEVIEW ELEMENTARY SCHOOL, YUKON

Grant: Grant used to purchase 13 sedimentator tubes to be used in the geology unit for 4th grade students.

THE JOHN GATCHELL EARTH SCIENCE TEACHING PROGRAM: (\$2,000)

RECIPIENT: OKLAHOMA SCHOOLS, K - 12TH GRADES

Grant: Grant used to purchase Rock, Mineral, & Fossil Collections, to be distributed to schools in Oklahoma to promote geology and Earth Science education.

GRANTS, SCHOLARSHIPS, & AWARDS FOR 2018

THE OKLAHOMA GEOLOGICAL FOUNDATION MIDDLE SCHOOL GRANT: (\$2,200)

RECIPIENT: OKLAHOMA STATE UNIVERSITY SCHOOL OF GEOLOGY

Grant: Proceeds of Grant will be used to fund a teacher workshop for middle and secondary science teachers. The workshop includes lesson plans and a field trip to the Arbuckle Mountains and Criner Uplift.

THE PHILIP BOYLE FOUNDATION & OKLAHOMA GEOLOGICAL FOUNDATION ELEMENTARY AND SECONDARY SCHOOL PROGRAM: (\$4,500)

RECIPIENT: OKLAHOMA SCHOOLS, K - 12TH GRADES

Grant: Grant used to purchase Rock, Mineral, & Fossil Collections, to be distributed to schools in Oklahoma to promote geology and Earth Science education.

THE CHARLES E. BRANHAM LIBRARY PROGRAM: (\$4,500)

RECIPIENT: OKLAHOMA SCHOOLS, K - 12TH GRADES

Grant: Grant used to purchase Rock, Mineral, & Fossil Collections, to be distributed to schools in Oklahoma to promote geology and Earth Science education.

THE LARRY LUNARDI & OKLAHOMA GEOLOGICAL FOUNDATION ROCK MINERAL & FOSSIL COLLECTION PROGRAM: (\$4,000)

RECIPIENT: OKLAHOMA SCHOOLS, K - 12TH GRADES

Grant: Grant used to purchase Rock, Mineral, & Fossil Collections, to be distributed to schools in Oklahoma to promote geology and Earth Science education.

THE LANCE RUFFEL & OKLAHOMA GEOLOGICAL FOUNDATION INNOVATIONS IN EARTH SCIENCE EDUCATION PROGRAM: (\$6,000)

RECIPIENT: TULSA GEOSCIENCE CENTER

Grant: Grant awarded to support various operating costs for the Tulsa Geoscience Center. The Geoscience Center educates students and the general public on energy, geology, and other earth science disciplines. Students K – 12th grades are exposed to rock and mineral identification, fossils, fluorescence, porosity, permeability, the oil and gas industry, earthquakes, geologic time, crude oil and natural gas. Students from Oklahoma take day long field trips to visit the Center.

THE OKLAHOMA GEOLOGICAL FOUNDATION GRADUATE FELLOWSHIP AWARD: (\$6,000)

RECIPIENT: ALEJANDRA TORRES

Oklahoma State University

Thesis: "Significance of Early Marine Cementation on Reservoir Development and Evolution in Silurian Forereef Slope Deposits at Pipe Creek Jr. Quarry, Indiana – Applications for the Michigan Basin".

THE ROBERT W. & JO ANN WARING MEMORIAL SCHOLARSHIP: (\$3,000)

RECIPIENTS: BOONE PICKENS SCHOOL OF GEOLOGY (\$1,500), OKLAHOMA STATE UNIVERSITY & CONOCO PHILLIPS SCHOOL OF GEOLOGY AND GEOPHYSICS (\$1,500), UNIVERSITY OF OKLAHOMA

Grants: Funds used to support teams from Oklahoma State University and University of Oklahoma in the AAPG Imperial Barrel Competition.

WILLIAM A. CLEMENT GUTHRIE MIDDLE AND HIGH SCHOOL GRANT: (\$4,760)

RECIPIENT: GUTHRIE HIGH SCHOOL

Grant: Grant awarded to support the purchase of 65" interactive flat panel Smartboard and a Chromecast Ultra. The technology will allow students to give presentations from research as well as interact with lessons.

THE FREDERICK M. BLACK SUMMER FIELD CAMP GRANT: (\$6,000)

RECIPIENTS: KAYLA KING (\$2,000)

Oklahoma State University

DALILA DE JESUS (\$2,000) University of Oklahoma

MEGAN HINKLE (\$2,000)

University of Tulsa

Grant: Funds awarded to undergraduate geology students to supplement 2018 Summer Field Camp expenses.

THE OKLAHOMA GEOLOGICAL FOUNDATION HIGH SCHOOL GRANT: (\$1,538)

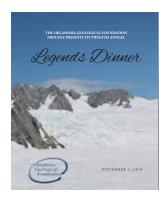
RECIPIENTS: ELEMENTARY, MIDDLE & HIGH SCHOOL EARTH SCIENCE TEACHERS FROM SCHOOLS THROUGHOUT OKLAHOMA.

The workshop "More! Rocks in Your Head" was held in Oklahoma City, on the campus of Chesapeake Energy. Over 40 teachers participated in the seminar.

Grant: Proceeds of Grant used to sponsor a full-day Earth Science workshop, titled: "More! Rocks in Your Head." This is a nationally acclaimed, hands-on workshop, covering a full scope of Earth Science topics and skills for the teachers, who can take these disciplines back to the classroom, making Earth Science a fun and memorable experience for their students.

THE OKLAHOMA GEOLOGICAL FOUNDATION LEGENDS AWARD

The Directors of the Oklahoma Geological Foundation recognize that many outstanding individuals in Oklahoma have historically distinguished themselves by having made substantial contributions to the Geosciences, created significant advancements in



the petroleum industry, and have improved their communities for the betterment of society.

To proudly honor these incredible individuals, the Foundation created the "Pioneer Legend",

"Historical Legend", and the "Living Legend" awards. Established in 2007, the Oklahoma Geological Foundation has bestowed these honors to thirty-eight individuals at the annual "Legends Award" reception.

In 2018, Keith F. Walker and Thomas W. Olsen were honored as "Historical Legends", Frank F. Phillips as "Pioneer Legend", and Richard D. Fritz as "Living Legend".

THE OKLAHOMA GEOLOGICAL FOUNDATION CHRISTMAS RECEPTION

Since 2004, the Oklahoma Geological Foundation and its Directors, have invited donors and friends of the Foundation to the Annual Christmas Reception. This reception was established to express thanks and appreciation to those individuals who are responsible for the success and growth of the Foundation over the past 25 years, by providing funding, their time, and support.

Historically, this reception has been held at the Oklahoma City Petroleum Club North. It is always a great social event for the Directors and for those who have generously supported the Foundation for many years.



"No person was ever honored for what they received."

Honor has been the reward for what they gave."

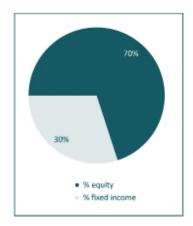
INVESTMENT SUMMARY

PERIOD ENDING DECEMBER 2018

Current Allocation

Allocation	% of FMV
Equity	65.1%
Large Cap	33.3%
Mid Cap	6.5%
Small Cap	8.8%
International	16.6%
Other Equity	0.0%
Fixed Income	31.8%
Short	4.8%
Intermediate	27.0%
Unconstrained	0.0%
International	0.0%
Cash	3.1%
Total	100.0%

Target Allocation



Historical Returns

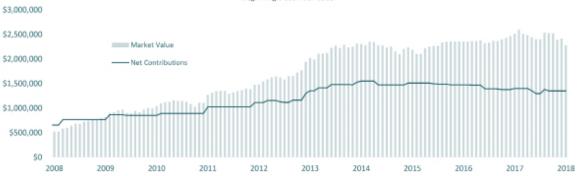
	Trailing 3 Months	Trailing 12 Months	3 Year (annualized)	5 Year (annualized)	7 Year (annualized)
OGF	-9.8%	-7.3%	3.7%	2.3%	5.7%
Market Returns					
S&P 500	-13.5%	-4.4%	9.3%	8.5%	12.7%
Russell 2000	-20.2%	-11.0%	7.4%	4.4%	10.4%
MSCI EAFE	-12.5%	-13.8%	2.9%	0.5%	5.8%
MSCI EM	-7.5%	-14.6%	9.2%	1.6%	3.2%
BBG BC Int Gov/Crdt	1.7%	0.9%	1.7%	1.9%	1.8%
BBG BC 1-3YR Gov/Crdt	1.2%	1.6%	1.2%	1.0%	1.0%

Annual Returns

Period	Return
2018	-7.3%
2017	10.2%
2016	9.2%
2015	-3.4%
2014	4.3%

Growth Over Time

Beginning December 2008



^{*}Returns are net of fees. Returns greater than 1 year are annualized. Performance will largely be driven by asset allocation, which varies from the target weights, and fund manager performance. OGF & BancFirst used data from external sources in the preparation of this report. OGF & BancFirst warrants that, to the best of its knowledge, information and belief, the information contained herein is reliable, but does not warrant the accuracy. Past performance does not guarantee future results.

OKLAHOMA GEOLOGICAL FOUNDATION 2018 INVESTMENT OVERVIEW

As of December 31, 2018, the Oklahoma Geological Foundation's collective Investment Portfolio had a fair market value of \$2,273,634. This is a decrease of \$233,829 over the previous year balance of \$2,507,463.

This decrease was attributable to investment losses of \$181,957 (net of investment management fees) and net contributions/withdrawals of -\$51,872. The Portfolio had an asset allocation at year end of 65.1% Equity, 31.8% Fixed Income and 3.1% Cash & Equivalents. Under normal circumstances and Foundation investment policy guidelines, the overall equity allocation will typically range from 60-80% and the fixed income and cash allocation will typically make up the residual, a 20-40% allocation.

The mix of equity strategies in the Portfolio is diversified across domicile (e.g., U.S., developed international and emerging markets), style (growth and value) and size (market capitalization). At year-end, the style composition of the equity portfolio was as follows (rounded):

The primary strategies within the fixed income allocation at year-end were classified as intermediate-term, investment grade but also included a smaller allocation to a short-term, investment grade strategy. The fixed income portfolio style breakdown at year-end was as follows (rounded):

Intermediate-term Bond	84.9%
Short-term Bond	15.1%

For the year ended December 31, 2018, the portfolio returned -7.3%, net of investment management fees, compared to a blended benchmark return of -2.5%. The blended benchmark is comprised of the S&P 500 Stock Index, Bloomberg Barclays Intermediate Government/Credit Index and the Lipper US Treasury Money Market Index, weighted in accordance to the broad class weights of the Portfolio. The table below provides additional performance for the Foundation's Portfolio over various timeframes since inception of July 1, 2008. Since inception, the Portfolio returned 5.8% annualized with net gains, after fees and expenses, of \$927,328:

U.S. Large-Cap Growth	10.2%	U.S. Small-Cap Value	13.5%
U.S. Large-Cap Value	9.5%	Developed International	14.9%
U.S. Large-Cap Core	31.4%	Emerging Markets	10.6%
U.S. Mid-Cap Value	9.9%		

Performance- Net of Fees

12 Month	3 Year Annualized	5 Year Annualized	Inception 7/1/2008
The Foundation's -7.3% Investments	3.7%	2.3%	5.8%

Concerns relating to overly restrictive monetary policy in the U.S., weaker global growth and ongoing trade tensions weighed on stock returns in 2018. For the year, global equities delivered negative returns. The S&P500 Index (large-cap U.S. Stocks) dropped 4.4% while the Russell 2000 Index (small-cap U.S. Stocks) lost 11.0%. International stocks fared worse, with developed markets (MSCI EAFE Index) losing 13.3% and emerging markets (MSCI Emerging Markets Index) down 14.3%. Additionally, the global performance gap between growth and value stock classifications (growth outperforming) persisted during the year across the capitalization spectrum. Overall, the Foundation's equity investments returned -9.9% during the year. This was modestly behind the S&P 500 Index due to the portfolio's overall value manager tilt and its diversified style allocation that included both international and smaller cap stocks.

While interest rates shifted higher during 2018, the increase was more pronounced on the shorter-end due to tighter Fed policy, resulting in a flatter yield curve. The fixed income markets closed the year with a strong rally as the global equity selloff intensified in December. The Foundation's fixed income return for the year was 0.1%, just below Bloomberg Barclays Intermediate Government/Credit Index return of 0.9%, as the portfolio's shorter duration and higher credit allocation at year's end weighed. The general focus in the fixed income segment has been to maintain duration in a shortened range with allocations to both short- and intermediate-term bond strategies.

The Investment Policy is designed to ensure that existing and future funds managed by the Foundation will provide ample annual income for its charitable purposes in perpetuity, regardless of existing economic or market conditions.

2018 DONATIONS DIRECTED

OKLAHOMA GEOLOGICAL FOUNDATION EXCELLENCE IN EARTH SCIENCE EDUCATION

Jason F. & Julie D. Hamilton

ROBERT W. & JO ANN WARING MEMORIAL SCHOLARSHIP PROGRAM

Equitable Royalty Corporation

BETH CRONIN ELEMENTARY SCHOOL PROGRAM

Robert L. & Jayne A. Gilson Larry G. & Leellen Akers

LARRY LUNARDI & OKLAHOMA
GEOLOGICAL FOUNDATION ROCK
MINERAL FOSSIL COLLECTION PROGRAM

Larry Lunardi Leonard C. Dionisio, Jr. J. Mark & Carol Lester OKLAHOMA GEOLOGICAL FOUNDATION EVERYDAY EARTH STEM PROGRAM

Devon Energy

Jerome Westheimer Family Foundation

Michael J. & Bethany I. Bone

Chesapeake Energy Corp.

Terry L. & Elizabeth Hollrah

Thomas C. Cronin

OU/ConocoPhillips

Frank & Cindy Gagliardi

Larry Lunardi

J. Mark & Carol Lester

Echo Energy Group

KENNETH STEWART CRONIN LECTURE SERIES PROGRAM

Thomas C. Cronin

In Memory of Dale Shipley
In Memory of Johnathan B. Morey IV

LANCE RUFFEL & OKLAHOMA GEOLOGICAL FOUNDATION INNOVATIONS IN EARTH SCIENCE EDUCATION PROGRAM

Marvin D. Woody

2018 DONATIONS NON-DIRECTED

Patrick M. Tolson

Herb & Marynm Martin

Bryan J. & Leslie Smith

Herbert G. & Shirley A. Davis

Peter J. Massion

Robert L. & Jayne A. Gilson

James Gibbs

In Honor of Rick Fritz

Kenneth S. & Dorothea Johnson

Harold W. Hanke

MAP Royalty, Inc.

James S. McGhay

John W. Shelton

Jerry Glen McCaskill

Tapstone Energy

Gregg A. McDonald

Greg & Melinda Flournoy

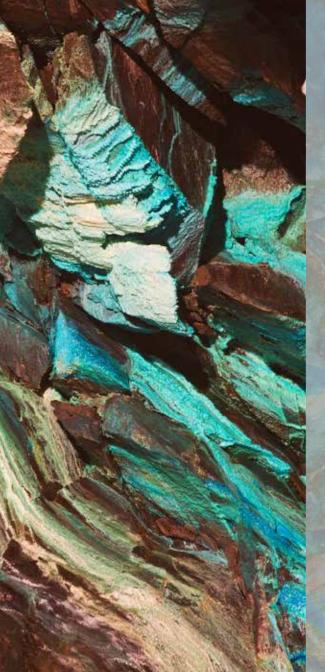
George Davis

Stephen W. Kage

Scott D. & Diane M. Sachs

Peter Gill

Mark S. Svoboda



2018 EVENT SPONSORS

Lawrence H. & Ronna Davis Thomas C. Cronin **Steve Knowles** William Cory Beck **Allied Wireline Services, LLC** Peter Gill Frank & Cindy Gagliardi Herbert G. & Shirley A. Davis Murfin Drilling Company, Inc. **David Doyle Tapstone Energy** Whitestar Petroleum Joseph J. & Joan M. Bruns Ray H. Potts **Arvine Pipe & Supply Co., Inc.** Richard L. & Jackie L. Snyder, Jr. **Continental Resources** J. Mark & Carol Lester The Quintin Little Company Black Swan Oil & Gas Brian J. & Lesley Smith **BancFirst Trust and Investment Management** The Reserve Petroleum Company **Larry Lunardi** Sam Roark Lance Ruffel Oil & Gas Keith F. Walker Trust Landon W. & Linda K. Holman Michael D. Kuykendall **Ancova Energy**



LEGENDS

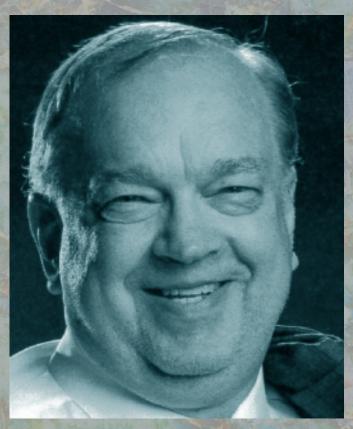


KEITH F. WALKER Historical Legend

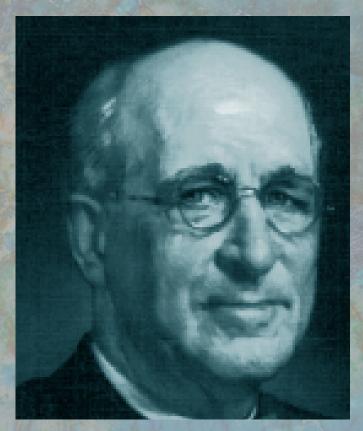


THOMAS W. OLSEN Historical Legend

LEGENDS



RICHARD D. FRITZ Living Legend



FRANK F. PHILLIPS
Pioneer Legend

OGF BOARD OF DIRECTORS



Left to Right: Terry L. Hollrah, J. Mark Lester, Devin Dennie, Jason F. Hamilton, Joel A. Alberts, Thomas C. Cronin, Lawrence H. Davis, Larry Lunardi, Lanny Holman, Frank Gagliardi, Michael J. Bone. Herbert Martin and Lance Ruffel (not pictured)

OKLAHOMA GEOLOGICAL FOUNDATION

P.O. BOX 7565 | EDMOND, OK 73083

OKLAHOMAGEOLOGICALFOUNDATION.ORG