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### What's New with the CBTH Project in Houston, Texas and Stavanger, Norway



#### CBTH at AAPG 2014

Congratulations to Bryan Ott and Javier Sanchez, who came in 3rd and 4th place, respectively, at the AAPG 2014 Annual Meeting Student Poster Competition. Congratulations also go out to Carolina Mejia, who received an AAPG Foundation 2014 Grant-In-Aid for her work with sampling cores from deep wells for thermochronology from the Cordillera Oriental of Colombia. Click here to read more.

#### CBTH Student Rocio Bernal completes her PhD on the Lower Magdalena basin, Colombia

Congratulations to Rocio Bernal for passing her PhD defense on April 1, 2014, at the University of Houston and finalizing the final dissertation document at the end of May. She began her job in late May as an explorationist with ConocoPhillips in Houston. Her five-year PhD study which began at UT Austin in 2009-12 was entirely supported by the CBTH project.

# Caribbean Basins, Tectonics, and Hydrocarbons Phase III Paul Mann, University of Houston, USA & Alejandro Escalona, University of Stavanger, Norway http://cbth.uh.edu NEWSLETTER JUNE 2014 VOL. 9 NO. 2

#### What's New

#### UiS IBA Team Places 4th in European region

Congratulations to the UiS team (advisor: Alejandro Escalona) who came in 4th place out of a field of 26 teams in the European region.



#### **UH IBA Team Places 3rd in Gulf Coast**

Congratulations to the 2014 UH Imperial Barrel Team Award Team (co-advisor: Paul Mann) that came in 3rd Place out of a field of 13 teams at the Gulf Coast Imperial Barrel Award Regional Competition using a data set from the Dutch North Sea; IBA team members now working with the CBTH project include Travis Tillman, Katherine Tilghman (team captain), and Luan Nguyen. Click here to read more.

#### Halliburton selects UH for University Grant Program

We thank Halliburton for selecting the University of Houston as one of their five US universities to better understand the role of the Halliburton University Grant Program (UGP) in UH educational and research activities. Halliburton provides UH with Landmark interpretation software along with in-house training courses.

#### Lisa Bingham promoted to Associate Professor

Congratulations to Lisa Bingham for her promotion to Associate Professor in the Department of Petroleum Engineering at the University of Stavanger. Lisa is one of the longest serving workers for the CBTH project: undergrad research assistant at UT Austin in 2002-5; CBTH project manager at UT from 2005-9; and Stavanger as project manager from 2009-2014, and now associate professor.

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#### What's New

#### **Targeted Internships for 2014**

During the summer, we encourage our CBTH graduate students to seek out targeted internships in the oil and gas industry focusing on their Master's or Doctoral study areas. This type of internship is beneficial both for the student by expediting their progress towards graduation, improving the quality of their thesis research through increased exposure to industry-based mentors, and to the company by taking full advantage of the CBTH knowledge database. If your company would be interested in coordinating a targeted internship with a CBTH student, please contact Dr. Paul Mann (pmann@uh.edu) in Houston or Dr. Alejandro Escalona (alejandro.escalona@uis.no) in Stavanger. This summer Karilys Castillo is working on offshore Colombia with Anadarko in The Woodlands and Javier Sanchez will be working with the Latin American group of Repsol, also in The Woodlands.



#### Invoices sent to all CBTH Sponsors for the upcoming year

We are completing Year Three of Phase III on August 31, 2014 and will begin Year One of Phase IV on September 1, 2015. Our deadline for payment is August 15, 2014. We have sent the invoice, proposal for Phase IV, and Phase IV agreement to the person or persons identified as the main contact person for your company. If you have any questions about to whom we have sent the materials, please let us know. Note that the invoice provides instructions for bank wires. To avoid confusion please label your wire "For CBTH project" as indicated.

#### UH-Stavanger geology-geophysics student exchange program is now underway

With all paperwork and protocols in order, the first Stavanger undergrad geology student, Ida Hagen, will arrive in Houston in August to study for the fall semester. Two UH MS students participated in the Svalbard field camp in the summer of 2013 (Jen Campo, Yuribia Munoz). This is the first student exchange program between UH and Norway. Click here for more information.

Video by CBTH student Lucia Torrado summarizes awards to UH students from 2012-14 Click here to watch the video.

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#### CBTH Annual Meeting on Sept. 12, 2014 at UH

As in previous years, CBTH will hold its annual yearend meeting from 7:30 am to 4:30 pm on Friday, September 12, 2014 at Michael Cemo Hall on the University of Houston campus. Sponsoring companies are welcome to bring as many representatives as they would like provided you let us know their names in advance. Breakfast and boxed lunches will be provided. Below you'll find a tentative list of presentations.

Part I: Inti	$\sigma$	
8:00 AM	Paul Mann	Summary of main results for Year 3 of Phase III
8:20 AM	Shenelle Gomez	Overview of improvements to CBTH GIS database
8:35 AM	Jeff Storms	Overview of CBTH website and year-end deliverables to sponsors
8:50 AM	Alejandro Escalona	Update of CBTH PALEOGIS plate model for Caribbean area
9:20 AM	Lisa Bingham	Error Propagation Modeling in Hydrocarbon Exploration
9:35 AM	Bereke Kairanov	Updates on regional mapping and construction of a 3D Earth model
9:50 AM	Coffee break	15 minute break
Part II: GC	OM, Mexico, and the C	aribbean
		Rotational-transtensional opening of the West Florida margin and
10:05 AM	Murad Hasan	kinematic model for GOM opening
10:20 AM	Luan Nguyen	Eastern Mexican transform and crustal structure of the Mexican GOM
		Compilation of published well and seismic data from the Mexican GOM
10:35 AM	David Lankford	and definition of the oil-gas window
		Paleogeography of the northern Caribbean region from Cretaceous to
10:45 AM	Sayyid Suhail Ahmad	Present
		Tectonic transition from rifting to collision to transtension in the
11:00 AM	Javier Sanchez	Honduras area
		Locating the continental edge of Honduras beneath the Nicaraguan
11:15 AM	Bryan Ott	Rise
		Sweet spots of offshore Nicaragua and Cayos from basin modeling,
11:30 AM	Luis Carlos Carvajal	Caribbean Sea
		Structural and stratigraphic evolution of Miocene to recent
		transpression in Hispaniola and explanation of areas with petroleum
11:45 AM	Ian Ambrosius	systems
		Tectonics of the Virgin Islands basin and petroleum potential of the NE
11:55 PM	Patrick Loureiro	Caribbean
12:10 PM	lunch break	1 hour break with lunch provided

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Part II: GC	OM, Mexico, and the (	Caribbean (Continued)
		Prospectivity of the deepwater area of Trinidad and the southern
1:10 PM	Tricia Alvarez	Barbados accretionary prism
1:25 PM	Karilys Castillo	Early history of the Orinoco delta in eastern Venezuela and Trinidad
1 <i>·∆</i> ∩ PM	Carolina Mejia	Balanced cross sections of oil producing areas of the Cordillera Oriental, Colombia
21.101.141	Caronna Wiejia	Subsurface mapping of the Lower Magdalena basin, Colombia, tied to
1:55 PM	Orietta Mata	60 wells
2:10 PM	UiS BSc Student	3D computer modeling from flexural modeling; Magdalena fan case study
2:20 PM	Joan Blanco	Regional transects of the Falcon basin using seismic, outcrop and gravity and magnetic data
2:35 PM	Steve Leslie	History and triggering of long-runout megaslides, Magdalena delta, Colombia
2:50 PM	Jhon Meyer	Structural Traps Related to the Yopal-Borde Llanero Frontal Fault System
	Coffee break	15 minute break
Part III: N	E South America and	W. Africa conjugate margins
		Plate tectonic reconstructions of NE South America-West Africa based
3:20 PM	Kyle Reuber	on improved COB mapping: Testing the mirror hypothesis
	Naila Dowla	The COB of Mauritania revealed by backstripping of passive margin sediments
3:45 PM	Vanessa Alejandro	Comparing rock types in watersheds of West Africa to quality of offshore reservoir rocks
David IV. In	to a vertice of a such a	sis from the CDTU area
rart IV: IN	tegration and synthe	sis from the CBTH area
3:55 PM	Derek Scott	Defining petroleum systems in the CBTH study area using locations of on- and offshore oil and gas seeps
		Basin modeling in the NE Caribbean: Are sediments thick enough for
4:05 PM	Travis Tillman	maturation?
Part V: M	ain areas of study for	Phase IV

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#### **Graduating CBTH Students**



Tricia is completing her regional PhD study of the Trinidad offshore region based on seismic tomography and analysis of a regional grid of deep-penetrating seismic lines and wells. Her PhD is a regional synthesis of linkages between tectonics and sedimentation in the SE Caribbean. She is completing her PhD at the UT Bureau of Economic Geology with financial support of CBTH and under the co-supervision of Dr. Lesli Wood at UT and Paul Mann at UH.

Tricia Alvarez

Rocio is completing her PhD study on the Lower Magdalena basin of Colombia in May 2014. Her research included a complete crust to mantle description of the Lower Magdalena basin and the underlying Caribbean subducted slab using earthquake information, gravity, and seismic reflection data. She also integrated information from earthquake seismology to document the Caribbean slab underlying the basin which she mapped in detail. She completed a fall internship with ConocoPhillips in December 2013, and started a full-time job with ConocoPhillips in May 2014.



Rocio Bernal



Patrick will complete his MS on the Virgin Islands basin and transition to the PhD program at UH to begin working on carbonate sag facies along the conjugate Northern Brazil-West African margin. Patrick won second place in the MS category for best poster at UH Research Day in April.

Patrick Loureiro

Sayyid is finishing his M.Sc. thesis entitled Paleogeography of the northern Caribbean region from Late Cretaceous to Present on June 15, 2014, at the University of Stavanger. Sayyid will continue working at the University of Stavanger during the summer on regional mapping and paleogeography. After the summer, he will become a PhD candidate at the University of Stavanger working with the Low Frequency Consortium led by Professors Alejandro Escalona and Robert James Brown in cooperation with Professor Gennady Goloshubin of UH.



Sayyid Suhail Ahmad

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#### **CBTH Undergraduates graduating in Summer 2014**



Ian Ambrosius

Ian will graduate with a BS in geology and is working on balanced cross sections of Hispaniola and river profiles that can be used to infer areas of active uplift. Ian won the Outstanding Senior award at UH Research Day. Ian will be completing his Hispaniola study in the fall semester.

Kherlen is graduating with her BS in geophysics but will return for the fall semester to complete her paper on Caribbean fault striation measurements.



Kherlen Batbayar



Marie de los Santos

Marie will graduate with a BS in geology in August and is moving on to a MS program at the University of Arizona, the #1 ranked geosciences department in the USA. She will be a research assistant working on a paleoaltimetry study of the Andes with Professor Jay Quade.

Naila is completing her BS in geophysics and moving into the UH PhD program with a study of the opening history of the Mauritanian margin of west Africa.



Naila Dowla

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#### **Newly Arrived CBTH Students**



Vanessa, undergrad and UH Honors College student, is working on a GIS geologic map, offshore bathymetry, and a sandstone database for offshore west African basins in order to link reservoir quality to rock types in onshore drainage basins. Vanessa won the Outstanding Sophomore award at UH Research Day along with the outstanding field mapper award for the undergrad field methods class.

Vanessa Alejandro

Shenelle completed her BS at UH and will be starting a MS project in the fall on the Trinidad-Barbados area and assisting with the GIS database.



Shenelle Gomez

Lourdes is arriving from Venezuela in August to begin a MS study of the Officina area of the Eastern Venezuelan basin.

Lourdes Milano

Luan, MS, is working on gravity and magnetic models for transform faults along the western edge of the GOM.



Luan Nguyen

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#### **Newly Arrived CBTH Students**



David Lankford

David, undergrad geology major and UH Honors College student, is working on compiling published seismic lines from the Mexican GOM and bringing them into segy format using Landmark. He is developing these data into a senior thesis project.

Katherine, a UH MS candidate, is working on digitizing wells using Neuralog for

Derek, a UH undergrad, is using GIS to compile a map of oil and gas seeps in the CBTH study area.



Derek Scott



the summer.

Katherine Tilghman

Travis is using Neuralog to compile wells from the northern Caribbean and GOM and is working on a MS study of basin modeling in the NE Caribbean.



Travis Tillman



#### **Recent Meetings**



#### **AAPG 2013**

The American Association of Petroleum Geologists hosted its annual convention in Houston, TX on April 6-9, 2014. We thank all the sponsors who attended the CBTH luncheon. All of these presentations are available to sponsors through the CBTH web site. To view a list of 4 CBTH posters and 2 oral presentations at the meeting, click here.

#### **GCSSEPM**

Congratulations to CBTH students Bryan Ott, Karilys Castillo, and Marie de los Santos, who tied for third and received Honorable Mention, respectively, at the GCSSEPM Graduate Student Poster Competition. Click here for photos and more information.

#### SEC Regional Gulf Coast Challenge Bowl

Congratulations to PhD student Joan Blanco for her second place finish in the SEG Regional Gulf Coast Challenge Bowl, February 2014. Click here to read more.

UNIVERSITY of HOUSTON | EARTH AND ATMOSPHERIC SCIENCES

2014 STUDENT RESEARCH DAY & ALUMNI/INDUSTRY OPEN HOUSE

#### UH Research Day and Industry/Alumni Open House

The University of Houston held its annual Research Day on Friday, April 25 from 1:30 to 3:30 pm. Of the 14 UH award-winning presentations by undergrad and grad students in the Dept. of Earth and Atmospheric Sciences, 7 of them were presented by grad students supported by the CBTH project. We thank our poster judges from several companies. Click here for more information.



#### AGILE Conference 2014

Lisa Bingham attended the AGILE 2014 conference from June 3-6 in Castallón, Spain, presenting a talk entitled: "Error propagation in a fuzzy logic spatial multi-criteria evaluation".

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#### **Upcoming Meetings**



#### **EAGE Annual Conference 2014**

CBTH students and researchers will present their CBTH-funded research at the EAGE Conference in Amsterdam, The Netherlands, on June 16-19, 2014.

o Sayyid Suhail Ahmad and Alejandro Escalona: Paleogeographic reconstructions of the northern Caribbean

o Elisabeth Johansen, Karen Leever and Alejandro Escalona: Magdalena fan case study: Use of 3D analogue modelling to improve seismic interpretation

#### Training courses in summer 2014:

#### **Neuralog**

Four CBTH students attended a one-day training course in May.

#### Petrel

A one-day training course for UH students is planned in June.

#### **3D MOVE Structural Restoration**

Two CBTH students, David Lankford and Patrick Loureiro, will participate in this Midland Valley training course in June.

#### **Nautilus**

Kyle Reuber is participating with other ION employees on a field trip to view Alpine structures and ophiolites in western France led by Drs. James Pindell and Rod Graham.

#### Structural restoration and thermochronology training

Dr. Andres Mora of Ecopetrol-ICP in Colombia will provide a five-day class to UH students and researchers in August, 2014.



#### Thanks to our current sponsors!

As we continue into Phase III of the CBTH project, we would like to thank our company sponsors for their ongoing support in providing data, software, funding, and knowledge to further student research in Caribbean geology. Your support has provided many opportunities for CBTH students to pursue research projects in the region and your efforts are truly appreciated.

