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We are now in the midst of a hectic but very productive fifth year of the CBTH project. We just returned from the 2010 AAPG Annual convention and exhibition in New Orleans, LA where CBTH sponsored 12 participants who gave a record 11 CBTH-related oral and poster presentations - one of which won an AAPG student poster award. We made many useful contacts at the meeting including groups who would like to donate data for CBTH-related research. All our AAPG presentations are now available for download by the sponsors. Login information is available from your official company representative listed below.

This edition of the newsletter will update you on these recent research activities along with upcoming meetings including our yearend sponsors meeting at the University of Texas Institute of Geophysics (UTIG) in Austin, Texas, on September 17, 2010. We hope that all of our 13 official sponsor representatives can attend this important second-to-last meeting of Phase II along with other company members interested in hearing about CBTH research results and plans for completing phase II in August of 2011.

During this September meeting, sponsors will hear reports from all of us on our CBTH-supported projects, and have the opportunity to provide us input into which areas of study would most benefit their company's exploration efforts in the region of northern South America, the Caribbean, and the Gulf of Mexico. We are starting to gear up for Phase III of the project (September 2011-August 2014) and will discuss with the group our plans to both focus in areas we are now studying in addition to expanding into some new areas.

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.

Karen Tindale
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

Pinar Yilmaz
Houston, Texas



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Newfield Exploration

Bruno Maldonado

Houston, Texas



Petrobrás

Alice Aragão

Rio de Janeiro, Brazil



PDVSA

Alberto Ramos

Puerto la Cruz, Venezuela



Repsol

Raul Giraud

The Woodlands, Texas



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 kindly providing our interpretative software.

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 on an improved Caribbean plate model using the PaleoGIS software that allows integration of our other GIS-based data into the reconstructions. The advantage to sponsors is being able to see what data has been used to constrain reconstructions.

Chesapeake Technology

For a list of distributors, visit:



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

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

Midland Valley

Sarah Davenport



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

Current Activities of CBTH

Paul Mann, principal investigator, UTIG: Paul has been busy this year supervising 2 University of Texas postdoctoral students, 1 PhD student and 4 MS students, all engaged in work for the CBTH project (cf. AAPG titles for a summary of the various studies). In addition, Paul and Alejandro have recently completed a special issue on the tectonics and subsurface geology of the southeastern Caribbean in Trinidad and eastern Venezuela for the journal *Marine and Petroleum Geology* (papers listed can be downloaded from: <http://www.sciencedirect.com/science/journal/02648172>). This volume contains summaries of 5 CBTH-funded MS theses and follows up on their 2006 special issue of *AAPG Bulletin* that focused on the Maracaibo basin of western Venezuela. Paul also spent a month in the field in Haiti as part of a geologic rapid response to the January 12, 2010, earthquake. He and a group of other scientists are completing a special issue on the

earthquake and its tectonic setting for the journal *Nature Geosciences*.

Alejandro Escalona, co-principal investigator, University of Stavanger, Norway: Alejandro assists with supervising all students at UTIG along with Dr. Wenxiu Yang, a CBTH-funded post-doctoral student at UiS. In addition to completing two first-authored papers for the MPG special issue including a regional summary of the first four years of CBTH work, he has worked with Yang on a new manuscript on the Suriname-Guyana margin (cf. AAPG presentation). He has also worked with Yang on a new basin model for the offshore Venezuela and ABC islands area and is preparing a new study of the area of the southern Gulf of Mexico and Bahama Platform. In August of 2010, he will work with Dr. Ian Norton in Norway on the revised PaleoGIS plate model for the Caribbean. This model will become the basis for a new set of paleogeographic maps for the CBTH area.

Dr. Ian Norton, CBTH consultant, UTIG and University of Stavanger: Ian's expertise with PaleoGIS has been a great asset to CBTH in revising the Caribbean plate model. He also assists us with his wealth of knowledge on many topics including gravity, magnetics and subsidence analysis. Ian is also working on collecting new seismic refraction data from the Gulf of Mexico and refining reconstructions in that area.

Dr. Pete Emmet, CBTH consultant, UTIG: Pete has assembled and interpreted most of the vintage industry and well data from the Nicaraguan Rise, an area he has maintained an interest in since completing a MS thesis on Honduras at UT in 1982. Pete and Paul have also been collaborating with PGS on more recent data collected on the Nicaraguan Rise.

Xiangyang Xie, post-doctoral student, UTIG: "Cheyenne" completed his 2 year post-doctoral study funded equally by CBTH and UT in August of 2010 and moved to a postdoctoral position at the University of Colorado. His paper on using detrital zircons to constrain paleogeography in northern South America was published in the journal *Earth and Planetary*

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Science Letters in this year and is available at that journals website (papers can be downloaded from <http://www.sciencedirect.com/science/journal/0012821X>). He recently obtained a tenure track assistant professor position at the Department of Geosciences of the University of Arkansas.

Carrie Whitehill, post-doctoral student, UTIG: Carrie started a 2 year postdoc funded equally by CBTH and UT after completing her PhD in geology at Stanford University in May of 2009. She is working on a 3D structural and stratigraphic model for the Cesar-Rancheria basin of Colombia using ANH data (cf. AAPG presentation). This area will have a bid round in 2010.

Carlos Vargas, post-doctoral student, UTIG: Carlos started a one year postdoc funded by CBTH and UT in August 2009. Carlos is working the deep crustal structure of Colombia using seismic tomography and a mega-regional seismic line provided by ANH (cf. AAPG presentation). Carlos has been an invaluable link between CBTH, ANH, and academic and industry researchers in Colombia.

Wenxiu Yang, post-doctoral student, University of Stavanger, Norway: Yang joined the Stavanger group in 2009 as a two year postdoctoral student. She has completed a study of Guyana and Suriname and is starting a study of the northeastern Caribbean and southern Gulf of Mexico.

Lisa Bingham, GIS specialist and project coordinator, University of Stavanger, Norway: Lisa works parttime for CBTH in Norway while obtaining a MS degree in GIS technology from Delft University in The Netherlands. Her work for CBTH includes improving the database, helping with sponsor requests, and assisting with the PaleoGIS reconstructions. Her recent research on creaming curves for major oil and gas fields in the CBTH study area was presented at the AAPG meeting and is available to sponsors.

Ruth Costley, GIS specialist, UTIG: Ruth, who holds a MS degree from the University of Redlands in GIS technology, joined the project in August 2009. Her

current efforts are creating an ArcGIS web service that will simplify and enhance the mapmaking capabilities for the sponsors. This product will be demonstrated to sponsors at the September annual meeting.

Jeff Storms, GIS specialist, UTIG: Jeff has worked with the CBTH project as a UT undergraduate since 2007. After completing his BS at UT in May of 2009, he was hired as a GIS specialist who provides support to staff and students including making Fledermaus visualizations of CBTH data.

Tricia Alvarez, PhD candidate, UTIG: Tricia completed her PhD qualifying exam in April 2010 and plans to complete her PhD degree at UT by 2013 (her UT MS on Trinidad was completed in December of 2008). Her dissertation topic is the structure and stratigraphy of the deep and ultra-deepwater offshore area of eastern Trinidad that will be the subject of a bid round in 2010. Her data is being provided by the Trinidad Ministry of Energy along with other interested companies. Her poster presentation at the AAPG meeting in New Orleans on this topic won third place in the AAPG student poster competition (cf. AAPG abstracts). Tricia was the teaching assistant for the subsurface geology course taught in the fall of 2009 by Paul and Dr. Lorena Moscardelli of the UT Bureau of Economic Geology



Tricia Alvarez and Paul Mann showing the AAPG student poster award.

Maria Isabel Prieto, PhD aspirant, UTIG: Maria Isabel, MS degree EAFIT University, Colombia, will join the UTIG group as a PhD student in July of 2010. Her study

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area will be the Los Cayos (Caribbean) region of offshore Colombia. Her data will include ANH, academic data available from UT (including refraction), and vintage seismic and well data from Honduras (cf. AAPG abstract from Emmet and Mann). She would also like to collaborate with governmental groups in Jamaica and Honduras to create a synthesis for the entire Nicaraguan Rise.

Guangliang Wu, PhD aspirant, UTIG: Guangliang, BS degree Petroleum University of China, will join the UTIG group as a PhD student in July of 2010. His initial study area will be Hispaniola, Puerto Rico, and the southeastern Bahama Bank where oil and gas in wells have been reported along with limited production in one area of the Dominican Republic. Much of the data from this region is vintage data that will need to be converted to digital using the Chesapeake software.

Gustavo Taboada, MS graduate, UTIG: Gustavo completed his MS thesis on the Eastern Venezuelan foreland basin in August of 2009 and is currently working as an offshore explorationist with CVP-PDVSA in Caracas, Venezuela. He is assisting PDVSA in making use of the CBTH database.

Stefan Punnette, MS candidate, UTIG: Stefan Punnette will complete his MS work on Trinidad in August of 2010 and begin an exploration job with BP in Houston. He reported on the structural part of his study at the 2009 AAPG meeting in Denver and the stratigraphic part of his study at the 2010 meeting in New Orleans (cf. AAPG abstracts). We appreciate the financial support of BG in Trinidad that funded him as a UTIG fellowship student and provided most of his data including well cores.

Rocio del Pilar Bernal Olaya, MS candidate, UTIG: Rocio started her MS project on the Lower Magdalena basin and subsurface Romeral fault zone in August of 2009 and has made rapid progress as a result of the availability of ANH and Ecopetrol data along with her extensive experience in subsurface mapping from her previous training and jobs in Colombia (cf. AAPG abstract). She will complete her MS in August of 2011.

Anthony Rodriguez, MS candidate, UTIG: Anthony also started a MS project in August 2009 in a new area for CBTH, the Mexican sector of the Gulf of Mexico. This study is jointly supervised by CBTH and the GBDS project of Bill Galloway and Patty Ganey-Curry (cf. AAPG abstracts). Anthony is independently funded by a UT fellowship. He will be working as an intern with the Gulf of Mexico group at Shell in Houston this summer. We appreciate Shell's efforts in arranging this internship that will allow him to also progress on his MS research.

Henry Campos, MS candidate, UTIG: Henry started his MS project in August 2009 in another new area for CBTH, the Llanos foreland basin of Colombia. Henry has made rapid progress in compiling ANH seismic and well data from the basin and will integrate these data into the first regional-scale overview of the basin and its basin-forming mechanisms. He will be working as an intern with the Colombia group at Shell in Houston this summer. We appreciate Shell's efforts in arranging this internship that will allow him to also progress on his MS research.

Sanchi Srivastava, undergraduate research assistant, UTIG: Sanchi has worked for the CBTH project since 2008 providing a variety of support tasks including data base development and conversion of paper seismic to segy. She is a senior at UT and plans to graduate in December of 2010.

Erik Farthy, undergraduate research assistant, UTIG: Erik is a junior geology major at UT who provides research support for CBTH since joining the group in February of 2010. Erik is also gaining research hours in a special project on the structure of the Sierra de Perija.

Where are they now? Past students who have worked with the CBTH project since its start in 2005 (all theses are available through the CBTH website)

David Gorney, UT MS, 2005, now with Alaska asset team, Marathon Oil Company, Houston, Texas

Emilio Garciacaro, UT MS, 2006; now deepwater Gulf of Mexico group, Statoil, Houston, Texas

Trevor Aitken, UT MS, 2005, now with Devon Energy, Houston, Texas

David Contreras, UT MS, 2008; now with PDVSA foreign ventures group, Venezuela

Margaret Kroehler, UT MS, 2007, now with Gulf of Mexico group, Noble Energy, Houston, Texas

David Soto, UT MS, 2007, now with Repsol, Bogota, Colombia

Justin Funk, UT MS, 2007, now with Devon Energy, Houston, Texas

Gustavo Taboada, UT MS, 2009, now with CVP-PDVSA, Venezuela

Past Meetings and Events

American Association of Petroleum Geologists

When: April 11-14, 2010

Where: New Orleans, LA

The 11 presentations given at the meeting are listed below. We appreciate those of you who were able to attend our sponsors luncheon on April 12, 2010.

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

Alvarez and Mann Tectonic habitat of hydrocarbons in the deep- and ultra-deepwater frontier areas of Trinidad and Tobago

Bernal and Mann	Characterizing the structural style and age of the Romeral fault zone in the subsurface of the Lower Magdalena basin, Colombia
Bingham et al	Creaming Curves and Discovery Trends of 5 basins from the Gulf of Mexico to Northern South America
Campos and Mann	Tectonic influence of the Cordillera Oriental thrust salient on the shortening and subsidence history of the Llanos foreland basin of Colombia
Emmet and Mann	Early Cenozoic rift inversion: key to understanding the structural framework and petroleum potential of the Nicaraguan Rise
Mann et al	Tectonic setting and hydrocarbon trendology of a reported 7-8 TCF giant gas Discovery, eastern Gulf of Venezuela
Punette et al	Tectonic and eustatic controls on the origin of shelf sands and associated facies, offshore NCMA area of Trinidad and Tobago
Rodriguez et al	Effects of Laramide foreland basin tectonics on structure, subsidence, and hydrocarbons of the Mexican sector of the Gulf of Mexico
Vargas et al	Morphologic expression of the accretion process in the SW margin of the Pacific of Colombia interpreted by means bathymetric high-resolution data
Wenxiu et al	Tectono-stratigraphic evolution of the continental shelf of Guyana and Suriname
Whitehill et al	Tectono-stratigraphic framework of the western Maracaibo block, Colombia-Venezuela: Implications for hydrocarbon exploration

Colombian Geoscientists Network

In Houston on April 22, Dr. Elias Gomez of Shell presented the talk on: "Genesis of Andean foreland basins and the Caribbean region of Colombia" which contained much useful information for the CBTH projects of Whitehill, Bernal and Campos.

Upcoming Meetings

EAGE

When: June 14-17, 2010
Where: Barcelona, Spain

Alejandro Escalona and Lisa Bingham will be attending this meeting and presenting presentations.

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 System - SE Caribbean Case

Seismic hazards in Hispaniola in the aftermath of the 2010 Haiti earthquake

Who: Geologic Society of the Dominican Republic
When: July 12-15, 2010
Where: Santo Domingo, Dominican Republic

Paul Mann is an invited participant of this meeting which will bring together US, Haitian, Dominican and French geoscientists who were involved with the rapid response to the Haiti earthquake, along with policy makers and government officials. The group will also discuss future work in the area including offshore surveys of the island margins and an NSF-CD study of the southern peninsula of Haiti. For information on the Haiti earthquake, visit the

website: <http://www.jsg.utexas.edu/news/rels/011310.html>

AGU meeting of the Americas

When: August 8-13, 2010
Where: Foz de Iguacu, Brazil

Paul Mann is an invited speaker to a special union session called: The 2010 Haiti earthquake: Lessons for seismic hazard and societal impacts in the Caribbean. He is also presenting CBTH work on the Guyana-Suriname margin in a session on Atlantic rift and passive margins.

Research Symposium celebrating the scientific contributions of W.R. Muehlberger

When: August 27-29, 2010
Where: Austin, Texas

Paul Mann and Pete Emmet are convening a session on Central American and Caribbean geology with contributions from former students and colleagues of Bill Muehlberger, who worked in this region as a professor at the University of Texas for four decades. Emmet and former UT PhD student Rob Rogers will present papers on CBTH-related work in Honduras and the Nicaraguan Rise.

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CBTH Yearend meeting

When: September 17, 2010

Where: Austin, Texas

Sponsors, please join us for our annual year end meeting here in Austin. We will be summarizing our results for our second year of Phase II and share our future plans. Sponsor participation is highly recommended and will give you an opportunity to share with us your opinions concerning present and future CBTH work.

Keep an eye on our website for updates and more information for these upcoming events.

<http://www.ig.utexas.edu/research/projects/cbth/links.htm>

Contact Information

Paul Mann: paulm@ig.utexas.edu

Alejandro Escalona: alejandro.escalona@uis.no

Lisa Bingham: cbth@ig.utexas.edu

Ruth Costley: cbth@ig.utexas.edu