ALASKA GEOLOGY

Newsletter of the
Alaska Geological Society

Cook Inlet Exploration: Past, Present, and Future

David Buthman
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The first commercial oil discovery in the Cook Inlet Basin occurred in 1957 at Swanson River Field, located on the Kenai Peninsula. This proof of valuable natural resources earned Alaska entry into the union as the 49th state in 1958. During the decade that followed, a number of exploratory wells were drilled in the Cook Inlet targeting oil, but found large amounts of gas - approximately 7 trillion cubic feet of gas. Explorers were discouraged by the oversupply of gas with no market, and the 1.8 billion barrels of oil that were found didn't justify continued capital efforts.

Enter the turbulent late 1960's: Several key developments took place in Alaska: 1) in 1968 the Union Collier Chemical Plant was built on the Kenai Peninsula in order to turn gas into fertilizer and sell it to Asia, 2) Arco completed the Prudhoe Bay State #1 discovery on the North Slope in 1968, and 3) the Kenai LNG plant was built in 1969. Since monetizing the Cook Inlet oversupply of gas via the Fertilizer and LNG Plants spanned several decades, and Prudhoe Bay opened a new frontier for exploration departments to explore, Cook Inlet exploration virtually stopped for the next 30 years.

But then in 2000, Anchorage local markets, operators, regulators, and utilities grew concerned that the gas oversupply could no longer meet the demands of the Fertilizer, LNG, and local utility markets. Operators Union and Marathon then started exploring specifically for gas, and quickly discovered Ninilchik Field, as well as several other gas fields in the ensuing years. Twelve years later, in 2012 Chevron/Unocal sold, and in 2013 Marathon sold, their producing properties in the Cook Inlet to Hilcorp Alaska LLC.

Presently, in 2020, Hilcorp is exploring the Cook Inlet Basin for gas in the Upper Cook Inlet and Kenai Peninsula, to serve the market, and in the Lower Cook Inlet and Iniskin Peninsulas to evaluate both the oil and gas potential. With a modernized exploration toolbox, including additional surveys of many sorts, we've made our first discovery at Seaview Prospect, near Anchor Point, with dreams of many more discoveries to follow.

AGS Meeting

Date & Time:	Tuesday, March 17; doors open at 11:30 am, talk from 12:00 – 1:00 pm
Program:	Cook Inlet Exploration: Past, Present, and Future
Speaker:	David Buthman; Hilcorp, Anchorage, AK
Place:	BP Energy Center, 1014 Energy Court, Anchorage, AK
Reservations:	Reservations are not required
Cost:	Seminar is free (catered lunches are no longer available)
	Feel free to bring your own brown-bag lunch

For more information call (907) 854-2363 or visit the AGS website: http://www.alaskageology.org

About the Speaker:

Dave Buthman is a Senior Geologist working Alaska New Ventures in Anchorage with Hilcorp Alaska LLC. The majority of his 38 years of experience has been in oil and gas exploration. After earning an MS in Geology from Southern Illinois University, he started the first 23 years of his career with Unocal, followed by 7 years at Chevron, and finished the last 8 years at Hilcorp. He is credited with dozens of significant discoveries in the Michigan and Cook Inlet Basins. Major assignments have included company acquisitions, global offshore oil and gas seep detection, gravity and magnetics, geologic field surveys, and impact crater studies. He has 18 works published in venues up to and including Geology magazine, and has served two terms as Secretary of the AGS.

From the President's Desk:

This month's presentation takes back to the beginning of Oil and Gas Development in Alaska.

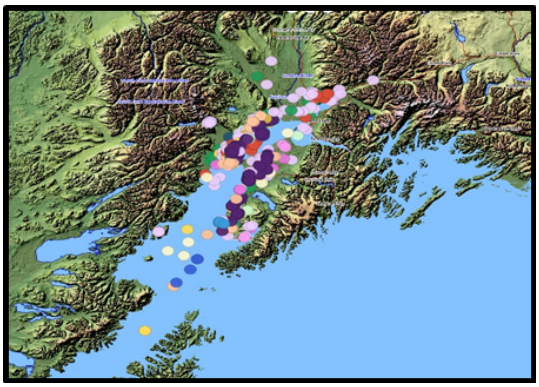
March 17, 2020, Tuesday

Speaker: Dave Buthman, Hilcorp

Topic: Cook Inlet Exploration: Past, Present, and Future

Cook Inlet the first trackable production of Oil in Alaska. This was the beginning of a strong development program that continues today with several innovative companies. I am glad we are having a presentation in this area. We need more presentations from other CI companies. Cook Inlet's long history in Alaska exploration and development is a story worth hearing all the time. The first production was in 1958 from the Swanson River field. Peak production of 250MBD shown in the chart was the production that funded continued Alaska development around the state.

We welcome Dave Buthman a long time AGS member and former board member to present at this March monthly talk. Please plan on attending Dave's presentation on this wonderful Oil and Gas Alaska area.



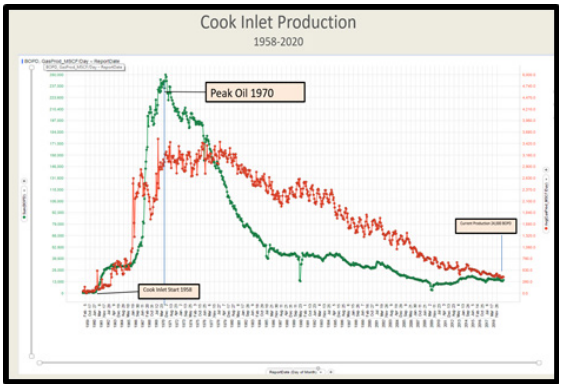


Figure 1 Alaska Development - Cook Inlet Highlighted and production history.

February presentation by UAA professor Speaker: Dr. Jennifer Aschoff, Department of Geological Sciences, University of Alaska, Anchorage

"Context, Internal Characteristics and Controls on Brookian "shelf-edge deltas", North Slope, AK: Insight From Integrated Seismic Facies Mapping and Core Description"

Another packed house to listen to her discussion on her regional facies classification of Brookian sand architectures. Her paper out later this year.

My thoughts that this is the next step into regional reservoir description classification. Tie this in with some digital core mapping and a AI algorithm. We'll be rocking.

Figure 2 Jan Aschoff UAA Speaker.

Newsletter:

We continue to offer the monthly newsletter and website as a communication/sharing tool for all members to read. We encourage you to share your geology adventures. Please submit your geology stories and pictures with comments for sharing in these mediums.

The AGS board recognized that our advertising fees in the newsletter did not reflect the transition to a digital-only format. Our new 2020 annual fees for the newsletter and website costs are:

- $100/year for a full page, $50/year for half page
- Website $500/year will include advertising in the newsletter. Half or full page.

We encourage our business friends to take advantage of the new rates and support our geology mission. Starting in September 2020, we will invoice all existing advertisers for the following year's fees. New subscribers will be annually invoiced for the subscription amount.

Alaska Technical Conference 2020 AGS-UAF-UAA

The Alaska Geological Society (AGS) is a strong supporter of the geoscience academic and research programs for the Alaska University system. The University of Fairbanks and the University of Alaska are our strongest focus. We support in a multitude of ways. As mentioned, a strong scholarship program, interaction with students, and technical conferences. This year on the UAF campus. Please join us. We continue to seek support and abstracts for this technology sharing event being held on the UAF campus.

We want to welcome our new 2020 Technical Conference Sponsors.

Gold:

Oil Search

ZEISS

Silver:

Chip Landmesser
Homer, AK

Mr. and Mrs. Robert H Peterson
Barbara Bohn

Thanks all. This is a great start in preparation for a great event.

Sincerely,

Steve Carhart – President Alaska Geological Society
March 2020

Figure 3. Oil Search Stepping Up. Josef Chmielowski and Mark Ireland.

Figure 4. Barbara, Jennifer, Andy, and Robert.

Call for Abstracts

Pacific Section AAPG/SEPM/SEG Convention

2020 Vision: Producing Our Future

April 4-8, 2020

Join us in Oxnard, California, just an hour north of Los Angeles, at the Embassy Suites Beach Resort, an oceanfront hotel and excellent convention venue. We are currently seeking abstracts for a high quality technical program that covers the broad interests of our members and the geoscience community. Convention information and instructions for abstracts at http://psaapgconvention.org/2020**.** Technical presentations will be scheduled for Monday and Tuesday, April 6-7.

Abstract Deadline is Friday, January 10, 2020.

Suggested Topics Include:

- Case Studies in Exploration and Development, California and the Pacific Rim
- The Monterey Formation and Similar Strata Across Space and Time
- Source to Sink Studies
- Integrated Studies in Stratigraphy and Sedimentology
- Applied Sedimentology and Paleontology
- Unconventionals and Alternative Resources
- Petrophysics: Applications, Innovations, Images
- Geoscience, Climate, and the Environment
- Aquifers, Underground Injection and Environmental Regulations
- Seismic: Acquisition, 3D Applications, AVO/Inversion, Induced Seismicity
- Structural Geology: Tectonics, HC applications, Earthquakes, Hazards
- Maximizing Recovery: Reservoir Characterization, Models, EOR
- Digital Tools and Big Data Applications

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jonschwalbach@yahoo.com

ROCKING ALASKA; STORIES FROM A FIELD GEOLOGIST

A BOOK REVIEW

Joe Kurtak

In *Rocking Alaska: Stories from a field geologist*, author Steve Fechner relates his experiences during an 18-year-long career as a geologist in Alaska. These range from those of an entry-level ground-pounder to project management in the Far North.

Steve's Alaskan account begins in the 1970s, working from remote field camps doing mineral exploration, and continues through 1995. His experiences are tied to what geologists call "hard rock" geology which focuses on the search for metallic minerals. He relates the realities of field work in Alaska, including the thrill of mineral discoveries, long days working in the field in rain and sun while fighting off hordes of mosquitos, and even tragedy resulting from the inherit dangers of remote fieldwork.

Steve describes the various field methods used by geologists in the search for mineral deposits, as well as the immense logistics involved in establishing field camps in remote locations in Alaska. This includes the frequent use of fixed-wing aircraft and helicopters to conduct fieldwork far from the State's sparse road system. Steve's various positions in both the private and public sectors, gave him the opportunity to experience field geology first-hand over wide expanses of Alaska, ranging from copper deposits in Prince William Sound to massive sulfides on the north slope of the Brooks Range. He mixes many personal accounts into the text, and as the Alaskan geology and mining fraternity is a rather close-knit group, some readers may find their names mentioned in stories told.

Leading up to his Alaskan experiences, Steve relates the events that led him down the path to become a practicing field geologist and work in the Last Frontier for organizations including WGM, the Bureau of Land Management, and the U.S. Bureau of Mines. Interspersed with the text are photographs illustrating the many projects and co-workers that Steve shared field experiences with over the years. Steve was a member of the Alaska Geologic Society and the Alaska Miners Association during his Alaskan years and participated in many of these group's meetings and conferences.

Both seasoned Alaskan geologists, as well as those interested in reading about the experiences of someone who lived and worked in Alaska for nearly two decades, will find this book an interesting read.

Rocking Alaska, Author: Steven A Fechner; Published by Fleeting Edge Press, 2019, 289 pages, ISBN: 978-0998547770. Copies are available through Amazon.com in both Kindle ($3.99) and paperback ($14.99). For local purchase ($10) contact Joe Kurtak; email: minensky@gci.net, or 907-345-5512.

The Alaska Geological Society offers scholarship awards to graduate and undergraduate students who are conducting geoscience research projects in Alaska

including

Alaska Geological Society Scholarships
The Don Richter Memorial Scholarship

Scholarship information and applications are available online at:

The Alaska Geological Society, Inc.
P.O. Box 101288
Anchorage, Alaska 99510

The Alaska Geological Society is a 501c3 nonprofit organization
Donations to these scholarship funds are tax deductible

Report on Alaska Geological Society Scholarship Awards from 2019

Below are summaries of progress on research projects that were awarded scholarships in 2019.

Hydrogeochemistry variability in fresh water flux to the Gulf of Alaska: Analysis of two contrasting coastal glacial watersheds

Jordan Jenckes[1], LeeAnn Munk[1], Eric S. Klein[1], David F. Boutt[2], Jens Munk[3], Dustin Horton[3]

[1] Department of Geological Sciences, University of Alaska Anchorage, Alaska
[2] Department of Geosciences, University of Massachusetts, Amherst, Massachusetts
[3] Department of Electrical Engineering, University of Alaska Anchorage, Alaska

Few studies have been done to understand the linkage between fluxes of glacial and non-glacial fed watersheds to coastal environments and the potential effects on intertidal habitats. This is an important area of research because it has been estimated that glacial runoff into the Gulf of Alaska (GOA) will greatly decline by the end of the 21st century which will alter the material flux into the GOA thereby causing shifts in coastal ecosystems. This study aims to characterize water flux and the geochemical loads associated with this water across a heavily glaciated to a minimally- glaciated gradient of watersheds. Two watersheds are examined: the Grewingk Glacier watershed which is 60% glaciated, and the Tutka Bay watershed which is 8% glaciated. Seasonal data collected monthly from March to October 2019 include glacial ice, supraglacial runoff, snow, rain, and stream water, which were analyzed for dissolved cations and anions and δ18O and δD. Average specific discharge at Grewingk Creek is 0.21 m3/s/km2 compared to 0.14 m3/s/km2 at Tutka Creek. Total cation and anion load is elevated in Grewingk Creek compared to Tutka Creek, due to higher freshwater flux at Grewingk from higher rates of glacial meltwater. Ion concentrations remained relatively stable at Tutka Creek throughout the sample period, while ion concentrations were variable and declined in Grewingk Creek. In order to understand the timing and magnitude in which different water sources effect stream discharge a mixing model using stable isotopes of water (δD and δ18O) and specific conductivity of the water will be applied to determine the fraction of each component of stream discharge. This approach will allow determination of the percent contribution of precipitation to total discharge and the magnitude of glacial melt on freshwater flux. These preliminary results indicate that heavily glaciated watersheds have a higher freshwater flux and higher loads of dissolved ions compared to minimally glaciated watersheds. This increase of freshwater flux and nutrients, however, is temporary and as glacial runoff declines may have dynamic impacts on the coastal ecosystems.

Abstract for American Geophysical Union Fall Meeting 2019

Impacts of Rapid Climate Changes on Mass Movements in Denali National Park and Preserve, Alaska

Robert, Zena, Mann, D., Farquharson, L., Romanovsky, V., Capps, D., Meyer, F., and Maio, C.,

Denali National Park and Preserve (DENA) is a crown jewel within the US National Park system. It receives over 600,000 visitors a year, most of whom travel the 140-km road traversing the northern flank of the park. This road is threatened by a wide range of mass movement types, some of which are related to the thawing of permafrost, or perennially frozen ground, as climate warms. Landslides along the DENA road corridor are an urgent management issue and an interesting case study into how climate change impacts hillslope geomorphology in a subarctic mountain range. An ongoing mass movement near mile marker 35 is a representative sample of landslides that are occurring along the Park Road Corridor. This polygenetic slide originated during the summer of 2016 as an active layer detachment, which rapidly transformed into a retrogressive thaw slump driven by the weight of melting ice-rich colluvium under a 2-meter-thick talus deposit. The progressive enlargement of the thaw slump appears to be caused by an incompetent layer of bedrock composed of clay, coal, and sand. The instability of this site has been exenterated by a layer the underlying colluvium contains peat dating to the middle Holocene. We hypothesize that mass movements in DENA have increased in frequency because of post-Little Ice Age warming, that a majority of the recent mass movements are reactivations of older mass movements that were previously active during the middle Holocene (3-4 thousand years), and further that landslides are most frequent on north-facing slopes because active layers (depth of seasonal freeze-thaw) are thinnest there and have been less affected by past climatic fluctuations. To test these hypotheses, we classified mass movements along the Park Road using the Varnes system modified for periglacial environments, mapped their occurrence in a GIS database to test for differences in aspect frequency, and used remote sensing imagery and lichenometry to estimate initial failure dates. Preliminary results confirm that landslide frequency has increased over the last several decades, corroborate observations that permafrost thaw is frequently involved in landslide initiation, and suggest that slope aspect is a useful predictor of landslide occurrence.

American Geophysical Union Fall Meeting 2019; San Francisco, California

Airborne Hyperspectral Survey Investigation of the Potential Benefits for Mapping Geology and Mineral Deposits in High Latitude Remote Regions

Curtis Bernard and Elisabeth Nadin, University of Alaska Fairbanks

Hyperspectral imagery can gather large data sets within a relatively short time frame. It has been implemented more and more in the past few years to cut costs for intensive field expeditions, but is still not commonly used in upper latitude areas like Alaska. Alaska is an ideal study area to test applicability of hyperspectral imaging in remote areas with limited access. In summer 2019 I sampled and mapped in the Mount Hayes A-2 quadrangle in the Alaska Range, using the Don Richter Memorial Scholarship that I was awarded. Thanks to those funds, I was able to fulfill a two-week field expedition during which I collected samples and recorded or verified outcrop features such as brightness, alteration levels, and rock type if I could identify it in the field. I was also able to mark locations that would be easy to identify in spectral images, such as snow patches or bodies of water. Back in the lab, I gathered spectral and geochemical data on the samples I had collected in the field. For spectral data, I used a Portable Spectroradiometer (PSR+3500), which provides a spectral signature with a wavelength range of350–2500 nm. For geochemical analyses, I used a Portable X-ray Fluorescence Spectrometer (Tracer Vi), which gives both whole-rock and trace-element data. I used some of the AGS funds to make thin sections of representative samples, in order to discriminate between igneous and metamorphic rocks based on textures and mineralogy. In addition to the fresh samples I gathered last summer, I also have access to a collection from the same field site gathered in the 1980s, which is housed at the Alaska Division of Geological and Geophysical Surveys, and I will gather spectral, geochemical, and petrological/textural data onmany of these samples as well. Combining those three data sets allows me to categorize the rocks in order to create a “spectral library” that will be useful in identifying specific rock types in the imagery. *(Continued)*

I have acquired the airborne imagery for half my field site, thanks to the Hylab at University of Alaska Fairbanks. The imagery collected used HySpex VNIR-1800 and SWIR-384 cameras, which has a combined spectral range of 400–2500 nm. I hope to collect the remaining half in summer 2020. I am currently finishing data collection for my samples, along with processing imagery. I plan to have combined spectral and geochemical data and an interpreted map for some of the field site by April 2020, and complete the study by December of this year. The final products will be a geologic and a mineral map whose scale is dependent on the quality of data. The mineral map will showcase mineralogy that indicates unique spectral characteristics, such as carbonates and hydrous minerals, within the specified spectral range.

Tectonic Evolution of the Northern Cordilleran Continental Margin: A Re-evaluation of Upper Paleozoic-Cretaceous Stratigraphy, Denali National Park and Preserve, Alaska

Brandon Keough and Kenneth Ridgway, Purdue University

The Paleozoic-Mesozoic tectonic history of the northern North American Cordillera is comprised of a series of long-lived tectonic configurations including convergent, collisional, and passive margins. Throughout this time, growth of the ancestral continental margin was driven by processes including accretion of arcs and crustal fragments, emplacement of subduction-related complexes, and the incorporation of passive margin sequences during times of convergence. The result of these processes is an assemblage of tectonostratigraphic domains connected by a diverse range of geologic relationships. Reconnaissance-scale geologic mapping provides a first-order framework for deciphering these events, however more detailed structural, stratigraphic, and geochronologic analyses are necessary to demonstrate tectonic connections along the margin.

We present new stratigraphic and geologic mapping data, as well as the first U-Pb detrital zircon ages and Hafnium isotopic data for Pennsylvanian-Upper Cretaceous strata exposed within Denali National Park and Preserve, central Alaska Range. Permian strata include marine siliciclastics with a maximum depositional age (MDA) of 286 Ma; this package is overlain by tUpper Triassic basalt. Epsilon Hf values range from -18 to +13. We tentatively interpret these strata as submarine fan deposits similar to the Mystic Assemblage and other strata of the Farewell Terrane exposed in the western Alaska Range. Triassic strata include a package of primarily fine-grained, carbonaceous marine siliciclastic and calcareous beds with a scattered subset of youngest detrital zircons ranging from Pennsylvanian to Mid-Triassic. While our detrital zircon data yield a conservative MDA no younger than Early Triassic, previous biostratigraphic control suggests a Late Triassic depositional age. Epsilon Hf values range from -26 to +8. We tentatively interpret these strata as submarine fan deposits including turbiditic deposition of siliciclastic and calcareous sediments along the ancestral continental margin. An angular unconformity separates these strata and an overlying conglomerate previously mapped as part of the Upper Cretaceous Cantwell Formation is composed primarily of rounded cobble-boulder size quartz clasts. Detrital zircon data are very similar to the previous package with a conservative Permian MDA and single grains as young as latest Triassic. We tentatively interpret this unit as alluvial fan deposits associated with Late Triassic tectonism.

A major unconformity divides these strata and the Upper Cretaceous (Campanian-Maastrichtian) Cantwell Formation. The Cantwell Formation is comprised of a lower and upper member totaling approximately 4 km thick. The lower member is dominated by sheet conglomerate beds and fines upward where conglomerate beds become lenticular and facies are dominated by interbedded sandstone and siltstone. Detrital zircon data from the lower Cantwell Formation include a primary age peak at 200 Ma with subordinate peaks at 100 and 360 Ma and abundant Precambrian grains. We interpret the lower Cantwell Formation as wet alluvial fan and braided fluvial deposits. The upper Cantwell Formation is comprised of laterally-continuous sandstone and siltstone beds with abundant symmetric ripples, interference ripples, and leaf fossils. Large sandstone bodies cross cut lacustrine deposits locally, though they are not common. These bodies are interpreted as axial trunk channels. Major detrital zircon age peaks occur at 72, 100, and 200 Ma. Subordinate peaks occur at 360 Ma with abundant Precambrian grains. Epsilon Hf values for the upper Cantwell Formation range from -22 to +13. We interpret the upper Cantwell Formation as widespread lacustrine deposits with well-established axial channels and possible nearshore marine environments. The upper and lower members of the Cantwell Formation have similar MDAs of approximately 75 Ma. *(Continued)*

We propose an updated stratigraphic framework for upper Paleozoic-Mesozoic strata of the central Alaska Range. We interpret Permian-Early Triassic marine strata as passive margin strata deposited prior to development of an unconformity by the Late Triassic. This unconformity is marked by the juxtaposition of deformed marine strata and cobble-boulder conglomerate, both likely of Mid-Late Triassic age. Upper Jurassic-Early Cretaceous marine strata (map unit KJf of Csejtey et al., 1992) are also exposed in the study interval and have been roughly correlated to the Kahiltna Assemblage. We do not have data from this unit at this time but hope to include new data in our stratigraphic framework over the coming year. However, a significant angular unconformity between these strata and the Upper Cretaceous Cantwell Formation is well documented and suggests significant exhumation prior to development of the Cantwell basin.

Through further analysis of this data and additional data collection we hope to address the following topics and questions: (1) Regional stratigraphic correlations (2) The possibility of interaction between the Farewell terrane and the Alexander terrane outboard of the continental margin during the Permian (3) The timing and nature of accretion of the Farewell terrane to the continental margin, and (4) The configuration of the Triassic continental margin prior to accretion of allochthonous terranes including comparisons to other Upper Triassic siliciclastic strata along the margin.

Cordilleran Tectonics Workshop, Anchorage, February 2020

Extension history, fault evolution, and structural inheritance along the multiple Beaufort rifted Margin, northern Alaska

Triffon Tatarin, University of Alaska Anchorage

A series of varying fault orientations at different stratigraphic levels associated with multiple extensional events since the Devonian, including the Early Cretaceous opening of the Canada Basin, has created a structurally complex area on the Beaufort Margin of northern Alaska. While there have been many detailed studies of the North Slope of Alaska, published subsurface fault maps are scarce, and the tectonic history has not been fully elucidated. This thesis will explore an oil-producing region with numerous structurally-controlled active fields, such as the Prudhoe Bay, Kuparuk, Milne Point, and Colville River units. Analysis of the Storms 3D seismic volume has resulted in the identification of three distinct normal fault orientations that affect different vertical ranges within the stratigraphy and reflect three distinct ages of fault activity. Faulting extends throughout the stratigraphy, from the Ellesmerian megasequence up through to the Brookian megasequence, with different fault orientations likely caused by a change/rotation in stress fields associated with successive tectonic events as well as the effects of structural inheritance through reactivation of older faults during younger events. Oblique reactivation of Jurassic faults resulted in en echelon segmentation during upward fault propagation in the Cretaceous and the Eocene. The evolution of the varying fault sets was facilitated by mechanical interactions between them, creating a complex structural history.

Detailed seismic analysis reveals that younger fault systems reactivated and utilized the inherited structure of a Late Jurassic/Early Cretaceous (Beaufortian) rift system, which also may have utilized an older inherited rift structure from the Devonian or Mississippian. This reactivation of older structures occurred after the first-phase of the Beaufortian rifting, which occurred along the preexisting Caledonian suture zone between Alaska and the western Canadian Arctic Islands. This rifting then proceeded to extreme extension (hyperextension) during the Jurassic and the generation of OCT (Ocean-Continental Transition) type lithosphere. Early Cretaceous rift faults (late Beaufortian), obliquely oriented to the Jurassic fault fabric, provide evidence for a second phase of rifting in the Beaufortian. This rifting eventually led to seafloor spreading, generation of mid-ocean ridge basalts (MORB), and the opening of the Canada Basin in the Early Cretaceous. During the Eocene, northward propagation of the eastern Brooks Range caused intense lithospheric flexure about a ~N-S hinge line, which in turn, created an additional fault set. This Eocene resurgence activity is also hypothesized to have caused reactivation of the Jurassic fault set. Based on the changing extension directions through time, I propose a new mechanism for the second phase Beaufortian rifting, which led to the opening of the Canada Basin. This hypothesis involves a series of transform faults and oblique spreading vectors along the seafloor spreading axis.

Alaska Geological Society Members and Friends – Welcome!

The Alaska Geological Society (AGS) is alive and well and working on this next project. AGS has always been a strong supporter of the University of Alaska geoscience programs in Fairbanks and Anchorage. We do this through strong scholarship programs and our continued professional and student attended technical conferences. We ask you to help us continue this process. The included link will outline our history and direction.

"AGS Standing with the University of Alaska Geosciences - Link"

How can you help today?

1. Plan on attending this technical conference. Please encourage your friends to attend.
2. Submit an abstract for a 20-minute talk and plan on presenting.
3. Submit a poster abstract

   Link:http://www.alaskageology.org/2020-ags-uaf-technical-conference.html

Schedule
Friday, April 17 - Field Trip to CREEL - Permafrost Research Facility - Facility Information
Friday, April 17 - Evening No-Host Reception
Saturday, April 18 - Conference, UAF Campus, 8 am - 3 pm

Sponsorship

Our programs are managed by volunteers and your donations are 100% effective. We ask that you consider a donation to the technical conference in April 2020.

To help, we ask you to become a Gold ($500), Silver ($250), or Bronze ($100) contributor. These funds will directly go to financing the conference, i.e. posters, facilities, and field trips. You can also choose to directly sponsor any of the events listed below.

Friday Night Dinner Support	- $400
Lunch	- $400
Morning Coffee	- $200

Afternoon refreshments	- $200
Student Poster Award 1	- $100
Student Poster Award 2	-$100

All sponsors will receive recognition in publications and posters.

To donate to the AGS 2020 Technical Conference email treas@alaskageology.org and he will follow up with payment method. Online process will be available on our website soon.

In advance, we want to thank you for supporting the Alaska Geological Society and University of Alaska

Conference Committee Leads:

Sean Regan - UAF	- Associate Professor
Shuvajit Bhattacharya UAA	- Assistant Professor
Steven Carhart	- President Alaska Geological Society
Andy Dewhurst	- VP Alaska Geological Society
Corey Ramstad	- Treasurer Alaska Geological Society
Heather Beat	- Secretary Alaska Geological Society
Art Banet	- Past President Alaska Geological Society
Kirk Sherwood	- Membership

Alaska Geological Society

Dear Geology Friends,

If you are receiving this note you have been part of the Alaska Geological Society (AGS) history. You may have attended one or more of our monthly presentations, attended one of our technical conferences, or partnered with our Alaska based University scholarship activity. This year the AGS is co-sponsoring the 2020 Geology and Geosciences Technical Conference in Fairbanks, Alaska in association with UAF and UAA geoscience programs.

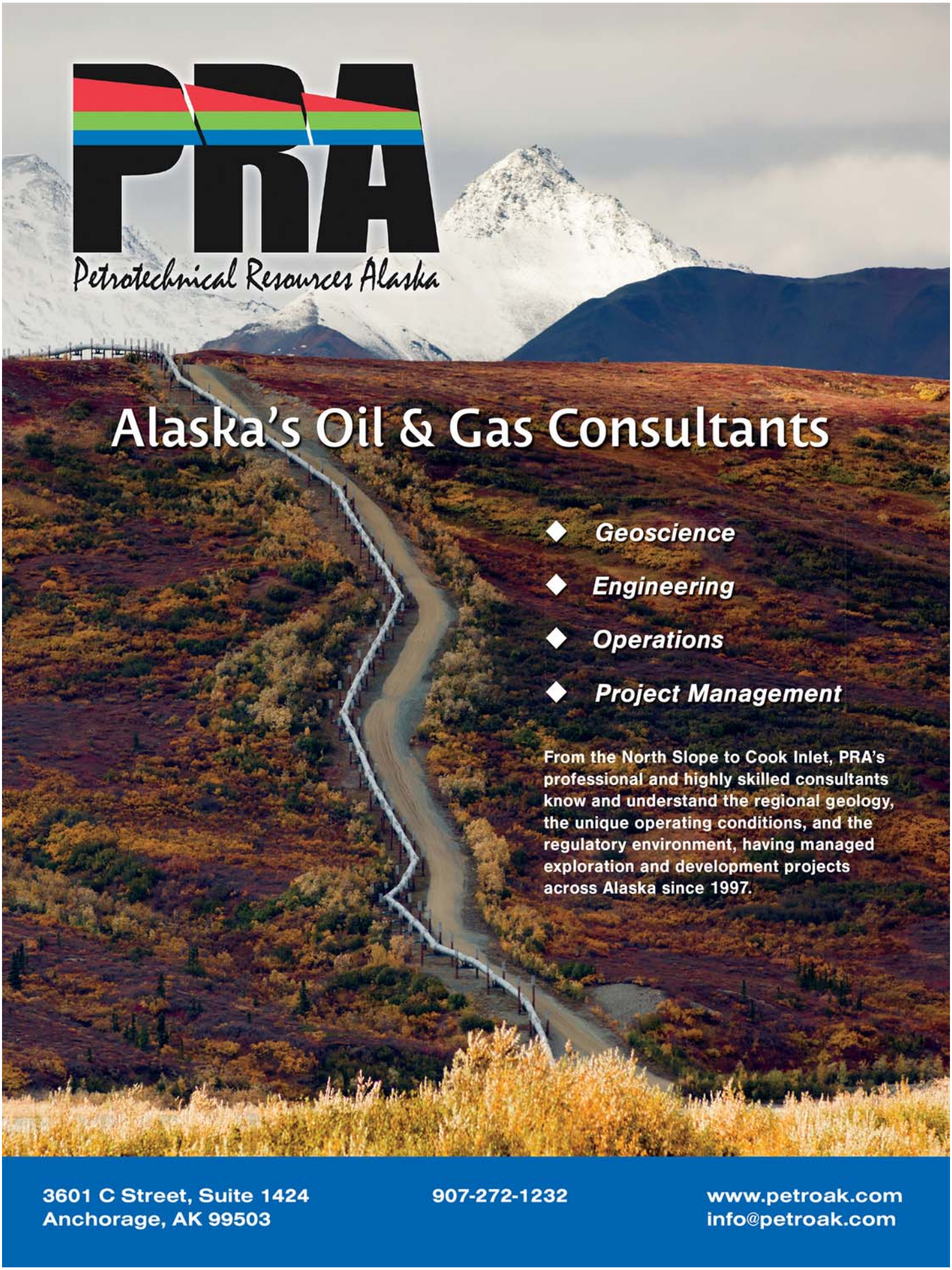
Fairbanks rich mining history and gateway to North Slope geology makes this an ideal location for this year's Technical Conference. The regional mining was the foundation of Alaska statehood. Oil and gas added to Alaska resource progression. All geosciences play a key role in these resource understandings. Fairbanks, UAF, and Anchorage, UAA, are an integral part of these studies.

The April 17-18 conference will include talks and posters from a wide range of professionals and University students. We welcome our keynote speaker Dr. Jamey Jones, USGS. Additional details are provided in the attachments.

We are asking you to help make the 2020 conference one for the books. We ask that you do help us and support these wonderful Universities and help keep the romance of progressing geology in Alaska.

Sincerely,

Steven Carhart
President Alaska Geological Society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Alaska Geological Calendar of Events

Date	Time	Organization	Event	Location
May 15, 2019	5:00 pm - 8:30 pm	GSA	GSA 2019 Spring Scholarship Picnic	AK Airman's Assoc Hall, 4200 Floatplane Dr
May 29, 2019	11:45 am	AGS	Laura Gregersen, Alaska DOG, "The history and aerial distribution of exploration drilling targets categorized by play type, North Slope and offshore arctic Alaska"	BP Energy Center, Anchorage
May 30, 2019	7:00 am - 5:00 pm	AOGA	AOGA Conference	Dena'ina Center, Anchorage
May 31, 2019	9:30 am - 4:00 pm	AOGA	AOGA GMC Technical Beakout Session	Geol Material Center 3651 Penland Pkwy.
August 12, 2019	11:45 am	AGS	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	BP Energy Center, Anchorage
Sept 17, 2019	11:45 am	AGS	Greg Wilson, ConocoPhillips, A Regional look at Nanushuk Formation facies in outcrop, Brooks Range Foothills, Alaska"	BP Energy Center, Anchorage
Oct 22, 2019	11:45 am	AGS	Tom Homza, Shell Exploration & Production, "Deconvolving Alaska's Barrow Arch"	BP Energy Center, Anchorage
Nov 19, 2019	8:30 am - 11:30 am	AGS/USGS	Dave Houseknecht, USGS, "US Geological Survey Public Assessment Review"	BP Energy Center, Anchorage
Dec 9, 2019	11:45 am	SPE/AGS	Oliver Mullins, Schlumberger, "Asphaltene Gradients, Connectivity and Tar Mats All Treated by Simple Chemistry and Reservoir Fluid Geodynamics"	BP Tower, Anchorage
Jan 23, 2020	11:45 am	AGS	Pat Druckenmiller, UAF, "Little bones from a big state: baby dinosaurs from the Cretaceous paleo-Arctic of Alaska"	BP Energy Center, Anchorage
Feb 18, 2020	11:45 am	AGS	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"	BP Energy Center, Anchorage
March 17, 2020	11:45 am	AGS	Dave Buthman, Hilcorp, "Cook Inlet Exploration: Past, Present, and Future"	BP Energy Center, Anchorage
April 17-18, 2020	All Day	AGS Tech Conference	"Standing with the University of Alaska Geosciences"	UAF, Reichardt Building
May 21, 2020	11:45 am	AGS	Tom Douglas, Cold Regions Research and Engineering Laboratory, Title to be determined	BP Energy Center, Anchorage
Sept 17, 2020	11:45 am	AGS	Speaker to be determined	BP Energy Center, Anchorage
Oct 22, 2020	11:45 am	AGS	Barrett Salisbury, DNR, "Neotectonics of Interior Alaska"	BP Energy Center, Anchorage
Nov 19, 2020	11:45 am	AGS	Speaker to be determined	BP Energy Center, Anchorage
Dec, 2020	11:45 am	AGS	Date and speaker to be determined	BP Energy Center, Anchorage

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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.

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

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