



Everglades Geological Society

BULLETIN

Volume 5, Number 6

February 1999

Meeting This Month: Tuesday, February 16, 1999
6:00 P.M. at the Morgan House Restaurant & Trading Post
(social hour starts at 5:00)

Speaker: Dr. Sarah E. Kruse
Topic: Seismic Surveys and Ground Penetrating Radar
Studies in South Florida
(abstract on page 3)

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This Month's Speaker

Everglades Geological Society
P.O. Box 61684
Fort Myers, FL 33906

The Everglades 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.

The Bulletin is a monthly (September-June) publication of the Everglades Geological Society, Inc.

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gordonk@peganet.com

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FAT TUESDAY
FEBRUARY 16, 1999

GeoCollectives

Here is a listing of collective terms relative to the earth sciences. This collection of collectives were contributed to a USGS newsletters by Wally Hansen and Butch Grossman. Contributions to the list will gladly be accepted.

- A cross section of geologists
- A trickle (or a flood) of hydrologists
- A rumbling of seismologists
- An extrusion of volcanologists
- A species of paleontologists
- An era of chronologists
- A surge of oceanographers
- A gusher of petroleum geologists
- A retort of geochemists

Seismic Surveys and Ground Penetrating Radar Studies in South Florida

Sarah E. Kruse, PhD.
Department of Geology
University of South Florida
Tampa, Florida

ABSTRACT

Field experiments show ground penetrating radar (GPR) can be used to image shallow carbonate stratigraphy effectively in a variety of settings. GPR mapping through prairie, cypress swamp, and hardwood hammock in the Fakahatchee Strand State Preserve resolves variations in thickness and structure of cap rock and shallow limestone to ~3m depth. This method may be useful for testing theories of cap rock-vegetation relationships, as well as for mapping depth to cap rock.

GPR profiling across NW-SE trending ridges in Everglades National Park resolves more deeply buried (~4m) limestone discontinuity surfaces that record subaerial exposure. The attitude of the Q4 discontinuity surface suggests that the process responsible for the formation of these enigmatic ridges predates the Q4 exposure.

A pilot seismic survey was run in spring of 1998 to determine the feasibility of land-based seismic surveys for resolution of structure within the surficial aquifer and of the top of the Arcadia Formation. Three short test profiles, from 200 to 600 m in length, were run with a hammer source and 24-channel seismograph near Turner River Road within Big Cypress National Preserve. Several strong reflections were recorded between ~90 and 350 ms two-way travel time. These reflections are probably from horizons below the depth of the 200 ft nearby Bass corehole, so no direct stratigraphic correlations could be made. We expect that one of these reflecting horizons represents the top of the Arcadia Formation, which should have a strong acoustic response. Additional seismic surveys will be conducted in the spring of 1999.

BIOGRAPHY

Dr. Underhill is Assistant Professor at the University of South Florida. She received her B.Sc. in geology and physics from the University of Wisconsin in Madison, and her Ph. D in Geophysics from MIT.

Sarah did her thesis work on tectonics and large scale deformation of the lithosphere. She has been involved in “environmental geophysics” for the past 10 years and is currently working on the potential for using attenuation of GPR signals to map freshwater/saltwater interfaces.

CALENDAR

1999

February 7-10, International Society of Explosives Engineers 25th Annual Conference on Explosives and Blasting Technique, Nashville, Tennessee. Information: Lynn Mangol, 29100 Aurora Rd., Cleveland, OH 44139, (440) 349-4004, fax 440-349-3788, <http://www.isee.org>.

March 1-3, 13th International Conference and Workshops on Applied Remote Sensing, Vancouver, British Columbia. Information: ERIM Geologic Conferences, Box 134008, Ann Arbor, MI 48114-4008, (734) 994-1200, ext. 3234, fax 734-994-5123, wallman@erim-int.com, <http://www.erim-int.com/CONF/conf.html>.

Mar. 1-4 Society for Mining, Metallurgy, and Exploration, ann. mtg., Denver, Colo. (SME, 8307 Shaffer Parkway, P.O. Box 625002, Littleton, Colo. 80162-5002. Phone: 303/973-9550. E-mail: smenet@aol.com)

March 25-26, GSA Southeast Section Meeting, Athens Classic Center, Athens, Georgia. Submit completed abstracts to Michael F. Roden, Dept. of Geology, University of Georgia, Athens, GA 30602-2501, (706) 542-2416, mroden@uga.cc.uga.edu. (Abstract deadline: December 14, 1998.)

Mar. 25-28 National Earth Science Teachers Association, ann. mtg., Boston, Mass. (NESTA, 2000 Florida Ave., N.W., Washington, D.C. 20009. Phone: 202/462-6910. Fax: 202/328-0566. E-mail: fireton@kosmos.agu.org)

April 10-14, 7th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, Harrisburg, Pennsylvania. Information: Gayle Herring, P. E. LaMoreaux and Associates, Inc., 106 Administration Rd., Oak Ridge, TN 37830, (423) 483-7483, fax 423-483-7639, pelaor@usit.net, <http://www.uakron.edu/geology/karstwaters/7th.html>.

Apr. 11-14 American Association of Petroleum Geologists, ann. mtg., San Antonio, Texas. (AAPG Conventions Dept., P.O. Box 979, Tulsa, Okla. 74101-0979. Phone: 918/560-2679. Fax: 918/560-2684)

May 26-28, Geological Association of Canada-Mineralogical Association of Canada Joint Annual Meeting, Sudbury, Ontario. Information: P. Copper, Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario P3E 2C6, Canada, (705) 675-1151, ext. 2267, fax 705-675-4898,

June 20-24, Coastal Sediments '99: Scales of Coastal Sediment Motion and Geomorphic Change, Long Island, New York. Information: Nicholas C. Kraus, USAE Waterways Experiment Station, Coastal & Hydraulics Laboratory (CEWES-CC), 3909 Halls Ferry Road, Vicksburg, MS 39180-6199, (601) 634-2016, <http://www.coastalsediments.org>.

June 21-24, Fourth International Airborne Remote Sensing Conference and Exhibition, Westin Hotel, Ottawa, Ontario. Information: ERIM Airborne Conferences, Box 134008, Ann Arbor, MI 48113-1008, (734) 994-1200, ext. 3234, fax 734-994-5123, wallman@erim-int.com, <http://www.erim-int.com/CONF/conf.html>.

June 21-24, International Gemological Symposium, San Diego,

Oct. 5-8 American Institute of Professional Geologists, ann. mtg., Anchorage, Alaska. (AIPG, Suite 103, 7828 Vance Dr., Arvada, Colo. 80003. Phone: 303/431-0831. Fax: 303/431-1332. E-mail: aipg@netcom.com)

Oct. 25-28 Geological Society of America, ann. mtg., Denver, Colo. (Becky Martin, GSA Meetings Department, Box 9140, Boulder, Colo. 80301-9140. Phone: 303/447-2020, ext. 164. Fax: 303/447-1133)

2000

Apr. 6-9 National Earth Science Teachers Association, ann. mtg., Orlando, Fla. (NESTA, 2000 Florida Ave., N.W., Washington, D.C. 20009. Phone: 202/462-6910. Fax: 202/328-0566. E-mail: fireton@kosmos.agu.org)

Apr. 16-19 American Association of Petroleum Geologists, ann. mtg., New Orleans, La. (AAPG, 1444 So. Boulder Ave., P.O. Box 979, Tulsa, Okla. 74101-0979. Phone: 918/560-2639. Fax: 918/560-2626)

May 7-11 Salt Symposium, The Hague, The Netherlands. (Secretariat Organizing Committee 8th World Salt Symposium, PO Box 25, 7550 GC Hengelo Ov, The Netherlands. Phone: 31 74 2443908. Fax: 31 74 2443272. E-mail: Salt.2000@inter.NL.net)

Oct. 11-15 American Institute of Professional Geologists, ann. mtg., Milwaukee, Wis. (AIPG, Suite 103, 7828 Vance Dr., Arvada, Colo. 80003. Phone: 303/431-0831. Fax: 303/431-1332. E-mail: aipg@netcom.com)

Nov. 13-16 Geological Society of America, ann. mtg., Reno, Nev. (GSA Meetings, Box 9140, Boulder, Colo. 80301-9140. Phone: 303/447- 2020, ext. 164. Fax: 303/447-1133)

EGS MEETING CALENDAR 1999

February 16 Sarah Kruse

March 16 Don McNeill

April 20 Steve Bortone

May 18 Hugh Mitchell Tapping