

# 2019 GMC Technical Breakout Session

In connection with the 2019 Alaska Oil & Gas Association Conference

Alaska Geological Society – Connecting the past to the future

Art Banet, President  
Steve Carhart, President-Elect



**Friday, May 31<sup>st</sup>, 2019 | 9:30AM to 4PM**

(open house, lunch included, no cost, RSVP welcomed)

RSVP: [events.blackbirdsvp.com/gmc-technical-conference](https://events.blackbirdsvp.com/gmc-technical-conference)

## Alaska Geologic Materials Center (GMC)

3651 Penland Parkway  
Anchorage, AK 99508  
907-696-0079

**Focus:** Can new investigative technologies and machine learning systems better assist geologists and resource companies to interpret Alaska's geologic challenges.

## Agenda

**Pre-setup:** Wednesday, May 29<sup>th</sup> from 8:30 to 4:00 and Friday, May 31<sup>st</sup> from 8:30 to 9:30

### Morning Talk Sessions – Main Conference Room

- 9:30** – Kurt Johnson, Curator, Alaska Geologic Materials Center  
*Conserving Alaska's Past, Discovering its Future*
- 9:40** – Dr. Shuvajit Bhattacharya, Assistant Professor, University of Alaska  
*Integration of Tax-Credit 3D Seismic, Wells, and Core Data for a Better Understanding of the Nanushuk-Torok Reservoirs*
- 10:00** – Dr. Ramil Ahmadov, Principal Scientist, New England Research, Inc.  
*Non-Destructive Automated Scanning of Fine-Scale Geological, Petrophysical and Geomechanical Rock Properties of Nanushuk Formation*
- 10:20** – Dave Browning, Regional Manager North America, Terracore Geospectral Imaging  
*Hyperspectral Core Imaging: Applications in Unravelling Deposit and Reservoir Mineralogy*
- 10:40 – Break**
- 10:50** – Dr. Brigette Martini, Chief Geologist, Corescan  
*Hyperspectral Core and Cuttings Imaging for Rapid, Automated Mineralogy and Lithology Logging: Applications in Alaskan Petroleum*
- 11:10** – Robert Chelak, Biodentify  
*Predicting Potential Reservoirs by DNA Fingerprinting and Machine Learning from Shallow Soil Samples*
- 11:30** – KD Derr, Electron and X-ray Microscopy Specialist, Zeiss Research Microscopy  
*Zeiss Shale Imaging Workflow—Core to Pore Multiscale Characterization*

### 12:00 – Lunch

- 12:30** – Dr. Michael Smith, Baker Hughes, a GE company  
*Extracting Value from Drill Cuttings, a Free and Underutilized Drilling By-Product for Petroleum System Evaluation. Rock Sample: Square Lake Test Well 1, Nanushuk Fm. Cuttings (1841'-2040')*

### Afternoon Core Presentations – Main Viewing Room

- 1:00** – New England Research, Inc.  
*Rock Sample: Umiat 18, Nanushuk Fm. Slabbed Core (760'–797.9')*
- 1:30** – Terracore Geospectral Imaging  
*Rock Sample: Umiat 18, Nanushuk Fm. Slabbed Core (841.9'–893.9')*
- 2:00 – Break**
- 2:10** – Corescan  
*Rock Sample: Selected NPRA Wells with Slabbed Core*
- 2:40** – Zeiss  
*Rock sample: Oil & Gas Core Analysis, 3D Information with X-ray Microscopy for Fish Creek Test Well 1, Torok Fm. Chips & Thin Sections (5480.65'–5515')*
- 3:10** – University of Alaska Anchorage Research Posters

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## Presenter Summaries

### University of Alaska Anchorage | [uaa.alaska.edu](http://uaa.alaska.edu)

The University of Alaska Anchorage (UAA) is the state's largest post-secondary institution. The Geological Sciences department offers both BS and MS degrees. Our research-active faculty are internationally recognized for their impactful work in hydrocarbon systems, resource development, and environmental geology, with strengths in geochemistry, stratigraphy, structural geology/tectonics, geophysics/petrophysics, and paleoclimatology.

### New England Research | [ner.com](http://ner.com)

New England Research (NER) specializes in the measurement and interpretation of rock properties for the energy industry. In response to our clients' needs over the last 29 years, NER has developed new and innovative rock testing equipment and test protocols that address reservoir characterization and engineering challenges in both conventional and unconventional reservoirs.

### Terracore | [terracoregeo.com](http://terracoregeo.com)

TerraCore is a leading solutions provider via their non-destructive mineral analysis and core imagery techniques. The combination of ruggedized mobile units, true color, short-wave and thermal infrared imaging, mineral interpretive consultation, and their extensive experience across all commodities make TerraCore a key consultant for the Mining and Oil & Gas Industries of Alaska. TerraCore's highly efficient acquisition methods allow for over 1km of hyperspectral core imaging per day, reducing the decision timeline of your project, system footprint in the workflow, and increasing overall productivity.

### Corescan | [corescan.com.au](http://corescan.com.au)

Corescan is a global services company, with offices in the USA, Canada, Australia, Chile, Peru, Argentina, Mexico, and London, specializing in automated mineralogical and textural analysis of drill core and cuttings for petroleum, mining, geothermal and geotechnical applications. Corescan's Hyperspectral Core Imager-3 (HCI-3) integrates high resolution reflectance spectroscopy (0.5mm), visual imagery (0.05mm) and 3D laser profiling (0.5mm) to map mineralogy, lithology and structure.

### Biodentify | [biodentify.ai](http://biodentify.ai)

Biodentify has created a revolutionary technique in identifying where hydrocarbons exist without drilling wells or acquiring seismic. The process involves using high end computing and machine learning to analyze hundreds of thousands of DNA biomarkers that thrive in shallow soil samples from reservoir gas micro-seeps. With this patented technique the system can predict where potential reservoirs exist or been bypassed. This process can rank the best reservoir locations, reduce drilling risks, and as a result saves time, money, and the environment from excessive activity.

### Zeiss | [zeiss.com/us/microscopy](http://zeiss.com/us/microscopy)

Imaging solutions for characterization of core plugs, end trims, rock cuttings, and thin sections that span 8 orders of magnitudes from pore to plug scale with an array of microscopy: light, confocal, X-ray, scanning electron, focused ion beam, and helium ion.



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## **Presenter Contact Information**

### **Alaska Geologic Materials Center**

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