



The Explorers Club Northern California Chapter

Also available at our web site: <http://www.explorersnorca.org>

HOLIDAY PARTY
December 15, 2019
from 4 to 8 PM

***FELLOWS, MEMBERS, SIRDARS &
FRIENDS OF THE NORTHERN CALIFORNIA
CHAPTER OF THE EXPLORERS CLUB***

JOIN US ON DECEMBER 15TH FOR OUR 2019 HOLIDAY PARTY

As 2019 winds down to a close, we have much to remember, much for which to be thankful and much to anticipate for the years ahead. We hope many of you can join us at the home of Rick and Aldeana Saber for a time of joy and celebration, to enjoy time with those who are present and to remember those who cannot join us.

We will provide food and beverages and some surprises for your general entertainment. Additions to the party bounty will be welcome, but let Anna Freitas know what you'll be bringing when you RSVP so we can avoid having too many duplicates.

December 15, 2019, from 4 to 8 PM
150 Indian Hills Drive, Novato, CA

Please RSVP to Anna Freitas, treasurer@explorersnorca.org or 925-457-6424

A \$25 per person donation at the door will be most appreciated.

By Mail to: Anna Freitas, 161 Camino Posada, Walnut Creek, CA 94595

Sign up via PayPal at <http://www.explorersnorca.org/>.

We hope to see everyone on December 15th.

Rick and Aldeana Saber and the Chapter Officers and Directors

Lesley Ewing — Chair
Tom Dolan — Vice Chair
Anna Freitas — Treasurer
Joyce Chang — Secretary
Anders Jepsen — Newsletter Editor
Mike Diggles -- Web Master

Steve Smith, Past Chair
Joan Boothe, Past Chair
Lee Langan, Past Chair
Alan Nichols, Past Chair
Rick Saber, Past Chair
Bob Schmieder, Past Chair
Jim Hurson, Elected Director
Sandra Cook, Elected Director
Paul Freitas, Elected Director

DRILLING INTO SEA MOUNTS ON THE OCEAN FLOOR CHASING THE ELUSIVE SERPENTINE OF THE SUBDUCTION ZONE

November 22, 2019, Dr. Barbara Bekins, USGS

Have you ever wondered how the geologists have figured out that the continents are part of the earth's crust, pieces that are drifting around, bumping into each other and generally making a mess out of the boundaries between them? They drill holes into the bottom of the ocean at special places to see what's there. Of course that leads to another question: if they have to pull their drill pipes up to change the bits, how do they get back in the hole they're drilling.

All this was revealed in a most interesting talk at the November meeting of the Chapter presented by Dr. Barbara

Bekins of the United States Geological Survey. Ocean bottom drillers set up a drill hole for re-entry by putting a funnel at its mouth so that there is a guide to steer the pipe with the new bit back into the old hole to keep drilling. In this way, scientists can find out what the rocks are below the ocean floor. They choose to

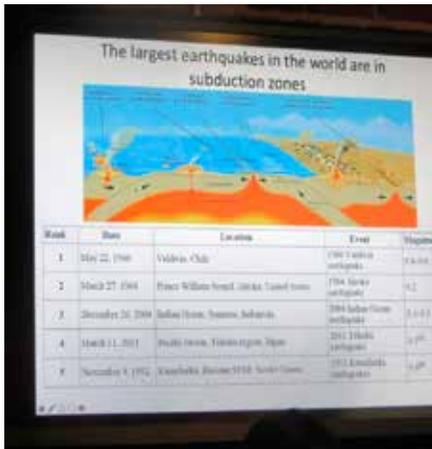
indicator of that high pressure is the product, serpentinite, that is found along the fault. That serpentinite is not only a product of the sliding friction, it also serves as a lubricant between the two layers, the one subducting below the other. It is those samples that come out of the core sampling barrel that show the changes in the rock types along the fault plane that is the zone of subduction of one continent being covered over by another.



During December 2016 and January 2017 the Integrated Ocean Discovery Program drilled into three Mariana seamounts. On board were 31 invited scientists from 12 countries, including geologists, microbiologists, geochemists and one lone hydrologist. Dr. Bekins, a US Geological Survey scientist, was a member of the exploratory team. In addition to describing the science, she also spoke about the positive experience of working in close quarters with fellow scientists on this exciting expedition.

locate the holes on sea mounts, shallower volcano-like projections that have grown by the pressures from below pushing up rocks that formed along the boundary between different continental rocks.

That pressure alters those rocks as they scrape along the fault line; one



Rick Saber, Lee Langan, Chair Lesley Ewing



Joan and Don Bekins with Vice Chair Tom Dolan



Barbara Berg, Trish Gorman



Elaine Dvorak, Sue Estey



Speaker Barbara Bekins

In Memorium: Sheldon Breiner PhD From New York Times Article November 1, 2019

He developed the techniques he used to help locate sunken submarines and enormous stone heads, as well as early applications for artificial intelligence. geophysicist Sheldon Breiner doing field work in 1964. He developed new types of magnetometers, which can detect things under ground or water.

Ever since the compass was invented, perhaps about 2,000 years ago, humans have used Earth's magnetic field to guide them. Many ages later, Sheldon Breiner devised ways to use magnetism to guide him to things that might otherwise never have been found — like sunken ships, a lost city and colossal basalt heads buried underground.

Dr. Breiner, a geophysicist, inventor and serial entrepreneur, started a company called Geometrics in 1969 that built sophisticated magnetometers, which measure magnetic fields. (A compass is probably the most simple example of one.) He then discovered how to use them to detect objects by observing the way the objects affect the magnetic fields that surround them.

Dr. Breiner had started employing rubidium magnetometers to detect seismic activity along the San Andreas Fault when he was studying geophysics at Stanford University. In time he harnessed magnetometers to search for mineral and oil deposits deep underground; find hidden weapons; locate skiers lost in avalanches; and help the government track down sunken submarines and a hydrogen bomb that had fallen into the ocean after a B-52 bomber collided with a refueling jet over Spain in 1966.

Dr. Breiner used his expertise with magnetometers to help archaeological expeditions around the world peer deep below ground or water. He joined researchers looking for the wreckage of galleons off the coasts of California and Mexico. He helped discover buried ruins that many archaeologists believe were part of Sybaris, an ancient city in Southern Italy that inspired the word "sybarite" because of the hedonism of its inhabitants.

On an expedition to San Lorenzo Tenochtitlan, a group of archaeological sites in southern Mexico, Dr. Breiner discovered scores of ancient artifacts, including two enormous basalt heads, one of which weighed about 10 tons, made during the Olmec civilization, which thrived as early as 1200 B.C.E. and vanished around 400 B.C.E. Over several decades, Dr. Breiner returned to Mexico to keep searching. An article in The New York Times about an expedition to Laguna de los Cerros in 1998 described how he used a \$25,000 cesium magnetometer attached to a pole to investigate an archaeological site. "Carrying the pole, Dr. Breiner systematically marched through dense tick- and snake-infested brush, building a record of the magnetic variations at each point in Laguna de los Cerros," the article said. "An assistant who wielded a machete walked in front of him, allowing the survey to be made in an array of straight lines." Dr. Breiner sold Geometrics to EG & G, a technology company and military contractor, in 1976, a transaction eventually worth about \$45 million.

In 1989, Dr. Breiner helped found Quorum Software Systems, which built software that allowed Apple applications to work with hardware made by other companies. A co-founder, R. Martin Chavez, devised a way for different operating systems to communicate with commands from Apple's operating system without relying on Apple's source code. Apple initially approved of Quorum and even certified the company as a developer, according to a 1992 article in Macworld magazine by the technology journalist Steven Levy. But before Quorum released its software in 1992, Apple wrote a letter claiming that Quorum had infringed on its intellectual property, though it did not specify how. Dr. Breiner knew that the letter and the threat of a lawsuit from Apple could ruin Quorum, which was seeking new funding. Before Apple could sue, Dr. Breiner filed a suit of his own, calling for a judgment that Quorum's products did not violate Apple's copyrights. The two sides settled, and Quorum was allowed to continue developing its software.

Sheldon Breiner was born on Oct. 23, 1936, in Milwaukee to James and Fannie (Appel) Breiner. His parents, Jewish immigrants from Eastern Europe, later moved the family to St. Louis, where they owned a bakery. After graduating from University City High School in St. Louis in 1955, he went to Stanford University, which had offered to pay for his education if he studied earth sciences. He earned bachelor's and master's degrees before completing his doctorate in the field at Stanford in 1967.

While at Stanford he met Phyllis Farrington, who goes by Mimi. They married in 1962. In addition to her and his daughter, he is survived by a son, David; a brother, Richard; and five grandchildren. Another son, Aaron, died in 1966.

Dr. Breiner, who also founded companies that developed early applications for artificial intelligence and cross-platform software, died on Oct. 9 at his home in Portola Valley, Calif., near Palo Alto. He was 82. His death was confirmed by his daughter, Michelle Driskill-Smith, who did not specify the cause.

**HONOR ROLL
Paid Up Dues 2019**

MEMBERS

Alexander, Jim
Alexander, Linda
Allan, James
Amaral, Julia
Bekins, Joan
Berg, Barbara
Bibas, Bonnie
Blake, Rick
Bolt, Kendra
Boothe, Joan
Chang, Joyce
Chase, H. Keith
Cook, Sandra
Cooper, Alan
Day, Peggy
Dehmel, Rick
Diggles, Mike
Dolan, Tom
Durbin, Thomas
Dutcher, Susan
Dvorak, Don
Dvorak, Elaine
Elkus, Patty
Elkus, Rick
Ellis, Scott
Estey, Sue
Eustace, Alan
Ewing, Lesley
Finney, Luke
Ford, Arthur
Fox, Susan
Freitas, Anna
Freitas, Paul
Friedman, James
Hemming, Peter
Hermaly, Brenden
Higgins, Robert
Holmes, Robert
Horne, William
Hurson, Jim
Hurson, Von
Hutchison, Alan
Isherwood, William
Jepsen, Anders
Klein, Ronald
Kvenvolden, Keith
Langan, Lee
Lapham, Ellen
Lidicker, William
MacDonald, Robert
Mangus, Rodney
McCown, George
McInturf, Alexandra
Nichols, Alan
Nichols-Rygh, Becky
Prigoff, James
Ross, Sandy
Saber, Rick
Schmieder, Robert
Smith, Steve
Straka, Bill
Tarter, Jill
Velivela, Vignan
Weil, James
Wilken, John
Winter, Mordechaj
Wren, Sherry

SIRDARS

Baye, Karin
Blake, Maggi
Blumberg, Marion
Boothe, Barry
Brandt, Jim
Clever, Karoli
Cohn, Lawrence
Coolidge, Oliver
Crowder, Wendy
Durighello, Joy
Fish, Sandra
Friedman, Christen
Gill, Naveet
Gorenberg, Peter
Hirzel, David
Hutchison, Ann
Isaac, Nancy
Jepsen, Kathy
Johnson, Fred
Judd, Kathy
Kidd, Joe
Langan, Karine
Longo-Cohn, Mary
Mani, Cassandra
McLoughlin, Liz
McNulty, Edward
Messerly, Edward
Nikas, Jim
O'Keeffe, Bonny
Patterson, Tom
Pennathur, Sudha
Saber, Aldeana
Schmieder, Kay
Smith, Koda
Straka, Barbara
Townsend, Tiffany
Van Austen, Bob
Van Austen, Judy
Weiman, Mark
Yoder, Karl

FROM THE CHAIR

As we come to the end of 2019, on behalf of all the Officers and Directors of the Northern California Chapter of The Explorers Club, I want to extend to all the members of our Chapter our very best wishes for 2020. We thank you for your support, interest and enthusiasm that has made our chapter the exciting activity that it has been this past year..

We look forward to seeing many of you at our Annual Holiday Party on Sunday, December 15, information for which is found on page 1.

. Lesley Ewing, FN'93



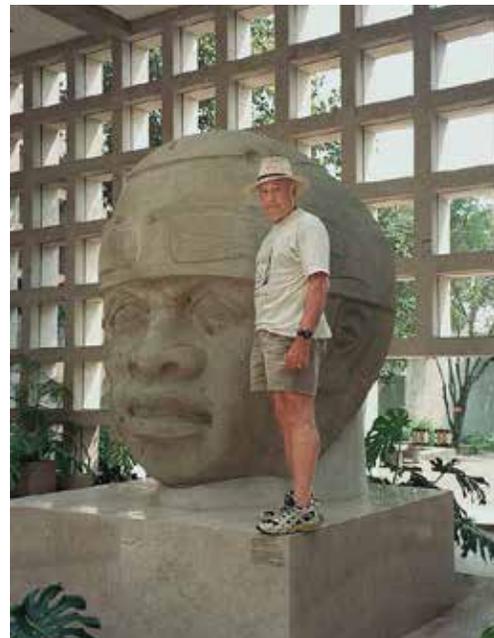
Sheldon Breiner FE'78 (1936-2019)

Our Chapter and the world has lost an explorer with significant contributions in the development of using magnetics in the search for everything from buried ski victims, huge Olmec monoliths to nuclear bombs lost at sea. Shelly was a close friend since our days at Stanford and the beginnings of using quantum physics to create new ways to measure the Earth's magnetic field when at one of Silicon Valley's early eponymous companies, Varian Associates. He went on, receiving his doctorate studying earthquake prediction at Stanford, to become the leading expert in magnetic search, founding Geometrics in 1969, as a successful manufacturer of magnetometers. As a long-time resident of Portola Valley he and his wife Mimi, co-founded the Peninsula Open Space Trust.

Sheldon worked with our late chapter member Edward van der Porten to discover the Manila galleon San Felipe off the coast of Baja, a find which has resulted in a treasure trove of 16th century artifacts. In 2014, he received the prestigious Lowell Thomas Award from The Explorers Club for his Imagination in Exploration.

Sheldon was an effervescent scientist who could capture the enthusiasm of individuals or audiences, young students to oldsters. He went on to found the artificial intelligence venture Syntelligence in 1976 and Quorum Software Systems in 1989. One of his most recent interests was researching the potential of using magnetics to discover and benefit Alzheimer control for potential or existing patients. Throughout his life he was an endearing family man, a devoted alumni to Stanford and an optimist filled with the joy of living. He was also a remarkable photographer who documented his world travels with skill. Nature took him away too soon.

Lee Langan, MED'99



Dr. Breiner in 1998 with one of the Olmec heads he helped discover. Known as Monument 61, it was on display in an anthropological museum in Jalapa, Mexico. John Markoff/The New York Times

December 2019 Issue
Northern California Chapter
Established 1973



CHAPTER OFFICERS & TEAM

Chair: Lesley Ewing FN'93
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 510-459-0858
 Vice Chair: Tom Dolan MN'14
 tdolan@outdoorstorms.com
 Secretary: Joyce Chang MN'17
 Treasurer: Anna Freitas MN'17
 Treasurer@explorersnorca.org
 Webmaster: Mike Diggles FN'92
 Newsletter: Anders Jepsen FN'03
 ajviking@aol.com
 925-322-8893

Chapter Calendar of Events

(Venues are identified as soon as known.)

2019
 December 15 Holiday Party
 Home of Rick and Aldeana Saber
2020
 January 24 Dolan
 Jo Anne Van Tiburg
2018
 March 30 Kimberley Chambers
 Swimming With Sharks Before Breakfast . Dolan
 April 27 Alan Eustace
 The Stratospheric Jump Dolan
 May 25 3 Term EC Members
 Term Members Research/Annual mtg . . Dolan
 July 21 Chapter Picnic in Novato
 September 21. Michelle Trautwein
 Meet Your Face Mites: Dolan
 October 26 Sir Richard Feachem
 Shrinking the World Malaria Map Dolan
 November 30 Leon McCarron
 Exploration by Walking Dolan
 December 16. Holiday Party
 Home of Rick and Aldeana Saber
2019
 January 25 Pat Scannon
 Recent Discoveries Dolan
 February 22 James Nestor
 Outdoor adventure. Dolan
 March 22. Paul Saffo/Richard Weise
 Dynamics of Change. . . . Aquarium of the Bay
 April 26 David McGuire
 Swimming with Sharks. Dolan
 May 31 ANNUAL MEEETING plus . . Dr. Paul Hunt
 Hannibal". Dolan
 June 9: Picnic
 Tilden Park
 September 27 Robert Anderson
 Material Science & Forensic Engineering Creola
 October 25. Michelle Westmorland
 Headhunters Revisited. Dolan
 November 22 Dr. Barbara Bekins
 Windows into Subduction Dolan

CHAPTER DIRECTORS

Directors (Past Chairs)

Joan Boothe MN'07
 Lesley Ewing FN'93
 Lee Langan FN'99
 Anders Jepsen FN'03

Alan Nichols FN'84
 Bob Schmieder FE'86
 Rick Saber MN'01
 Stephen Smith FN'96

Elected Directors

Jim Hurson MN'10
 Sandra Cook MN'16
 Paul Freitas MN'10

Chapter Email Addresses and Chapter Phone Number

chair@explorersnorca.org
 vicechair@explorersnorca.org

treasurer@explorersnorca.org
 secretary@explorersnorca.org

webmaster@explorersnorca.org
 fieldtrips@explorersnorca.org

Late arrival phone number for Monthly meeting at the Dolan Law Center
 The door will be locked and unattended after 7:15 p.m.
 Chapter Phone: 415.236.3459 (for message or locked door entry).

MEETING VIDEOS

Our Chapter now records all of our dinner meetings. Videos of recent speakers' presentations are available on the Chapter Website.

WANT TO GET INVOLVED IN THE INNER WORKINGS OF THE CHAPTER?

There are lots of tasks that come up during the course of a year: speakers, meetings, field trips, membership, newsletter, etc. A good place to get started is by volunteering to serve on a committee. Talk to any of the Chapter Officers or Directors for more information.

EXPLORATION

A FIRST EXHIBITION OF PHILO-PHOTOGRAPHY

If you haven't yet seen Alan Nichol's exhibition of Photos and Philosophy, there's still time. It's on the walls of the Tamalpais Residence in Greenbrae until January 20, 2020.

501 Via Casitas, Greenbrae, CA 94904

**ANNUAL HOLIDAY PARTY!
 DECEMBER 15, 2019**

CHECK OUT FRONT PAGE FOR DETAILS.