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Editor: Ruth Costley (ruthc@ig.utexas.edu)

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## Greetings

We are very excited about this final year of the CBTH Phase II project. This past year end meeting was a great kick off for this year with twenty-one sponsors attending and providing excellent input. In this year, we will be continuing our research in Colombia, Guyana and Suriname while also focusing our efforts in the Nicaraguan Rise and the Northeastern Caribbean. This edition of the newsletter will provide updates on our recent research activities.

If you are not a sponsor and are interested in participating in the CBTH consortium, we encourage you to take a minute to review our website ([www.ig.utexas.edu/research/projects/cbth](http://www.ig.utexas.edu/research/projects/cbth)) where you can also download our project proposal, demos and previous newsletters. Please feel free to contact us at [cbth@ig.utexas.edu](mailto:cbth@ig.utexas.edu)

## Additions to the CBTH Research Team

Four additional graduate students have been added to our team: Maria Isabel Prieto, Guangliang Wu, Brendan Figueira, and Catalina Moreno. Maria and Guangliang will all be working on their PhD degrees at The University of Texas at Austin. Catalina and Brendan are

our new graduate students from the University of Stavanger.

María Isabel Prieto joins our group from Colombia where she received her MS degree at EAFIT University. At CBTH, she will be seeking a doctorate degree while studying the tectonostratigraphic development of the western Nicaraguan Rise (offshore Colombia, Honduras, and Nicaragua) using seismic reflection and well data. María Isabel's data includes ANH, academic data available from UT (including refraction), and vintage seismic and well data from Honduras. She would also like to collaborate with governmental groups in Jamaica and Honduras to create a synthesis for the entire Nicaraguan Rise.

Guangliang Wu, our new student from China, graduated with a Bachelor of Science degree from the China University of Petroleum. His doctorate work at CBTH will focus on the structural, stratigraphic and tectonic aspect of the eastern Nicaraguan Rise. His data includes some pre-existing data captured here at UTIG, Jamaica industry data, and Deep Sea Drilling Project data.

Catalina Moreno is pursuing the MSc in Petroleum Geosciences Engineering at the University of Stavanger, Norway. Her study will focus on the tectonostratigraphic evolution of the southern Llanos basin of Colombia within the CBTH framework. Catalina joins our group from Colombia where she graduated from the Universidad Nacional de Colombia and wrote a Bachelor's thesis on sedimentology and dynamics of the Ciénaga de Zapatoza, Cesar, Colombia.

Brendan Figueira is currently pursuing the MSc in Petroleum Geosciences Engineering at the University of Stavanger, Norway. He is planning and executing his Master's project within the CBTH framework in the western offshore Trinidad region. His research interests include structural geology, tectonics, petroleum geology, and unconventional resources. He graduated from the University of the West Indies (UWI) in 2009 with a BSc in Petroleum Geosciences and his Bachelor's project was titled 'Origin of fractures, Galera Point,

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North East Trinidad: Their significance for fluid flow and hydrocarbon prospectivity.'

We are excited about the new additions to our research team. To learn more about any of our research team, visit:  
[http://www.ig.utexas.edu/research/projects/cbth/proj\\_res.htm](http://www.ig.utexas.edu/research/projects/cbth/proj_res.htm)

## Meet our Company Contacts

The following people have volunteered to serve as our main contacts for CBTH. All data generated by CBTH is provided to the sponsoring companies through these individuals. Please let us know if your company representative changes during this study. We greatly appreciate all the extra efforts by the representatives for the CBTH project!

### BHP Billiton Petroleum, Inc.

David Risch

Houston, Texas



### British Gas T&T Limited

Stephen Babb

Port-of-Spain, Trinidad



### Chevron

Richard Parrish

Houston, Texas



### Ecopetrol

Roberto Hernandez

Bogota, Colombia



### ExxonMobil Exploration Company

Pete Rumelhart

Houston, Texas



### Hess

Peter Mullin

Houston, Texas



### Newfield Exploration

Bruno Maldonado

Houston, Texas



### Noble Energy, Inc.

Robb Bunge

Houston, Texas



### Petrobrás

Alice Aragão

Rio de Janeiro, Brazil



### PDVSA

Alberto Ramos

Puerto la Cruz, Venezuela



### Repsol

Dewi Jones

The Woodlands, Texas



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## Shell

Fernando Sanchez-Ferrer

Houston, Texas



## Statoil

David Hunt

Oslo, Norway



## Total

Patrick Salmon

Paris, France



## CBTH Software Support

CBTH strives to use software programs comparable to that used by our sponsors. Students working on the project extensively use these software programs in their thesis and dissertation studies. Some are provided at no cost to our project because of our academic affiliation; others are paid for by CBTH funds contributed by our sponsors.

## LandMark

Bill Agee  
Landmark Graphics



Landmark Graphics is our interpretative software which is provided at an educational rate.

## IVS3D

Bill McKernan



We are also using an exciting visualization package called Fledermaus from IVS3D.

## Zetaware Genesis

Zhiyong He



Zetaware has generously provided CBTH with two copies of Genesis which is their basin modeling package.

## PaleoGIS

Arwen Vaughan



Dr. Ian Norton is working with Alejandro Escalona on an improved Caribbean plate model using the PaleoGIS software that allows integration of our other GIS-based data into the reconstructions. The first of our plate model was released to the sponsors this year. For sponsor's who wish to use the PaleoGIS extension, please contact the Rothwell Group for purchase options.

## Chesapeake Technology

For a list of distributors, visit:



<http://www.chesapeaketech.com/distr-list.html>

CBTH has purchased the ImageToSEGY software from Chesapeake technology which allows conversion of analog paper seismic records to SEGY format. We have several projects that have successfully used Chesapeake to convert paper data to digital data and thereby expand our database in frontier areas like Guyana Suriname (cf. Yang et al., 2010), and the Nicaraguan Rise (cf. Emmet and Mann, 2010). All these converted data are made available to CBTH sponsors in Landmark format.

## Midland Valley

Sarah Davenport



Midland Valley is the producer of 2DMove, 3DMove, and 4DMove software. The UTIG group attended a training course by Midland Valley on this structural restoration software on April 22, 2010. Midland Valley has provided

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UT 10 licenses and would like to help foster the use of the software at UT. CBTH projects will start incorporating this software into their workflow.

## Schlumberger



For more information visit:

<http://www.slb.com/services/software/geo/petrel.aspx>

Schlumberger has kindly provided us with Petrel seismic to simulation software.

## Data Distribution

We are pleased to be able to provide our sponsors with our GIS data, plate model, presentations, publications, and annual atlas. This year's data release has already been sent to each sponsor representative. Please see your representative for all CBTH releases. All CBTH release data and products are also available online for our sponsors.

## Theses, Dissertations, Publications and Other documents

Available at:

[http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/thes\\_diss.htm](http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/thes_diss.htm)

Aitken, T., P. Mann, A. Escalona, and G. L. Christeson, Evolution of the Grenada and Tobago basins and implications for arc migration: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Duerto, L., and K. McClay, Role of the shale tectonics on the evolution of the Eastern Venezuelan Cenozoic thrust and fold belt: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Escalona, A., and P. Mann, Tectonics, basin subsidence mechanisms, and paleogeography of the Caribbean-South American plate boundary zone: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Escalona, A., P. Mann, and M. Jaimes, Miocene to recent Cariaco basin, offshore Venezuela: Structure, tectonosequences, and basin-forming mechanisms: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Hippolyte, J.-C., and P. Mann, Neogene-Quaternary tectonic evolution of the Leeward Antilles islands (Aruba, Bonaire, Curaçao) from fault kinematic analysis: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Mann, P., Dedication Amos Salvador (1923-2007): *Marine and Petroleum Geology*, v. In Press, Accepted Manuscript

Mann, P., and A. Escalona, Introduction to the special issue of *Marine and Petroleum Geology: Tectonics, basinal framework, and petroleum systems of eastern Venezuela, the Leeward Antilles, Trinidad and Tobago, and offshore areas*: *Marine and Petroleum Geology*, v. In Press, Accepted Manuscript.

Salazar, M., L. Moscardelli, W. Fisher, and M. A. Lorente, Tectonostratigraphic evolution of the Morichito piggyback basin, Eastern Venezuelan Basin: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Sánchez, G. J., N. Baptista, M. Parra, L. Montilla, O. J. Guzmán, and A. Finno, The Monagas Fold-Thrust belt of Eastern Venezuela. Part II: Structural and paleo-geographic controls on the turbidite reservoir potential of the middle Miocene foreland sequence: *Marine and Petroleum Geology*, v. In Press, Corrected Proof.

Weber, J. C., J. Saleh, S. Balkaransingh, T. Dixon, W. Ambeh, T. Leong, A. Rodriguez, and K. Miller,

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Triangulation-to-GPS and GPS-to-GPS geodesy in Trinidad, West Indies: Neotectonics, seismic risk, and geologic implications: Marine and Petroleum Geology, v. In Press, Corrected Proof.

Xie, X., P. Mann, and A. Escalona, 2010, Regional provenance study of Eocene clastic sedimentary rocks within the South America-Caribbean plate boundary zone using detrital zircon geochronology: Earth and Planetary Science Letters, v. 291, p. 159-171.

2010 Atlas in PDF format

2010 year end meeting presentations in PDF format

CBTH Atlas 2010 Surfaces in Fledermaus format

## GIS Compilation Database

Available at:

<http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/VenmarHtml/GIS/2010/>

The 2010 GIS compilation database includes updates from Colombia, Venezuela, Suriname and Guyana, Nicaraguan Rise, Gulf of Mexico, and the Northern Caribbean.

This year's GIS release includes the geochronological geodatabase, the geology geodatabase, and the PLATES model geodatabase. The plate is a portion of the UTIG Plates consortium plate tectonic model designed to be used with the PaleoGIS extension for ArcGIS. For the complete PLATES model, please contact Lisa Gahagan with the PLATES consortium (lisa@ig.utexas.edu).

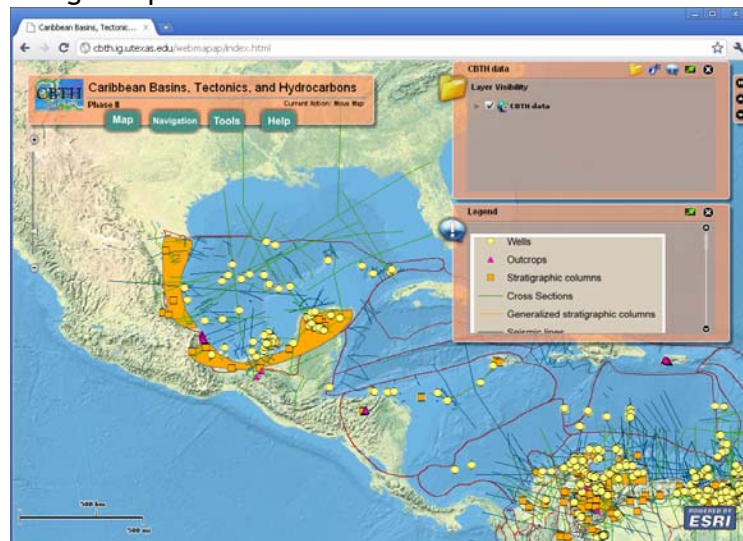
All ArcMap documents and corresponding data for this year's atlas are available online.

## Web Mapping Application

Please visit:

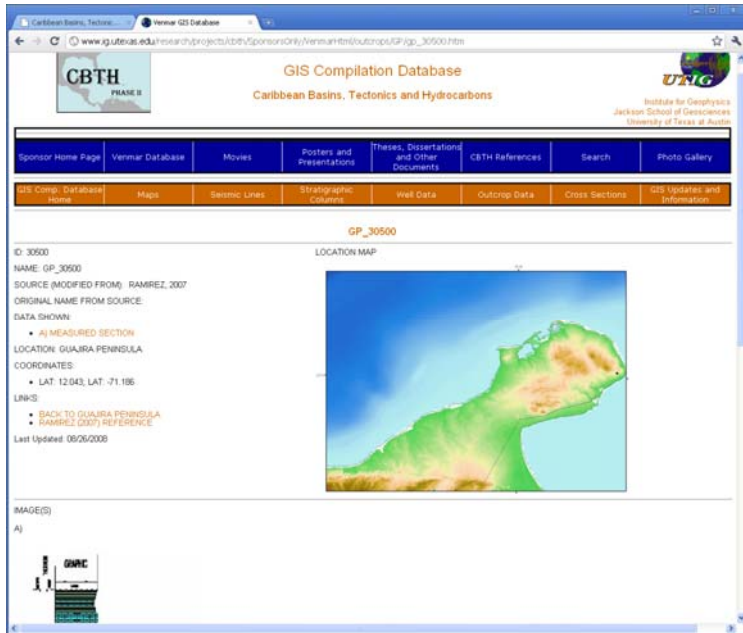
<http://cbth.ig.utexas.edu/webmapap/index.html>

Please visit our new web mapping application. This new supplemental website has been created to better suit our sponsors' GIS needs. Our entire GIS literature compilation geodatabase is available via this new site with other datasets such as earthquakes, plates, oil and gas seeps, oil and gas giants, oil and gas fields, geochronologic data, magnetic anomalies, and gravity anomalies. Please visit this site to make your own map and spatially investigate the Caribbean region for oil and gas exploration.



The CBTH web mapping application home page

With this new website, we have discontinued creating data pages for our GIS literature compilation database and will eventually remove current data pages and links from our main site. We will not be removing GIS database downloads and will continue to provide sponsors with all GIS databases created by the CBTH project. Please use the new website to view our GIS literature compilation data.



Example of data pages that will be removed from the CBTH website

## Past Meetings and Events

### EAGE

Alejandro Escalona and Lisa Bingham gave presentations at the European Association of Geoscientists and Engineers annual meeting in June in Barcelona, Spain.

Bingham et al Creating a Unified Geologic Database- Methods and Techniques

Escalona et al Basin Modeling along Emergent Island Arcs and Oblique Convergent Margins- Impact on Petroleum Systems - SE Caribbean Case

Presentations available at:

<http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/POSTERS/Other/other.htm>

## Colombian Geoscientists Network

In Houston on August 5, Dr. Carlos Vargas presented his talk on: "Tomographic constraints on subducted slabs beneath Colombia: Implications for tectonics and petroleum exploration." This talk was a culmination of the work he did here with CBTH.

Presentation available at:

<http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/POSTERS/Other/other.htm>

## AGU meeting of the Americas

Paul Mann was an invited speaker to a special union session called: The 2010 Haiti earthquake: Lessons for seismic hazard and societal impacts in the Caribbean. He also presented a poster on the Guyana Basin.

Mann et al The 2010 Haiti Earthquake: Lessons for Seismic Hazard and Societal Impacts in the Caribbean

Mann et al Far-field Deformation Effects of the Oblique Caribbean Plate Collision on the Passive Margin of Northeastern South America in the Guyana Basin

Presentations available at:

<http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/POSTERS/AGU/agu.htm>

## CBTH Phase II Year 2 year end meeting

Twenty-one sponsor representatives joined us for the 2010 year end meeting in Austin, Texas. At this meeting, we presented a summary of this past year's research and discussed the future research our group. We are thankful for all of our attendees and their recommendations concerning our future projects.

Presentations available at:

<http://www.ig.utexas.edu/research/projects/cbth/SponsorsOnly/documents/2006MeetingPresentations.pdf>

## Sponsor Visits

Paul Mann and Alejandro Escalona lead a short course to familiarize those attending about the region and the results of the CBTH project. If your company would like a short course, please contact Paul Mann ([paulm@ig.utexas.edu](mailto:paulm@ig.utexas.edu)) or Alejandro Escalona ([alejandro.escalona@uis.no](mailto:alejandro.escalona@uis.no)).

## Upcoming Meetings

### Tectonic Crossroads: Evolving Orogens of Eurasia-Africa-Arabia

When: October 4-8, 2010

Where: Ankara, Turkey

Paul Mann will co-convene the session: "Strike-slip and transform fault tectonics. Part 1" and presenting two presentations at this meeting.

Mann The Caribbean Plate: A natural Laboratory for the study of the structure and seismic potential of active strike-slip faults

Mann et al Tectonic Block Rotation, arc curvature, and back-arc rifting: comparison between Mediterranean and western pacific examples

## AGU Fall Meeting

When: December 13-17, 2010

Where: San Francisco, CA

Alvarez And Mann Subduction-to-Strike-Slip-Transition in the Southeastern Caribbean imaged using deeply penetrating seismic reflection lines and tomography.

## Plans for the Future Research

We have enjoyed 5 excellent years researching under the project name CBTH and hope that our sixth year is full of achievements. We are planning on continuing our research in the Caribbean and beyond with a slightly expanded study area and new name, Integrated Basins Studies (IBS). In the coming weeks, we are accepting recommendations for the future of our project. In mid-November, we will present a new proposal that will be sent to sponsors and other interested parties. Please do not hesitate to send any questions or comments about our future project to [cbth@ig.utexas.edu](mailto:cbth@ig.utexas.edu).

## Contact Information

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Lisa Bingham: [cbth@ig.utexas.edu](mailto:cbth@ig.utexas.edu)

Ruth Costley: [cbth@ig.utexas.edu](mailto:cbth@ig.utexas.edu)