Permafrost underlies a quarter of the northern hemisphere and roughly 17 percent of all lands on earth. These frozen soils contain twice as much carbon as is currently in earth’s atmosphere. Permafrost terrains are increasingly vulnerable to thaw degradation and potential carbon loss due to a variety of disturbances as well as climate warming. Multidisciplinary research throughout the Arctic has focused on the main causes of permafrost stability and instability and some consistent themes have emerged. For example, the main drivers of permafrost degradation are fire, vegetation characteristics, and changing meteorological conditions. However, these occur across varied spatial and temporal scales. Projections of a warming future climate and the resulting degradation of permafrost could lead to major landscape and carbon cycle changes over the next 20 to 50 years. This presentation will introduce the challenges in our assessment of the permafrost carbon cycle and will provide examples of field based and remotely sensed measurements that are used to identify hotspots of permafrost change.

**About the Speaker:**

Dr. Thomas A. Douglas of Fairbanks, Alaska is a Senior Scientist for the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL). He has worked at CRREL since 2001 after receiving his Ph.D. in Earth Sciences from Dartmouth College. His research is focused on the environmental characterization of permafrost, snow, and ice to support infrastructure development and understand the response of Arctic and sub-arctic terrains to climate warming. He has participated in multiple 500-1,000 mile wintertime traverses across the Alaskan Arctic and has worked at remote field sites in Alaska, Canada, and Greenland. Dr. Douglas is an author or co-author of more than 100 scientific papers and book chapters.

---

**AGS Meeting**

Date & Time: Thursday, May 21; doors open at 11:30 am, talk from 12:00 – 1:00 pm

Program: The current and projected future state of permafrost in the north with a focus on the carbon cycle

Speaker: Thomas A. Douglas; U.S. Army Cold Regions Research and Engineering Laboratory Alaska

Place: Virtual online presentation

Reservations: Reservations are not required

Login: To log in to the presentation see the instructions at: [http://www.alaskageology.org/events.html](http://www.alaskageology.org/events.html)
From the President’s Desk:

The 2019-2020 AGS year is coming to an end, with that my term as President of AGS. I want to thank you for letting me be part of this wonderful, historical, and passionate association. It has been a thrill.

A summary of this year’s activities included.

- Monthly Luncheons: A wonderful set Many of our wide-ranging topics in our Anchorage monthly presentations.
- Technical Presentations
- We continued with our mini technical conference’s sessions with the last one the Baker Hughes – VAS- Smith held at the Geological Material Center. This presentation was informational, packed, and well-received.
- Starting with last year’s technical conference at the GMC and the planned conference on campus at UAF we continue our fellowship with the University of Alaska geoscience program.
- Scholarships – 2020 Recipients announced. This is a major passion of the association and we want to thank Sue Karl and her team for this yearly work.

Elections:

Elections are ongoing for next year’s board. You should have received a notice on how to vote. If you have not voted yet you can access the ballot from our website. The vote closes May 20th, 2020.

Newsletters:

Ken Hemold has been leading this charge for years. We continue to ask that you submit to this monthly event. A photo, geology story, or complete paper. Please share your stories.

Spring Technical Conference

While the Fairbanks Spring Technical Conference was impacted by the Conviz-19 virus we want to acknowledge the generous offers of support from many corporate and private donors. The AGS wants to send a large thanks for this support. We are waiting on an all-clear for the rescheduled event.

- Ed and Karen Duncan
- Chip Landmesser
- Barbara Bohn and Robert Peterson
- Fort Knox Gold Mine
- Zeiss Research Microscopy Solutions
- Oil Search
- Chip Landmesser
- Pinion Hill Resources - Ric Kopp
- Hilcorp
- Duncan Petroleum Advisors LLC - Ed & Karen Duncan
- Usibelli Coal Mine Lisa Herbert
- ConocoPhillips
- University of Alaska Geosciences (UAF, UAA)

In summary, we are busy, we are adapting to this new world, and we are looking towards the changing future. We are glad you are part of this geological journey. We wish you a wonderful emerging from hibernation spring.

Steve Carhart - President, AGS

We want to thank those who supported AGS in 2019-20:

Hilcorp  UCM  Zeiss
Oil Search  USIBELLI COAL MINE  Seeing beyond
ConocoPhillips Alaska  University of Alaska Fairbanks  UAA
Structural Geologist Vacancy

The U.S. Geological Survey's (USGS) Central Energy Resources Science Center (CERSC) in Lakewood, Colorado has a vacancy for a Research Structural Geologist. The primary responsibilities of the position include (a) conducting research to evaluate and characterize the structural processes that impact petroleum generation, migration, and accumulation; (b) conducting research in support of ongoing USGS geologic energy resource assessments, as well as participating in these assessments; and (c) disseminating the results of research efforts through publications and presentations.

How to Apply:
This is a permanent, full-time position that will be filled at either the GS-12 ($84,118–$109,358) or GS-13 ($100,027–$130,039) levels, depending upon qualifications and experience. The application period is from 5/8/20 through 5/22/20. For more information, and to apply for the job, please visit:
https://www.usajobs.gov/GetJob/ViewDetails/567765600 -or-
https://www.usajobs.gov/GetJob/ViewDetails/567765700 (current/former Federal employees)

Applications for this vacancy must be received on-line via USAJOBS BEFORE midnight Eastern Time on 5/22/20. If you fail to submit a complete on-line application, you will not be considered for this position. Requests for extensions will not be granted. For assistance or questions, or if applying on-line poses a hardship to you, please contact Mary Dunlap (mmdunlap@usgs.gov) in the Office of Human Resources (303-236-9563) prior to the closing date.

About CERSC:
The CERSC is part of the USGS Energy Resources Program which conducts research and assessments to advance the understanding of the Nation’s energy resources. We study processes critical to the formation, accumulation, occurrence, and alteration of geologically based energy resources. We conduct undiscovered energy resource assessments and disseminate the results to the public and policy makers at all levels of government. We also evaluate the environmental and socioeconomic effects of energy resource occurrence, production, and use.

U.S. Citizenship is required. The Federal Government is an equal opportunity employer.
Alaska’s Oil & Gas Consultants

- **Geoscience**
- **Engineering**
- **Operations**
- **Project Management**

From the North Slope to Cook Inlet, PRA’s professional and highly skilled consultants know and understand the regional geology, the unique operating conditions, and the regulatory environment, having managed exploration and development projects across Alaska since 1997.

3601 C Street, Suite 1424
Anchorage, AK 99503

907-272-1232

www.petroak.com
info@petroak.com
## Alaska Geological Calendar of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Organization</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 15, 2019</td>
<td>5:00 pm - 8:30 pm</td>
<td>GSA</td>
<td>GSA 2019 Spring Scholarship Picnic</td>
<td>AK Airman’s Assoc Hall, 4200 Floatplane Dr</td>
</tr>
<tr>
<td>May 29, 2019</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Laura Gregersen, Alaska DOG, &quot;The history and aerial distribution of exploration drilling targets categorized by play type, North Slope and offshore arctic Alaska&quot;</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>May 30, 2019</td>
<td>7:00 am - 5:00 pm</td>
<td>AOGA</td>
<td>AOGA Conference</td>
<td>Dena’ina Center, Anchorage</td>
</tr>
<tr>
<td>May 31, 2019</td>
<td>9:30 am - 4:00 pm</td>
<td>AOGA</td>
<td>AOGA GMC Technical Breakout Session</td>
<td>Geol Material Center 3651 Penland Pkwy,</td>
</tr>
<tr>
<td>August 12, 2019</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Pedro A Restrepo-Pace, Oil Search Ltd., “Technical Progression in Tackling the Papua New Guinea Fold Belt : A Fit for Purpose Tool-kit, a Learning Curve and the Persistence that Led to Success in One of the Most Challenging Surface and Geological Settings</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Sept 17, 2019</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Greg Wilson, ConocoPhillips, A Regional look at Nanushuk Formation facies in outcrop, Brooks Range Foothills, Alaska</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Oct 22, 2019</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Tom Homza, Shell Exploration &amp; Production, “Deconvolving Alaska’s Barrow Arch”</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Dec 9, 2019</td>
<td>11:45 am</td>
<td>SPE/AGS</td>
<td>Oliver Mullins, Schlumberger, “Asphaltene Gradients, Connectivity and Tar Mats All Treated by Simple Chemistry and Reservoir Fluid Geodynamics”</td>
<td>BP Tower, Anchorage</td>
</tr>
<tr>
<td>Jan 23, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Pat Druckenmiller, UAF, “Little bones from a big state: baby dinosaurs from the Cretaceous paleo-Arctic of Alaska”</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Feb 18, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Jennifer Aschoff, UAA, “Context, internal characteristics and controls on Brookian “shelf-edge deltas”, North Slope, AK: Insight from integrated seismic facies mapping and core description”</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>March 17, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Dave Buthman, Hilcorp, “Cook Inlet Exploration: Past, Present, and Future”</td>
<td>Webex meeting</td>
</tr>
<tr>
<td>May 21, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Tom Douglas, Cold Regions Research and Engineering Laboratory, The current and projected future state of permafrost in the north with a focus on the carbon cycle</td>
<td>Webex meeting</td>
</tr>
<tr>
<td>Sept 17, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Stephen Hubbard, University of Calgary</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Nov 19, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Speaker to be determined</td>
<td>BP Energy Center, Anchorage</td>
</tr>
<tr>
<td>Dec, 2020</td>
<td>11:45 am</td>
<td>AGS</td>
<td>Date and speaker to be determined</td>
<td>BP Energy Center, Anchorage</td>
</tr>
</tbody>
</table>

**AMA:** Alaska Miners Association; **AGS:** Alaska Geological Society; **GSA:** Geophysical Society of Alaska

**AAEP:** Alaska Association of Environmental Professionals; **SPE:** Society of Petroleum Engineers; **UAA:** University of Alaska Anchorage.

**NEW!** UAA Geological Science Department Weekly seminars: Cook Inlet Exploration: Past, Present, and Future

[https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/geology/seminar.cshtml](https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/geology/seminar.cshtml)
Integrate Geoscience and Drilling
Capitalize on Your Wellbore Data Investment

Only the Techlog® wellbore software platform brings all of your wellbore-centric data together for better decisions—from exploration to development. With its advanced acoustics, geomechanics, and complex lithology solver, the Techlog platform improves formation evaluation in every well. This advanced technology enhances characterization and increases understanding of drilling hazards—even in the most challenging reservoirs.
The Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage AK 99510
On the web at: http://www.alaskageology.org

The Alaska Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related earth sciences. This newsletter is the monthly (September-May) publication of the Alaska Geological Society, Inc. 300+ newsletters delivered electronically per month.

Kenneth P. Helmold (Editor)
Alaska Geological Society, Inc.
P. O. Box 101288
Anchorage, AK 99510
e-mail: ken.helmold@alaska.gov
907-269-8673 (office)

MEMBERSHIP INFORMATION

AGS annual memberships expire November 1. The annual membership fee is $25/year ($5 for students). You may download a membership application from the AGS website and return it at a luncheon meeting, or mail it to the address above.

Contact membership coordinator Kirk Sherwood with changes or updates (e-mail: membership@alaskageology.org; phone: 907-334-5337)

All AGS publications are now available for on-line purchase on our website. Check to see the complete catalogue:
http://www.alaskageology.org/publications.htm

ADVERTISING RATES

Advertisements may be purchased at the following rates:
- 1/10 Page--$190/9mo, $75/1mo; size=1.8 x 3.5 inch
- 1/4 Page--$375/9mo, $95/1mo; size=4.5 x 3.5 or 2.2 x 7.5 inch
- 1/3 Page- $470/9mo, $105/1mo; size=7.0 x 3.5 or 3.0 x 7.5 inch
- 1/2 Page--$655/9mo, $125/1mo; size=9.0 x 3.5 or 4.5 x 7.5 inch
- Full Page--$1000/9mo, $165/1mo; size=7.5 x 9.0 inch

1mo rate=(9mo rate/9)+$50 (rounded up).

Contact Keith Torrance at 907-952-1288 for advertising information.

It’s PFD Application Time!

Did you know that you can support the society through Pick.Click.Give? When you fill out your PFD application, just select Alaska Geological Society, Inc. in the list of non-profits and you can help AGS to promote the uniqueness of Alaskan Geology and provide for education, geologic research, and networking to all who are interested as well as provide scholarships to students across a wide range of geologic topics.

https://www.pickclickgive.org/index.cfm/pfdorgs.info/Alaska-Geological-Society-Inc

- From the PFD home page http://pfd.alaska.gov/Application, select the green “Add or Change Your Pick.Click.Give. Donation” button
- You can change/add your donation at any time throughout 2020
### Membership Note

Membership renewal is November 1

**Full member - $25**  
**Student member - $5**  
**Lifetime membership - $250**

---

### 2018 - 2019 Alaska Geological Society Board, Committees and Delegates

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Phone</th>
<th>e-mail</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Steve Carhart</td>
<td>907-748-0494</td>
<td><a href="mailto:steve.carhart@alaskageology.org">steve.carhart@alaskageology.org</a></td>
<td></td>
</tr>
<tr>
<td>Past-President</td>
<td>Art Banet</td>
<td>907-748-0494</td>
<td><a href="mailto:banetak@qci.net">banetak@qci.net</a></td>
<td></td>
</tr>
<tr>
<td>President-Elect</td>
<td>Andy Dewhurst</td>
<td>907-265-6229</td>
<td><a href="mailto:andrew.dewhurst@conocophillips.com">andrew.dewhurst@conocophillips.com</a></td>
<td>ConocoPhillips</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Corey Ramstad</td>
<td>907-777-8427</td>
<td><a href="mailto:cramstad@hilcorp.com">cramstad@hilcorp.com</a></td>
<td>Hilcorp</td>
</tr>
<tr>
<td>Secretary</td>
<td>Heather Beat</td>
<td>907-443-3842</td>
<td><a href="mailto:Heather.a.beat@gmail.com">Heather.a.beat@gmail.com</a></td>
<td>Glacier Oil &amp; Gas</td>
</tr>
<tr>
<td>Director 2018-2020</td>
<td>Laura Gregersen</td>
<td>907-375-8240</td>
<td><a href="mailto:laura.gregersen@alaska.gov">laura.gregersen@alaska.gov</a></td>
<td>AK DOG</td>
</tr>
<tr>
<td>Director 2018-2020</td>
<td>Trystan Herriott</td>
<td>907-451-5011</td>
<td><a href="mailto:trystan.herriott@alaska.gov">trystan.herriott@alaska.gov</a></td>
<td>AK DGGS</td>
</tr>
<tr>
<td>Director 2018-2020</td>
<td>Steve Wright</td>
<td>907-854-2362</td>
<td><a href="mailto:AlaskaGeo@aol.com">AlaskaGeo@aol.com</a></td>
<td>Consultant</td>
</tr>
<tr>
<td>Director 2019-2021</td>
<td>Jennifer Crews</td>
<td>907-263-4516</td>
<td><a href="mailto:jennifer.r.crews@conocophillips.com">jennifer.r.crews@conocophillips.com</a></td>
<td>ConocoPhillips</td>
</tr>
<tr>
<td>Director 2019-2021</td>
<td>Kirk Sherwood</td>
<td>907-334-5337</td>
<td><a href="mailto:sherwook@mtaonline.net">sherwook@mtaonline.net</a></td>
<td></td>
</tr>
<tr>
<td>Director 2019-2021</td>
<td>Monte Mabry</td>
<td>907-230-4488</td>
<td><a href="mailto:monte.mabry@ilive.com">monte.mabry@ilive.com</a></td>
<td></td>
</tr>
<tr>
<td>AAPG Delegate</td>
<td>Ken Helmold</td>
<td>907-269-8673</td>
<td><a href="mailto:ken.helmold@alaska.gov">ken.helmold@alaska.gov</a></td>
<td>AK DOG</td>
</tr>
<tr>
<td>PSAAPG AGS Representative</td>
<td>Ken Helmold</td>
<td>907-269-8673</td>
<td><a href="mailto:ken.helmold@alaska.gov">ken.helmold@alaska.gov</a></td>
<td>AK DOG</td>
</tr>
<tr>
<td>Advertising</td>
<td>Jana DaSilva Lage</td>
<td>907-980-9368</td>
<td><a href="mailto:jidasilva5@hotmail.com">jidasilva5@hotmail.com</a></td>
<td>APICC</td>
</tr>
<tr>
<td>Education/Science Fair</td>
<td>Marwan Wartes</td>
<td>907-451-5056</td>
<td><a href="mailto:marwan.wartes@alaska.gov">marwan.wartes@alaska.gov</a></td>
<td>AK DGGS</td>
</tr>
<tr>
<td>Bylaws</td>
<td>Sue Karl</td>
<td>907-441-8010</td>
<td><a href="mailto:smkarl107@gmail.com">smkarl107@gmail.com</a></td>
<td>USGS</td>
</tr>
<tr>
<td>Memberships</td>
<td>Kirk Sherwood</td>
<td>907-334-5337</td>
<td><a href="mailto:membership@alaskageology.org">membership@alaskageology.org</a></td>
<td></td>
</tr>
<tr>
<td>Newsletter Editor</td>
<td>Ken Helmold</td>
<td>907-269-8673</td>
<td><a href="mailto:ken.helmold@alaska.gov">ken.helmold@alaska.gov</a></td>
<td>AK DOG</td>
</tr>
<tr>
<td>Publications</td>
<td>Alexandra Busk</td>
<td>907-696-0079</td>
<td><a href="mailto:alexandra.busk@alaska.gov">alexandra.busk@alaska.gov</a></td>
<td>AK DGGS</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Sue Karl</td>
<td>907-441-8010</td>
<td><a href="mailto:smkarl107@gmail.com">smkarl107@gmail.com</a></td>
<td>USGS</td>
</tr>
<tr>
<td>Website</td>
<td>Jan Hazen</td>
<td></td>
<td><a href="mailto:homesteadgraphics@gmail.com">homesteadgraphics@gmail.com</a></td>
<td>Consultant</td>
</tr>
<tr>
<td>Fundraising</td>
<td>Jennifer Crews</td>
<td>907-263-4516</td>
<td><a href="mailto:jennifer.r.crews@conocophillips.com">jennifer.r.crews@conocophillips.com</a></td>
<td>ConocoPhillips</td>
</tr>
</tbody>
</table>