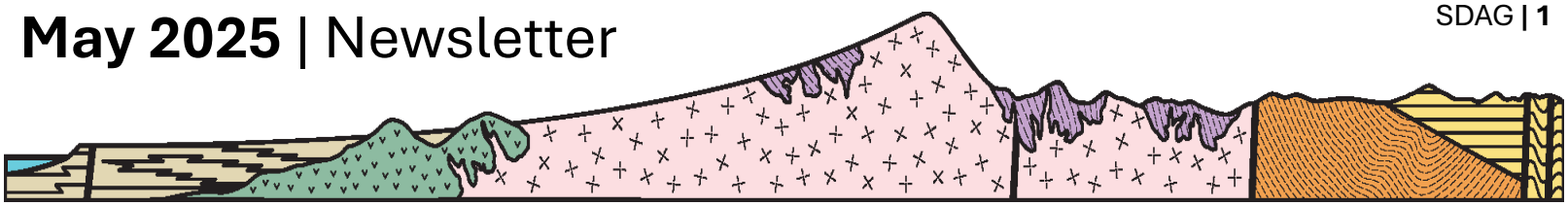
May 2025 | Newsletter



SAN DIEGO ASSOCIATION OF GEOLOGISTS

Click here to join our Facebook!

Visit our Website!

2025 OFFICERS

President
Heather Reynolds
(540) 525-6475

Vice President
VACANT

Secretary
Jasmine Peach

Treasurer
Xiomara Rosenblatt

Web Master
Carolyn Glockoff
CARO-LION ENTERPRISE

SDAG Announcements

SDAG MEETING ANNOUNCEMENT

2nd Wednesday, May 14th, 2025

6:00 pm - Social Hour | 6:45 pm - Dinner | 7:15 pm – Program

LOCATION:

Sufi Mediterranean Cuisine
5915 Balboa Ave
San Diego, CA 92111

SPEAKER:

Dr. Sebastian Lobo-Guerrero
Ph.D., P.E., BC.GE.

TOPIC: Landslide Stabilization

DINNER: Mediterranean Buffet with Vegetarian options

COST: Member & Non-Member $50.00 - Student $15.00

RESERVATIONS:
Make & Pay your reservation online through the SDAG website, before **6PM TUESDAY, MAY 13th**

**However, walk-in registration is welcome but pay with check or cash at check-in.*

Click Here! For Directions

Click Here! For Reservations

Please note, all meeting reservations require online pre-payment due to venue costs, venue contracts, and loss of money due to no shows. Refunds cannot be processed after the registration deadline.

Meet Our | Speakers & Topics

Dr. SEBASTIAN LOBO-GUERRERO, *PH.D., P.E., BC.GE*

Sebastian Lobo-Guerrero, Ph.D., P.E., BC.GE. is a highly experienced Geotechnical Project Manager and Laboratory Manager at AGES Inc. in Pittsburgh, PA. He also serves as an Adjunct Professor at the University of Pittsburgh. With 24 years of experience in Geotechnical Engineering, he specializes in the design of deep and shallow foundations, earth retaining structures, and landslide stabilization. Over the course of his career, Dr. Lobo-Guerrero has authored over 250 technical papers and presentations published in scientific journals, geotechnical magazines, and conference proceedings worldwide. He is also a co-author and implementation instructor of the State of Delaware LRFD Bridge Design Manual.

Dr. Lobo-Guerrero has held leadership roles in various professional organizations. He is a former Chair of the Pittsburgh ASCE Geo-Institute and a former Director of the ASCE Pittsburgh Section. He is also a member of the DFI Anchored Earth Retention Committee and served as Conference Chair for DFI-45 in 2020 and DFI-47 in 2022. He is currently on the Board of Trustees of the Academy of Geo-Professionals, ASCE. His contributions to the field have been recognized with numerous awards, including the 2024 ASCE Fellow, the 2022 DFI President's Award, the 2021 ASCE Lifetime Achievement Award, the 2020 ASCE Civil Engineer of the Year (Pittsburgh Section), the 2016 ASCE Geo-Institute Distinguished Reviewer, and the 2006 ASCE Geo-Institute Best Paper on Numerical Modelling.

ABSTRACT:

There are multiple ways to stabilize landslides. The presentation covers an overview of different techniques such as mass removal, rock buttresses, geosynthetic reinforced soils, ground anchors, and in particular the use of deep foundations. Slope stabilization with deep foundation elements has become a popular technique in the last 20 years when other techniques are not feasible due to site constrains. The presentation covers a state of the art regarding design and construction of this technology through slide stabilization construction projects developed by the author. In particular the use of micropiles and drilled shafts is highlighted as effective means of slide remediation. The effect of local geology is critical in the implementation of this technology. This is explained through 2 case studies having very different geological models that ultimately determined the remediation technique. The presentation also highlights recent advances in this topic developed by professional associations such as ASCE Geo-Institute and Deep Foundations Institute (DFI).

PRESIDENT'S CORNER

Hello SDAG Members,

We had a full house for our April meeting at Phil's BBQ, where three SDAG student scholarship recipients — Nicolas Oliver, Emily Imperato, and Jordan Jaeger — did an amazing job presenting their research! Well done! Thanks to everyone who was able to attend — it was a memorable night!

Now how about that earthquake on May 14th?! I had just returned from the field and was returning some equipment on the 4th floor when I started hearing odd creaking noises. It took me a couple of seconds to realize — OH MY GOSH, it's an earthquake! A bit of panic definitely set in, but I stayed put until the shaking (more like swaying, since the building is on rollers) stopped, and then I made a beeline down the stairs and away from the building. Phew! I haven't experienced many earthquakes of that magnitude… I'm originally from the East Coast. It was pretty cool to experience — and fortunately, only minimal damage was reported in the area. Hope everyone enjoyed the ride and wasn't rattled too much. 😊

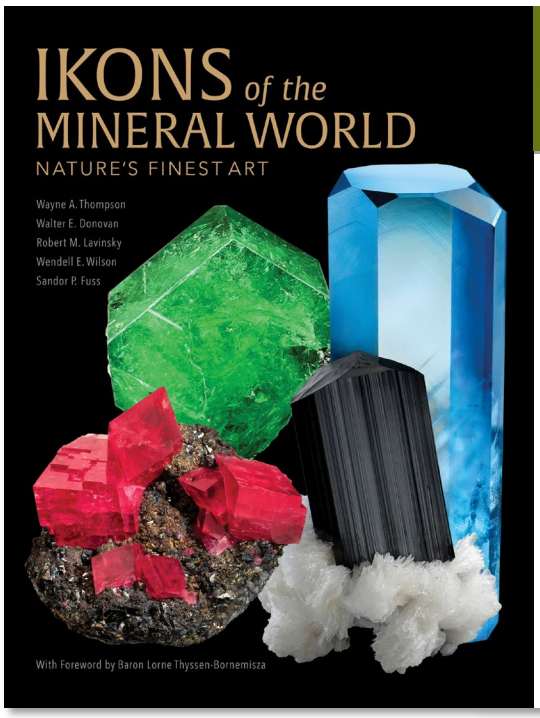
While on the topic of earthquakes — the Annual SDAG Field Trip will be held this September 26–28, where we'll explore the San Andreas Fault near the Wrightwood area! A couple of weekends ago, Dr. Miles Kenney, Chuck Houser, and I had the amazing opportunity to fly up to the field trip area and take some incredible aerial photos that will be used for the guidebook cover and road log. What an experience that was! Shout out to Chuck for piloting the flight! If you're interested in attending, registration is set to open at the end of May 2025.

Next up is our May 14th meeting at Sufi Mediterranean Cuisine in Clairemont, which will be our very first joint meeting with the Geo-Institute! Our speaker will be Dr. Sebastian Lobo-Guerrero — a very experienced Geotechnical Project Manager and Laboratory Manager at AGES Inc. in Pittsburgh, Pennsylvania — who will give a presentation on landslide stabilization. Please sign up and pay by May 13th. Walk-ins are welcome, but you'll need to pay with check or cash at the door.
Thanks, and see you all at the May 14th meeting!!

-Heather Reynolds
2025 SDAG President

2025 Upcoming Meetings

DATE	SPEAKER & TOPICS
May 14 (2nd Wednesday)	SDAG/Geo-Institute Joint Meeting: Sebastian Lobo-Guerrero on Landslide Stabilization at Sufi Mediterranean
June 18	SDAG/SCGS Joint Meeting: Dr. Miles Kenney on the controversial Beverly Hills fault at El Adobe in San Juan Capistrano
July 16	Rachel Maxwell on a survey of the Mojave-Sonoran Desert Springs and their sources. *"Is this spring connected to that Aquifer?"*
August 20	Dr. Mario Caputo on "Newly Discovered Tetrapod Bones, Insect Trace Fossils, & Eolian Adhesion Structures- Upper Pennsylvanian Wescogame Formation, Supai Group, Grand Canyon, Arizona
September 26-28	SDAG Annual Field Trip, San Andreas Fault in the Wrightwood area, Transverse Ranges (no meeting this month)
October 15	Todd Wirth on "First report of marine invertebrate megafossils from the Eocene Mount Soledad Fm at Tourmaline Surfing Park"
November 19 SDAG/AEG-IE Joint Meeting	Eldon Gath on "San Joaquin Hills, Santa Ana Mountains, Puente Hills, and the Whittier fault: The final(?) grand theory of Orange County's tectonic geomorphic evolution"
December 17	Traditional Holiday Celebration at the San Diego Natural History Museum with Tom Deméré



Sunbelt Publications
Bringing you quality, award-winning books since 1984

IKONS OF THE MINERAL WORLD

From our Publisher

$61.27 *40% off through SDAG*

Authors: *Donovan, Walter E.Dr. Lavinsky, RobertDr. Wilson, Wendell E.Fuss, Sandor P.Wayne A. Thompson*

Speak with one of our officers on purchasing through SDAG.

Field Notes & Snapshots

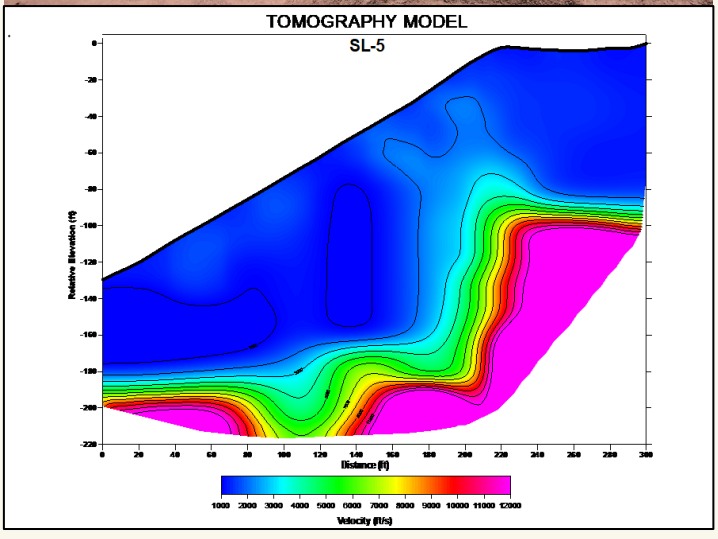
We asked, and you delivered!

We're excited to feature the adventures and experiences of our members. One of the best parts of being a geologist is seeing the amazing things that most people never get to!

This month's theme: Show us your coolest field photos!

Keep an eye out for next month's theme in upcoming emails — and keep those awesome photos coming!

Valley of Fire, Nevada, showing cross-bedding, windcaves, and a bighorn sheep



Seismic refraction survey on the steep slopes of old mine site in Newberry Springs, CA with resulting model

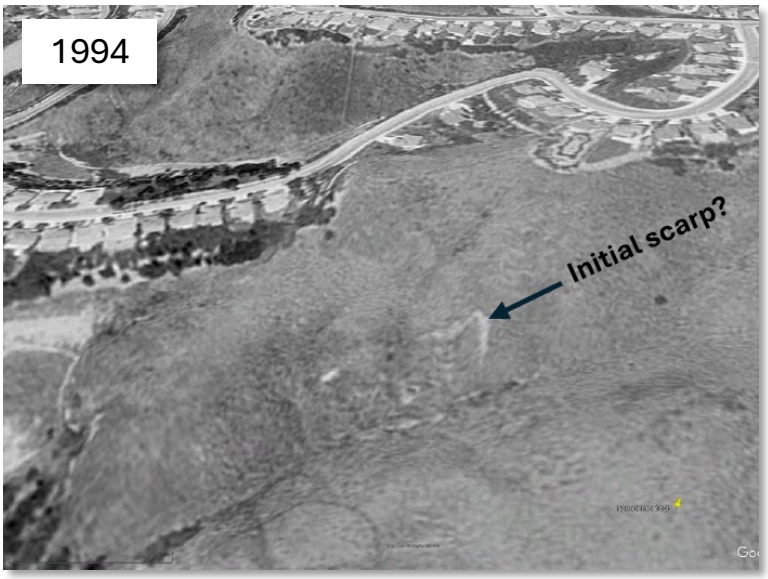
Glacial dropstone in Precambrian Kingston Peak Formation, Death Valley, CA

SDAG | LOCAL SPOTLIGHT

USE OF GOOGLE EARTH HISTORICAL IMAGERY TO EVALUATE LANDSLIDE RISK

Prepared by Mike Hart

Google Earth is a powerful tool that many geologists use as an initial method of research when exploring a new field area. The “Historical Imagery” feature provides a brief look back in time, and with some luck, certain geomorphic events may be visible in the archived imagery. When combined with the oblique 3D landscape view, users can observe phenomena such as the development of active landslides. For example, Mike Hart has documented the evolution of an active landslide in San Clemente from 1994 to the present using these tools.



LOST SHIP IN THE DESERT:

A GEOPHYSICAL INVESTIGATION, THE SALTON SEA, AND A STRING OF COINCIDENCES

By Patrick Lehrmann, PG, PGp (CA), RG (AZ, MO, OR) | March 17, 2025

Steve Stone Searching for The Lost Ship

[Link to Original Post on LinkedIn]

A recent string of coincidences led me to re-visit one of the most fascinating chapters of my career—one that blends history, geology, and an old legend of a lost ship in the desert.

It all started with a phone call. A friend and former employee reached out with some questions about drone magnetics for his upcoming projects. As we discussed the details, the conversation took an unexpected turn—he mentioned a frequent request he received to locate drain tiles in farmland. That's when something clicked. The discussion sparked a realization: I needed to revisit and re-analyze the data from an old project—**The Lost Ship in the Desert**.

WHAT IS THE LOST SHIP IN THE DESERT?

Back in 2019, I was asked to assist **Scott Wolter** from the Travel Channel's *America Unearthed* in investigating the legendary lost ship using geophysical methods. Scott and his team suspected that the legend may represent a buried Viking ship in the deserts of California. As a geologist who values scientific integrity (and who does not personally own a tin foil hat), I was initially hesitant. I'm not one to chase myths, and I wasn't eager to put my professional reputation on the line for what could be pure fiction.

Before agreeing to help with the project, I told the Travel Channel that I needed to research the history of the lost ship to determine its basis in reality. What I found was a fascinating mix of history, legend, and geology. I found multiple versions of the legend, but the most plausible one involved a **shallow-drafted Spanish caravel**, possibly used for pearl diving.

Wolter's team shared a specific story with me: A farmhand named **Elmer Carver** once noticed that his employer, **Nels Jacobsen**, had built a pigsty using unusual wooden beams that seemed to come from a ship. There were even rumors of hidden treasure. This piqued my curiosity. Digging further, I was able to locate Jacobsen's land deed within the county's website and confirm that it matched the site where Wolter's team wanted to conduct a geophysical survey.

1945 Topo Map Overlay of Jacobsen property (in red) and study area in (blue) on Google Earth

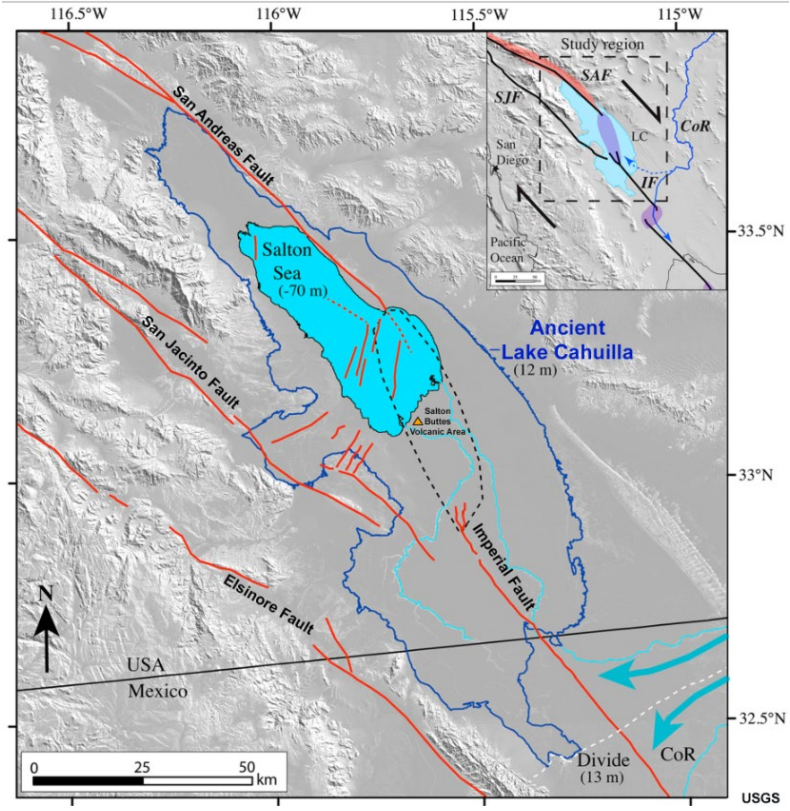
Science Meets Legend Using historic aerial imagery and old topographic maps, I pinpointed the property. The deed confirmed that Nels owned the land in the early 1900s, but a 1945 topographic map suggested that farmhouses once stood on the west side of the street. However, the Travel Channel insisted that their oral history evidence placed the farm and pigsty on the east side. The historical details were intriguing, but the real breakthrough—and the reason I signed on to help—wasn't historical at all. It was **geological**.

As a Wisconsin geologist, I hadn't previously studied the ancient course changes of the **Colorado River**. I quickly learned that the river had shifted roughly every 300 years,

LOST SHIP IN THE DESERT:
A GEOPHYSICAL INVESTIGATION, THE SALTON SEA, AND A STRING OF COINCIDENCES

(Continued)

periodically filling what we now call the **Salton Sea**. Historically, this created **Lake Cahuilla**, a massive freshwater lake that, at its peak, was **265 feet higher** than today's Salton Sea. The last major filling? Around **1726 CE**. This research really did excite me since I learned how to surf on Lake Michigan! How exciting it is to realize that another great lake once existed between Arizona and California.



USGS Map of Salton Sea with high Stand of Historic Lake Cahuilla.

THIS CHANGED EVERYTHING.

One version of the lost ship legend tells of **Spanish explorer Juan de Iturbe**, who, in **1615**, sailed a pearl-harvesting caravel up the Gulf of California. The caravel was a ship design first made by the Portuguese that could navigate shallow waters. According to the story, a tidal bore swept his ship into Lake Cahuilla, leaving him stranded. Unable to return to sea, he abandoned the ship, supposedly leaving behind a fortune in black pearls.

THE GEOPHYSICAL SURVEY

I recruited my colleague and good friend **Steve Stone** to help collect **magnetic and electromagnetic (EM) data** ahead of filming. We wanted to ensure efficient data collection—without a production crew hovering over our shoulders.

Interestingly, our survey identified **several magnetic anomalies**, suggesting promising excavation targets for

Magnetic Data Collection

the show. But here's where the coincidence comes full circle. After that recent phone call about **drain tiles**, I realized we had almost certainly detected **backfilled trenches** associated with old drainage systems. While the tiles themselves weren't metallic, the magnetic data likely picked up subtle soil disturbances from the trenching process.

Filming the episode with Scott Wolter

If you're wondering if we found the lost ship, well… you'll have to watch the episode! Every so often, it airs again, and I inevitably get a text from a friend saying, *"Hey, I just saw you on TV!"* Definitely worth a watch.

ANOTHER COINCIDENCE: THE EPAZ WATER LAW TALK

As I was preparing to post about this realization, another coincidence happened.

At the **Environmental Professionals of Arizona (EPAZ)** conference in Phoenix, I attended a talk by an **Arizona**

LOST SHIP IN THE DESERT:
A GEOPHYSICAL INVESTIGATION, THE SALTON SEA, AND A STRING OF COINCIDENCES

(Continued)

State University water law professor on the ongoing **Arizona-California water dispute** over Colorado River rights. He mentioned the **Salton Sea**—getting a laugh about its failed attempt to become a resort destination—but left out the real story of how it was created.

The modern **Salton Sea wasn't planned**. In **1905**, farmers built an irrigation diversion which spiraled out of control, allowing the Colorado River to flood unchecked into the basin for nearly two years. This formed the Salton Sea, but it was nothing compared to the original **Lake Cahuilla**, which had naturally filled and evaporated **at least eight times** in the past **2,000 years**.

FULL CIRCLE: A FIELD TRIP TO LAKE CAHUILLA

John Peterson presenting the former beach to San Diego Association of Geologists.

Six days after that EPAZ talk, the **San Diego Association of Geologists** hosted a **field trip to Lake Cahuilla's high-water mark**! Led by **John Peterson**, we examined geological evidence and archaeological sites—like **ancient fish traps used by Native American tribes** who once relied on this massive lake.

The **Cahuilla, Kumeyaay, and Cocopah** tribes thrived on its shores. But due to modern dams and water management, the Colorado River can no longer naturally refill what was once **one of North America's largest freshwater lakes**.

THE POWER OF COINCIDENCE

As the field trip wrapped up, a few geologists invited me to share my story. I recounted my experience on *America Unearthed*—my brief **15 minutes of TV archaeology fame**.

While the legend of the Lost Ship in the Desert may remain just that—a **legend**—the **geological and historical context is real**. And sometimes, a little research turns

Fish weir once in the shallow waters of Lake Cahuilla

High-water line and travertine on the boulders. The water would have been up to our necks.

myths into valuable lessons about our **landscapes, history, and the power of unexpected connections**.

Have you ever experienced a professional "full-circle" moment like this? I'd love to hear your stories! Basically, this is just a sales pitch to let you know if you have the need to locate drain tiles, we can do that 😊.
[END]

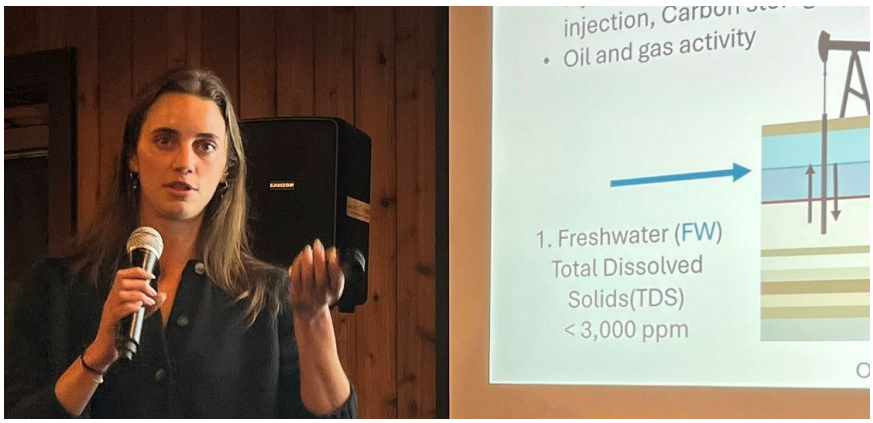
My time at the lectern

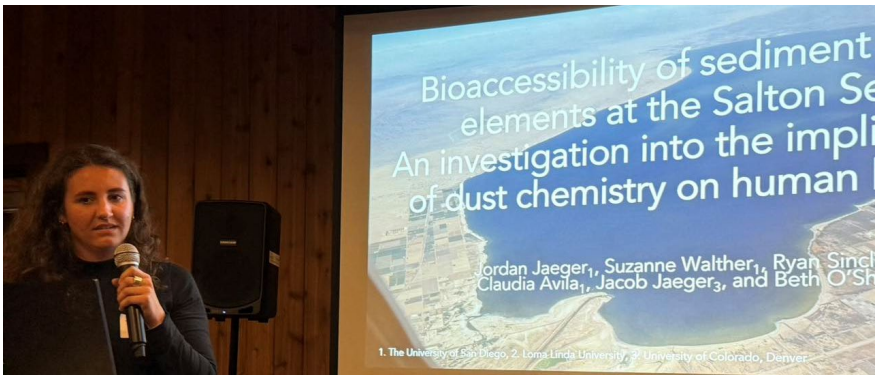
SDAG | April Meeting Recap

Cheers!

To our student presenters, Nick, Emily, and Jordan — you guys rock! Thank you for your amazing and well-presented work. Typically, our student speaker meetings have smaller attendance, but you drew a crowd — we even ran out of seats!

A total of 60 people attended the April meeting to support you and your work. Thank you to all the members and family members of each student who came. Your presence and contributions to SDAG help support incredible students like these!

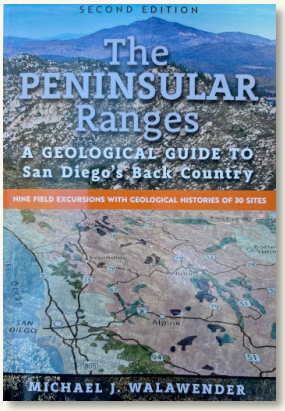




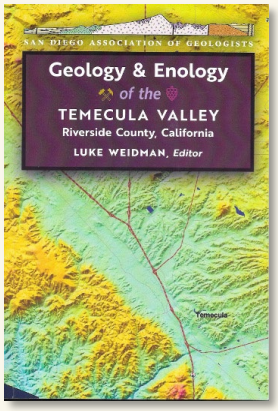
SDAG | Publications

The SDAG publication page includes links to in stock books we sell thru Sunbelt Publications, out of stock books we sell thru Google Play Books, and out of stock books that we provide free as scanned copies to download.

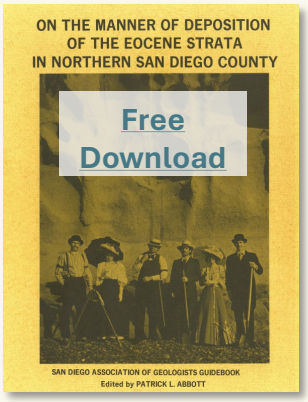
FIELD TRIP GUIDES & RESEARCH REPORTS



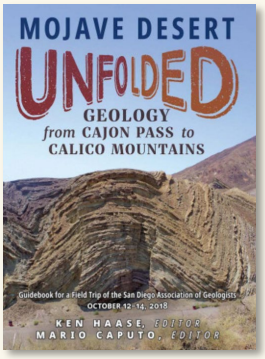
The Peninsular Ranges: A Geological Guide to San Diego's Back Country 2nd Edition



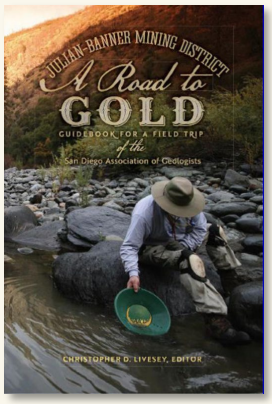
Geology & Enology of the Temecula Valley Riverside County, California 2nd Edition



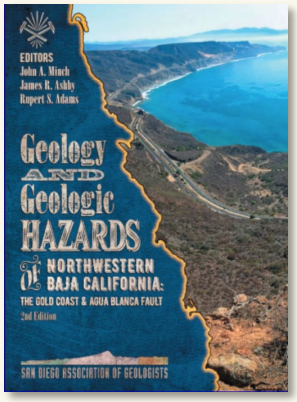
On the Manner of Deposition of the Eocene Strata in Northern San Diego



Mojave Desert Unfolded Geology From Cajon Pass to Calico Mountains



Julian-Banner Mining District: A Road to Gold



Geology and Geologic Hazards of Northwestern Baja California Gold Coast & the Agua Blanca Fault, 2ed

FREE GUIDES AVAILABLE FOR DOWNLOAD

- 1972 Otay Mesa
- 1977 SW San Diego
- 1978 Coronado Islands, BC
- 1979 San Diego Region
- 1987 Julian Gold
- 1981 Geologic Investigations of the San Diego Coastal Plain
- 1982 Geologic Studies in San Diego
- 1985 Eocene in San Diego
- 1989 Fault Features: La Jolla - Ensenada

2025 Corporate Sponsors

SAN DIEGO ASSOCIATION OF GEOLOGISTS

DIAMOND SPONSORS $1000+

Link to our Sponsors Page

Renew or become a new 2025 SDAG Sponsor

Minimum $100 includes annual Membership: SPONSOR FORM

Kuper Consulting LLC
tom@kupercon.com
dorian@kupercon.com

H&P Mobile Geochemistry Inc.

ANONYMOUS SPONSOR

GEOCON

$1500 ANONYMOUS SPONSOR

Dr. Pat Abbott
To Promote
Geologic Knowledge

$10,000 Anonymous Sponsor for the 2nd edition of the 2010 Geology and Lore of Northern Anza-Borrego Desert Region

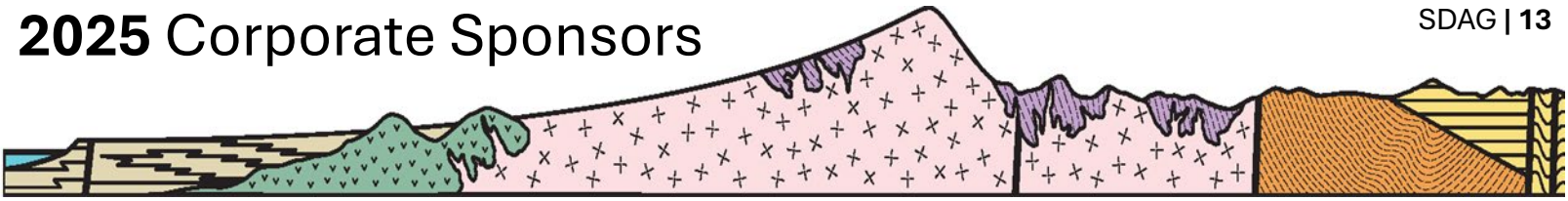
RUBY SPONSORS $500

TREVET
CIVIL & ENVIRONMENTAL CONSULTANTS

ENGEO
Expect Excellence

PROJECT X CORROSION ENGINEERING
Corrosion Control – Soil & Forensics Lab

2025 Corporate Sponsors



SAN DIEGO ASSOCIATION OF GEOLOGISTS

EMERALD SPONSORS $100

Dave Bloom
Gerald Schiller
Todd Wirths
Dr. Monte Marshall
SDSU Geology Professor Emeritus
Larry Cann
Joan & Dave Kimbrough
Joe Corones
Greg Cranham
Consulting Geologist
Dr. Vic Camp
John Hoobs
Randy Wagner
Anonymous Sponsor
Tom Lamb
Kip Hering
Lowell E. & Diana Lindsay
David & Jan Steller
Dr. Anne Sturz
Carole L. Ziegler
Sue Tanges
Scott Snyder
Rob Hawk
Mary Walke
John Teasley
Chris Livesey- Geotek
Stan Helenschmidt
Helenschmidt Geotechnical, Inc.
San Diego Car Accident Attorneys
Carolyn Glockhoff
Caro-Lion Enterprise
Tod Clark - Pacific Drilling Co.
Monte & Diane Murbach
Murbach Geotech
Eldon Gath - Earth Consultants
George H. Ramos Jr. & Associates
GEI - Geotechnical Exploration Inc.
Cari Gomes- Pinao Consulting
Dr. Margaret R. Eggers
Eggers Environmental, Inc,
Phil Farquharson- Geology Guy
Christian Wheeler
Christian Wheeler Engineering
Patrick Lehrmann
Advantage Geophysics, Inc.
Virtual Latinos
Starbucks Coffee Company
Cardiff, CA
Vanessa Nicole Jewels
Mark Holt - Discovering Lost America
Jeff Hull – Verdantas