

On the Rocks



A Newsletter of the Michigan Basin Geological Society

2003-2004 Number 7

www.mbgs.org

February 2004

EVENTS

February 4, 2004: AAPG Distinguished Lecturer; 4:00pm, 1118 Rood Hall, Western Michigan University, Kalamazoo, Michigan: Dr. Luis Pomar (Universitat de les Illes Balears, Majorca, Spain) on: "Reservoir-scale Heterogeneity of Carbonate Platforms - Some Constraints from the Miocene of the Balearic Islands"

February 11, 2003: MBGS Meeting The speaker is Dr. Steven R. May, AAPG Distinguished Lecturer and his topic is: "Visualization and Volume Interpretation in Geoscience: 3-D Seismic and Beyond"

April 18-21, 2004: AAPG Annual Meeting, "Embrace the Future – Celebrate the Past" at the Dallas Convention Center, Dallas, Texas; for more information go online at www.aapg.org/meetings/dallas04. The pre-registration deadline is March 17, 2004.

May 2004: Conference/Field Excursion Gaylord, Michigan. For more information see the MBGS website at: www.mbgs.org.

September 26-29, 2004: Society of Petroleum Engineers annual meeting Houston, Texas

October 3-6, 2004: 33rd Annual AAPG Eastern Section Meeting Ramada Plaza Hotel Columbus, Ohio. The theme of this year's meeting is "Still Economic after all these Years."

A Few Good Men

Please consider running for office as part of the 2004-2005 MBGS Executive Committee. The Society is only as good as its members and in order to remain vibrant the MBGS needs active members to provide leadership. The elected officers are President, Vice-President, Secretary, Treasurer, and Business Manager. This year we are also looking for a Newsletter Editor. Contact any officer if you are interested.

MBGS Meeting

February 11, 2004

Location: Holiday Inn (South)
6820 S. Cedar St., Lansing, MI.

Schedule: 4:30-5:30 PM Executive Committee Meeting
5:30-6:15 PM Cash Bar
6:15-7:15 PM Dinner
Presentation after Dinner

Cost \$25.00/member \$10.00 Student (includes dinner)

Topic: "Visualization and Volume Interpretation in
Geoscience: 3-D Seismic and Beyond"

By

Dr. Steven R. May, AAPG Distinguished Lecturer

MBGS Dinner Meeting Reservation

Name _____ (Please circle Yes if a Mentor) Yes

Number attending _____ Society _____

Enclosed Registration Fee _____

Please make your check out to the MBGS by February 9, 2004 and send to:

Ms. Pat Poli
Energy Operations Division
6545 Mercantile Way
Lansing, MI 48909

Phone: 517-241-6141, Fax 517-241-6071, E-Mail : pmpoli@michigan.gov

2003-2004 MBGS Officers

The Executive Committee meeting minutes are available on the website.

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ELECTRONIC PUBLICATIONS, MARK WOLLENSAK
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University Talks and Seminars Websites

Western Michigan University,
www.wmich.edu/geology/SeminarGeos.html

Michigan State University,
www.glg.msu.edu/news/lectures.html

University of Michigan, Turner Lecture Series,
www.geo.lsa.umich.edu/announce/turner02b.html

Michigan AIPG Section website: www.aipg-mi.org.

MEETING CANCELLATION POLICY

Monthly meetings will be automatically cancelled whenever the National Weather Service issues a "Storm Warning" for the Lansing area. If driving conditions are poor but a "Warning" has not been issued please contact any member of the Executive Committee for the status of the meeting.

MICHIGAN BASIN GEOLOGICAL SOCIETY PUBLICATIONS

Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998, Devonian to Silurian Rock Fieldtrips to MI, WI, IL and Ontario, 2000, \$15

Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991, Northern Devonian and UP Fieldtrips in MI, 2001, \$10

Historical CD #3: Six out-of-print publications from 1947, 1959, 1983 and 1991, Northern Devonian and UP Fieldtrips in MI, 2001, \$12

Special Price - Historical CD #1, #2 & #3, \$30

Stratigraphic Lexicon for Michigan, 2001, prepared by MBGS and published by DEQ, 56 pp., chart, \$2.65 picked up or \$4 mailed, Can be ordered from MBGS or Geological Survey Div. of the DEQ

Price Includes postage, handling and any applicable sales tax. MBGS Members receive a 10% discount on MBGS publications.
Orders for publications should be prepaid in U.S. Funds and addressed to:
MBGS - Publications
c/o Dept. of Geological Sciences
206 Natural Sciences Building
Michigan State University
East Lansing, Michigan 48824-1115

MBGS Mug and Jacket Sale

The Michigan Basin Geological Society is offering mugs and jackets with the society logo for sale. The mugs are \$5.00 each. The jackets are \$60.00 each plus postage. Please contact Dan McGuire at: Phone (517) 772-5219, Fax (517) 772-7021, or danmcguire@sensible-net.com. Remember to include the correct size of the jacket and the quantity of each item. Checks should be made out to the MBGS.

"Visualization and Volume Interpretation in Geoscience: 3-D Seismic and Beyond"

Dr. Steven R. May, AAPG Distinguished Lecturer

Abstract

Volume interpretation technologies are revolutionizing the way geoscientists interpret seismic data and engineers evaluate reservoirs, thereby improving the accuracy of subsurface predictions. The development and application of visualization and volume interpretation technologies within petroleum geoscience has experienced rapid change within the past decade. This history provides an interesting case study of technology evolution from early ideas, to application, to visions of the future. It is one of those cases where the technology, the data, the questions, and the geoscientists came together at the right time to permit significant advances and major impact. It is also a story about the occasional tension between technology and science.

Volume interpretation and visualization capabilities are derived from the integration of powerful computers, advanced display technology, commercial and proprietary software, and comprehensive geoscience skills. Visualization techniques are designed for the viewing of multi-dimensional data while volume interpretation techniques are designed for the analysis of multi-dimensional data. These are technologies that improve the quality and efficiency of 3-D seismic interpretation, provide new capabilities for collaboration, and provide an environment for improved integration.

Volume interpretation evolved out of visualization. Initially, we were simply looking at horizons and faults, using opacity and color with volume rendering, and doing simple seed detection. Because of the synergy between hardware and software developments, and a dedicated focus on research and application, volume interpretation is having an increasingly larger impact on a variety of activities including: reconnaissance of new 3-D seismic data volumes, rapid screening and extraction of hydrocarbon related seismic anomalies, rapid mapping of horizons and faults, multi-attribute characterization of reservoirs for use in geologic modeling and flow simulation, seismic processing, and interactive 3-D well planning. We will discuss the evolution of these technologies from the perspective of different organizations and describe how they fit within the overall workflow of upstream geoscience. A variety of examples will illustrate the application and impact of volume interpretation for geoscience and engineering activities including fault interpretation, reservoir characterization, and hydrocarbon systems analysis.

Though volume interpretation and visualization technologies have become common place in upstream geoscience and their value to our business has been demonstrated, the full realization of their impact remains ahead of us. We are investigating how immersive and multi-sensory interpretation techniques will improve the way we interpret our subsurface data and communicate with others. Although numerous challenges must be overcome before these technologies are ready for general application, the future holds great promise. Effective remote collaboration technology is now capable of facilitating visualization and volume interpretation collaboration at a global scale allowing more rapid dissemination of ideas, technology and expertise across a broad portfolio of business ventures. Although application of these technologies for 3-D seismic interpretation and geoscience-engineering integration will continue to be very important, application for the purposes of knowledge capitalization will eventually have profound impact. Sedimentary basins and their associated hydrocarbon systems are complex systems about which we are trying to make very specific predictions. Visualization and volume interpretation have an exciting future as tools to be used in the search for patterns within these systems, and from those patterns, improved understanding.

Biography:

Dr. Steven R. May

Education:

1979 University of California – Riverside; B.S., Geology
1981 University of California – Riverside; M.S., Geology
1985 University of Arizona; Ph.D., Geoscience (Jurassic Paleomagnetism, North American Plate Motion, and Cordilleran Tectonics)

Experience:

1985-Present ExxonMobil Upstream Research Company (formerly Exxon Production Research), Houston, Texas

Research Activities:

Plate Reconstruction and Paleogeography, Regional Tectonics, Basin Analysis, Hydrocarbon Migration, Visualization and Volume Interpretation. 1995-2002: Research Geologist and Technical Team Lead for ExxonMobil Visualization and Volume Interpretation Group. Currently responsible for technical integration on a research project targeting new exploration concepts through integration of geodynamics, basin modeling, and play element prediction technologies.

Publications:

Papers and abstracts on 3-D seismic interpretation and visualization; basin evolution; applications of Paleomagnetism for hydrocarbon migration, plate motion, and tectonics. Co-author of "Interactive Seismic Facies Classification Using Textural Attributes and Neural Networks," (Awarded Best Paper of 2002 in SEG's The Leading Edge).

AAPG Annual Meeting

April 18-21, 2004, Dallas Texas

The official announcement from the AAPG Annual Meeting is available and the time to register is now. This year's technical program includes more than 400 oral presentations, 288 half-day poster presentations, 13 short courses, and 10 field trips. The official meeting announcement is available online at the AAPG website. . The pre-registration deadline is March 17, 2004. All registrations, including hotel reservations, can be made online at: www.aapg.org/meetings/dallas04/.

CALL FOR PAPERS

AAPG—EASTERN SECTION 2004 MEETING

You are cordially invited to attend the 33rd annual meeting of the Eastern Section of the American Association of Petroleum Geologists (ES-AAPG), in Columbus, Ohio, October 3-6, 2004. The theme of this year's meeting is "**Still Economic after all these Years.**"

From the historic days of the Drake well and the world's first giant oil-and-gas field (the Lima-Indiana producing trend) to the present-day exploration for new frontier horizons, our region has been contributing to the world's energy resources for nearly 150 years. Geoscientists have led the way in developing the ideas and innovative techniques necessary to sustain our industry, and are the reason our region is "**Still Economic after all these Years.**"

ES-AAPG together with AAPG's Division of Environmental Geosciences (DEG), Energy Minerals Division (EMD), and Division of Professional Affairs (DPA) will offer two concurrent oral sessions each day of the meeting and two full-day poster sessions. A post-meeting workshop also is being planned. This year's meeting not only incorporates our goal of highlighting new exploration plays, but also offers a forum to emphasize new ideas for old plays, new technologies and ideas for finding or developing reserves, and historical perspectives that provide a foundation for new opportunities. The technical Program Committee encourages you to contribute an abstract for an oral or poster presentation and participate in this informative and exciting meeting. All papers of interest to the Eastern Section will be considered.

Information for Presenters

Authors are invited to submit new and original work for either oral or poster sessions outlined in this call for papers. Abstracts are due by **APRIL 1, 2004**. Authors will be notified of acceptance or rejection by June 1, 2004. Oral sessions will be 25 minutes in length followed by a 5-minute question period. Speakers are strongly encouraged to follow AAPG guidelines for slide preparation, as good visual aids go a long way toward making a quality presentation.

Conventional slide projectors, computer projector, screens, a lighted lectern, microphone, and laser pointer will be provided in each room. If a PowerPoint presentation is given, you must

provide us with your PowerPoint file a week prior to the meeting to reduce the possibility of technical difficulties. Poster sessions will run a full day. Poster authors are expected to be in their booths a minimum of 4 hours, split between morning and afternoon sessions. Authors will be provided two (three if requested in advance) 4 ft by 8 ft boards suitable for Velcro® attachment of posters, a table, chairs, and electricity. Abstracts should be submitted electronically, if possible, following instructions below or on our website: <http://www.ohiodnr.com/geosurvey/aapg04.htm>. Paper submissions are acceptable using the form included in this call for papers. Please also submit an abstract application form and state whether you prefer an oral or poster presentation or if either is applicable. Over-subscription may mean that some papers will be moved from poster to oral, and vice versa, but only upon approval of the authors. Many people will decide to attend a presentation based solely on its title. Therefore, it would be beneficial for you to make your title as brief and as interesting as possible while still conveying the main topic. **Please do not submit an abstract unless at least one author is certain to attend the meeting. Speakers are required to register for the meeting.**

Proposed Topics:

- . Bypassed Reservoirs in Mature Fields
- . Geochemistry and Source Rock Studies
- . Cambrian/Ordovician Frontier Plays—Trenton/Black River, Knox, and Pre-Knox units
- . Fractured Reservoirs
- . Enhanced Oil Recovery
- . Unconventional Petroleum Systems and Methods for Hydrocarbon Recovery—Geochemical Techniques, Horizontal Drilling, Basin-Centered Gas Systems, Fractured Shale-Gas
- . Coalbed Methane Opportunities
- . Environmental Assessment, Remediation and Hydrogeology Issues
- . GIS and Computer Applications in Petroleum Geology
- . Historical Retrospect of Eastern Plays
- . Geophysical Methods Including 2D, 3D Seismic, and Aeromagnetic Interpretation
- . Detailed Studies/Case Histories of Oil and Gas Fields

- . Hydrocarbon Resources of the Great Lakes
- . Sequence Stratigraphy—Applications in Exploration and Development
- . Impact Features and Hydrocarbon Potential
- . Reservoir Characterization of Siliciclastics and Carbonates
- . Evaluation and Prediction of Stratigraphic Traps
- . CO₂ Sequestration—Studies and potential impact on the region
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**33rd Annual Meeting
Ramada Plaza Hotel
Columbus, OH Oct. 3-6, 2004
Hosted by:
Ohio Geological Society
Ohio Geological Survey**

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Technical Program Chair

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**EXHIBITOR, SPONSOR & DEAL ROOM
OPPORTUNITIES AVAILABLE**

EXHIBIT SPACE will be available throughout the meeting.

Contact: Jim Hanlon, Hanlon Exploration
2421 Johnstown Rd.
Dover, OH 44622
Ph: (330) 343-6433
e-mail: GeoJimJH@aol.com

DEAL ROOM—Space will be available to sell/buy prospects, properties, venture opportunities.

Contact: Amy Lang, Exploration Geologist
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Columbus, OH 43234
Ph: (614) 717-9262
e-mail: aburke@ee.net

SPONSORSHIPS—Sponsor a session, coffee break, event, room, or entertainment.
Contact: Pete MacKenzie, CGAS Exploration, Inc.
4770 Indianola Ave.
Box 14981
Columbus, OH 43214
Ph: (614) 888-9588
e-mail: Pete@cgasinc.com

**ABSTRACT FORMAT AND
INSTRUCTIONS**

The format described below must be used to submit your abstract. Your abstract will appear in the proceedings exactly as it submitted, so please read and follow these instructions. All information listed below should be typed in the font of your choice, 12-point size, on an 8 1/2 x 11 inch paper, portrait orientation, 1-inch top, bottom, left, and right margins.

1. TITLE—The first item you should list is the title of your abstract. Titles should be in **bold** upper and lower case text, aligned with the left margin, beginning on the first line below the top margin. Example title: **The Integration of Ohio's Oil and Gas Well Data**

2. AUTHORS—After the title, skip one line and type the senior author's name first, followed by additional authors (see example below). CAPITALIZE the name of each author. In upper and lower case text following the name include the author's affiliation, city, and state/province. If the speaker will not be the senior author, put an asterisk (*) after the speaker's name. Example authors: MCDONALD, JAMES, JOSEPH G. WELLS, LAWRENCE H. WICKSTROM*, Ohio Division of Geological Survey, Columbus, OH, MICHAEL P. MCCORMAC and GREGG M. MILLER, Ohio Division of Mineral Resources Management, Columbus, OH

3. ABSTRACT—Skip another line and begin the body of your abstract. Abstracts for both oral and poster presentations are limited to 250 words or

less. Only the title should be bold. Use full width of the page (within margins); indent the first line of each paragraph by 1/4 inch; lines must be single-spaced; justify the type to the left and right margins; no illustrations, references, or abbreviations. PLEASE PROOFREAD—no corrections will be made.

You may either save the abstract form (available on the web site in Word) and your abstract in a Word document or in rich text format (.rtf) and email to Ron Riley, save the abstract form and your abstract in rich text format on a 3 1/2 inch floppy or compact disc and mail to Ron Riley, or print the completed abstract form, attach your printed abstract, and mail to Ron Riley. Use the following file name format (all lower case)—corresponding author's last name_corresponding author's first name_abstract number (use 1 for the first abstract submitted by the author, 2 for the second abstract submitted by the same author, and so on). Example file name: doe_john_1.rtf

Abstract form on next page

MAIL ABSTRACT AND ABSTRACT FORM TO:
Ron Riley, Technical Program Chair
Ohio Geological Survey

AAPG-EASTERN SECTION 2004 ABSTRACT FORM
Deadline*: April 1, 2004

NOTE: The content of your abstract is your responsibility. Please check it carefully.

Speaker's Name (last name first)

Affiliation (employer): _____

Office Phone: _____ Office FAX: _____ E-mail: _____

Address: _____

City, State, ZIP/Postal Code: _____

For: Oral ___ Poster ___ Either ___ Are you a student? ___

Please indicate preferred session: 1): _____

2): _____

If your paper does not fit a proposed topic, indicate your topic with two or three key words:

Is this an invited paper? ___ Invited by whom? _____

Has this or a similar paper been presented before? _____

Where? _____ When? _____

How does this paper differ from previous ones?

Mode of presentation: 35 mm slides (one projector ___ two projectors ___) OR PowerPoint (single screen) _____

4383 Fountain Square Dr.
Columbus, OH 43224-1362

**OR E-MAIL FORM FROM WEB SITE AND
ABSTRACT TO:**

ron.riley@dnr.state.oh.us

DEADLINE: APRIL 1, 2004

***Deadline** (noun): a date or time before which something must be done and after which the opportunity passes: the time limit after which copy is not accepted for use in a publication

All papers of interest to the AAPG Eastern Section will be considered