

SCHOLAR

A Publication Highlighting AEG Scholars and Scholarships

June 2015



About the AEG Foundation

The [AEG Foundation](#) is dedicated to advancing research, student and professional education, and public awareness in the field of engineering geology and the related fields of environmental geology and hydrogeology through support of publications, speakers, programs, research grants, scholarships, advanced practice specialty conferences, and maintenance of archival data. The programs of the Foundation are supported by public and corporate donations and by bequests. The AEG Foundation manages sixteen funds, including eight scholarships. For more information about the AEG Foundation and its programs, click [here](#).

About This Publication

This newsletter features short articles that focus on the funds currently available for students in undergraduate, graduate, and field camp positions, and brings our readership up to date on how the recipients have used the funds and what they are doing now. Without exception, every one of the scholars contacted by AEG Scholar staff have been gracious, and deeply appreciated the financial help and mentoring advice provided by AEG and the AEG Foundation.

We hope you enjoy their progress reports as much as we have!

Featured Scholar for June 2015

Our featured Scholar for June 2015 is Lauren Schaefer, currently (as of June) in the second year of her PhD in Geological Engineering at Michigan Tech University. Lauren, pictured above and in the other photos of her field work on page 2, was the recipient of the **2013 Norman R. Tilford Field Studies Scholarship**, PhD Division. She received \$2,000, and was one of 14 applicants for this prestigious scholarship. More information on the Tilford Field Studies Scholarship, including links, is on page 3 of this issue.

This fund was established in 1998 in memory of Norman Tilford, a Past President and Executive Director of AEG, and professor at Texas A&M. This fund is distributed as grants awarded to graduate and undergraduate students in support of field studies.

A complete description of all the AEG Foundation Scholarships may be found at www.aegfoundation.org.

What has she been doing in geology since 2013? In Lauren's own words:

"I used the Tilford (Field Studies) Scholarship to fund a field campaign to Pacaya Volcano (Guatemala) in October of 2013. There, I collected rock samples and did in-situ permeability tests on lava flows. Later, I traveled to the University

(Continued on page 2)

(Continued from page 1)

of Liverpool where we did several laboratory tests on the rocks we collected, including: room temperature uniaxial compressive strength tests at different strain rates, cyclic loading tests, and high temperature (935 °C) UCS tests on as-collected and thermally treated cores.



Above. Lauren using a high temperature, high pressure uniaxial press to test volcanic rock at the University of Liverpool, UK.

These tests gave us unique volcanic properties that are often overlooked when developing models and theories of volcanic processes. Ultimately, this increased parameterization of volcanic rock properties can improve mitigation power.

A paper on this study is currently under review (Schaefer LN, Kendrick JE, Oommen T, Lavallée Y, Chigna G (2015) Geomechanical rock properties of a basaltic volcano. *Frontiers in Volcanology*. In Review.)

In addition to rock mechanics, I am also using interferometric synthetic aperture radar (InSAR) to study deformation at Pacaya. Recently, I measured 3 m of slope movement that occurred during an eruption in 2010.

This is the largest measured slope instability witnessed in a single event at a volcano that did not result in a catastrophic landslide such as what occurred at Mount St. Helens. A paper on this study is also under review (Schaefer LN, Lu Z, Oommen T (2015) Dramatic volcanic instability revealed by InSAR. *Geology*. In Review.).

Publishing information

AEG Foundation Scholar is published digitally from time to time, with the goal of becoming a monthly publication to be distributed in conjunction with AEG News to the AEG membership, colleges and universities, supporters of the geosciences, and businesses employing geoscience-related professionals.

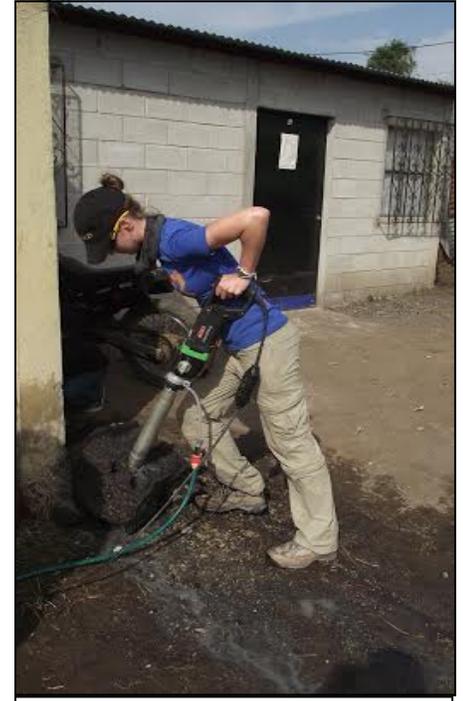
Editor:Jane Gill-Shaler, PG.
 janehgillshaler@gmail.com

Lauren Schaefer was One of over 20 recipients of AEG Foundation funded scholarships and grants in 2013. The AEG Foundation Scholar will be featuring other recipients of other scholarships, and what they are doing currently, in future issues.

BREAKING NEWS!

It was recently announced by the AEG Foundation Board that Lauren Schaefer was awarded the 2015 AEG Foundation Marliave Scholarship! Congratulations to Lauren for her fine work and we all wish her continued success in her chosen field!

Click here for more information on the [MARLIAVE FUND](#). Other recipients will be announced in the AEG News and on our website. Our deepest appreciation goes to donors to the AEG Foundation, and to other supporters of these fine scholars!



Above. Lauren drilling cores out of rock collected from Pacaya Volcano in Guatemala



Above. Lauren Schaefer, 2013 Tilford Field Studies Scholar, In front of a large landslide that occurred in 2010 on the cone of Pacaya Volcano, Guatemala.

Featured Scholarship for June 2015

Tilford Field Studies Scholarship Fund

Grants from the Tilford Fund are intended to support field studies by deserving undergraduate or graduate geology students who are Student Members of the Association of Environmental & Engineering Geologists. The Tilford Fund does not support general and administrative (overhead) costs, technical or scientific consulting fees, or equipment purchase or maintenance costs of an educational institution employing or teaching individuals who receive grants from it.

Who was Norman R. Tilford?

Norman Ross Tilford, professor of geology at Texas A&M University and executive director of the Association of Engineering Geologists (AEG), died in an airplane accident on Nov. 13, 1997, while flying his Cessna 180 from College Station, Texas. Tilford, who was 62 years old, joined Texas A&M in 1985 with 30 years of international geology experience.

Professor Tilford was en route Nov. 13 to Van Horn, Texas, where he was meeting his students for a field trip. They reported him missing on Nov. 14. Intense searching by the Civil Air Patrol proved unsuccessful, but two hunters found the plane's wreckage on Dec. 13 in a densely wooded area about nine miles west of Johnson City, Texas. Tilford apparently died on impact.

"We have lost a good friend and colleague," said Christopher Mathewson, who is also a professor of geology at Texas A&M. "The engineering geology profession has lost a dedicated servant, Texas A&M University has lost a great teacher, and the Association of Engineering Geologists has lost an outstanding leader."

Tilford was born in Moscow, Kan., On Dec. 14, 1934. He started his engineering geology career working on foundation geology with the U.S. Army Corps of Engineers in Los Angeles. Subsequently, he worked in West Pakistan for the Harza Engineering Company. After he earned his master's degree in geology from Arizona State University in 1966, he worked for the Philadelphia Port Corp. and then joined Ebasco Services Inc. in 1969. Tilford was the company's head geologist when it constructed the Keban Dam in Turkey, one of the largest dams in the world at that time. Beginning in 1975, he served as Ebasco's chief geologist and traveled throughout the United States and the world as a consulting geologist.

As a Texas A&M professor, Tilford was known for his incorporation of real life situations into his classroom teaching and

on field trips, Mathewson said. Tilford focused on active tectonics, water resources development, evaluation of geological hazards, and site selection studies.

Dr. Tilford was a member of several associations and was particularly active in the Earthquake Engineering Research Institute, the U.S. Committee on Large Dams, and AEG, serving as AEG's executive director in 1997. AEG gave him its Floyd T. Johnston Service Award in 1992.

Past Awardees of the Tilford Scholarship

- 2014 – Julia Corbett Howe, Undergraduate; Sebastian Diring, Masters; Elizabeth Joy Olson, PhD
- 2013 – Shelby Jones, Undergraduate; Michael McLain, Graduate-Masters; **Lauren Schaefer, Graduate-PhD (featured in this issue)**
- 2012 – Na Hyung (Stacey) Choi, Undergraduate 1st Place; Jerome Varriale, Undergraduate 2nd Place; Matthew Burnette, Graduate
- 2011 – Jeremiah Bihl, Undergraduate; Rebecca Springer, Undergraduate; Evan Keffeler, Masters; Christopher Madden, PhD
- 2010 – Carrie Frisky, Undergraduate; Nathaniel Swanson, Graduate-Masters
- 2009 – Anna Perry, Undergraduate; Anna Brody, Graduate-Masters; Stephanie Watts, Graduate-PhD
- 2008 – Tyler Benton, Undergraduate; Theresa Poruznick, Graduate-Masters
- 2007 – Shaina M. Forsyth, Undergraduate; Scott Braunstein, Graduate-Masters; Christopher Hein, Graduate-PhD
- 2006 – Jennifer Wright, Undergraduate; Nichole Wendlandt, Graduate-Masters
- 2005 – Stephanie Mrozek, Undergraduate; Conor Watkins, Graduate
- 2004 – Shelley Zaragoza, Undergraduate; Kathy Goetz Troost, Graduate
- 2003 – Heidi Sieverding, Graduate
- 2002 – Paul J. Moore, Undergraduate; Paula Jo Lemonds, Graduate
- 2001 – Bonnie E. Phillips, Undergraduate; Cal A. Ruleman, Graduate; Joseph Kula, Graduate-PhD

To learn more about, apply to, or donate to the AEG Foundation Funds, go to: www.aegfoundation.org

Funds for Students

These Funds assist students to attend field camps, professional meetings, and support student research, scholarship, and professional development.

- **BEARDSLEY-KUPER FUND**: This scholarship was established in 2009 by Cathryne Beardsley with her daughter Dorian Kuper and son-in-law Tom Kuper. The fund provides financial support for field camp tuition and expenses. [Charter](#)
- **LEMKE FUND**: This scholarship was established in 2007 in memory of June and Richard Lemke and provides supporting funds to AEG Student Members presenting at professional meetings at which AEG plays a substantial role. [Charter](#)
- **MARLIAVE FUND**: The Marliave Fund was established by AEG in 1968 and is in memory of Burton, Chester, and Elmer Marliave. This fund supports graduate and undergraduate Scholarships in Engineering Geology and Geological Engineering. [Charter](#)
- **MATHEWSON FUND**: This scholarship was established in by the AEG Texas Section in 2007 and provides supporting funds to AEG Student Members studying in Texas. [Charter](#)
- **TILFORD FUND**: Established in 1998 in memory of Norman Tilford, a Past President and Executive Director of AEG, and professor at Texas A&M. This fund is distributed as grants awarded to graduate and undergraduate students in support of field studies. [Charter](#)
- **STOUT FUND**: Established in 1994 by the Southern California Section in honor of Professor Martin Stout. This fund supports graduate and undergraduate students in environmental and engineering Geology. [Charter](#)
- **WEST-GRAY SCHOLARSHIP FUND**: Established in 2014 with initial funding provided by a gift from Terry R. West and Richard E. Gray, Past Presidents of the Association of Environmental & Engineering Geologists. This fund supports undergraduate and graduate geology students in the eastern half of the United State through scholarship grants. [Charter](#)
- **CAROLINAS SCHOLARSHIP FUND**: This scholarship fund was established in 2015 by the AEG Foundation to support direct costs associated with the Carolinas Scholarships. [Charter](#)

Funds for Practitioners

These Funds support workshops, conferences, speaker programs, research, and publications for professionals in environmental and engineering geoscience fields.

- **SHLEMON CONTINUING EDUCATION FUND**: The Continuing Education Fund supports local workshops through AEG Sections. [Charter](#)
- **JAHNS FUND**: Supports speaker programs, including the Jahns Lecturer selected by the AEG and Engineering Geology Division of the Geological Society of America. [Charter](#)
- **LEGGET FUND**: Supports traditional and web-based publications in environmental and engineering geology to benefit the professional practitioner, faculty, students, and the public. Program expansion plans include public information outreach and a web-based library of classic books and papers, bibliographies, and professional practice resources. [Charter](#)
- **RESEARCH FUND**: Supports small research projects that advance the science and application of environmental and engineering geology. [Charter](#)
- **SHLEMON SPECIALTY CONFERENCE FUND**: Initiated by Roy Shlemon in 1997, this fund supports specialty conferences in engineering geology and related fields. [Charter](#)
- **CORNERSTONE FUND**: This fund supports university-level teaching of engineering geology and geological engineering in the United States. [Charter](#)

Foundation Support Programs

These Funds support the general operation of the Foundation, and provide support to underfunded programs and funds.

- **GREATEST NEED FUND**: The AEG Foundation Board will allocate your donations to the program areas of greatest current need. [Charter](#)
- **JOHNSTON OPERATIONS FUND**: Directly supports the Foundation's business operations. Contributions to this fund reduce the support burden on program funds. [Charter](#)