CBTH
Conjugate Basins, Tectonics, and Hydrocarbons
APRIL 2021 NEWSLETTER VOL.16 NO.1

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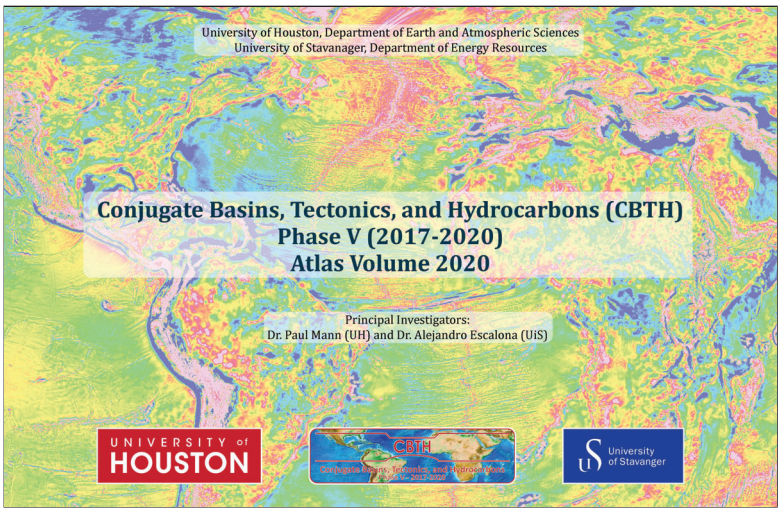
What's New with the CBTH Project in Houston, Texas and Stavanger, Norway

CBTH Annual Sponsors Meeting 2020

Thanks to all of our sponsors and colleagues who attended the CBTH Annual Sponsors Meeting on Friday, September 25, 2020! At this year's meeting, we will provided updates on research from Phase V, Year 3 and introduced future studies for Phase VI.



CBTH Atlas and FTP Data Release for Phase V, Year 3

The Phase V, Year 3 large-format atlas and FTP data release has now been sent out to sponsors. We appreciate your patience as we have worked to bring you our largest atlas compilation ever, clocking in at over 400 pages. All of this year's FTP deliverables will be made available on the Geopost data portal over the forthcoming weeks. If you have any questions about this year's deliverables, please contact cbthproject@gmail.com

Student award winners at AAPG 2020

Congratulations to CBTH graduate students Nahid Hasan, Hualing Zhang, and Jacob Miller, who placed 2nd, 3rd, and 4th, respectively in the Student Poster Comptetition at the 2020 AAPG Annual Convention and Exhibition. To read more, click here.

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What's New

Best Paper award from Interpretation

Congratulations to CBTH PhD grad Dr. Kyle Reuber and Dr. Paul Mann, who jointly received the award for Best Paper in the SEG-AAPG journal Interpretation for papers published in 2019. To view a video of the awards at the 2020 online SEG meeting, click here.

AAPG Grover E. Murray Memorial Distinguished Educator Award

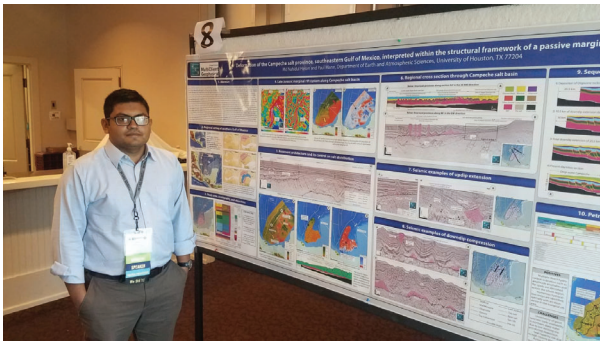
Congratulations to Dr. Paul Mann, who jointly received this award with Dr. Abel Idowu Olayinka (Univ of Ibadan, Nigeria) at the online 2020 AAPG ACE meeting. To read more, click here.

Awards for CBTH students at the 2020 UH-HGS Sheriff Lecture

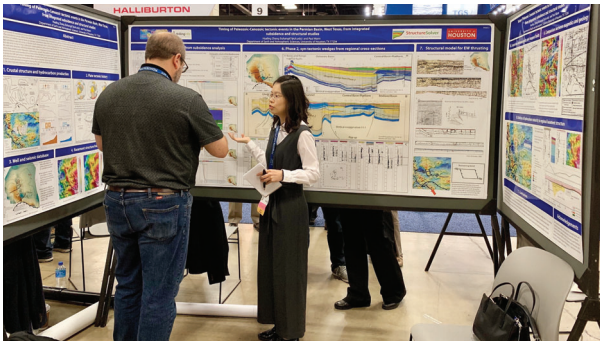
Congrats to Bryan Moore (1st Place, Undergrad/1st year MS category), Michael Martinez (2nd Place, Undergrad/1st year MS category), Maddie Bishop (2nd place, 2nd Year MS/1st Year PhD category), Sean Romito (Honorable Mention, Advanced PhD Category), and Hualing Zhang (3rd Place, Advance PhD Category), for their award-winning presentations at the 2020 UH-HGS Sheriff Lecture held via Zoom on November 8-9, 2020.

A productive year of working remotely

As 2020 came to a close and 2021 began, students and researchers at the CBTH Project remain highly productive while continuing to work remotely. This year, students and researchers gave 62 total presentations at online conferences, the most we've ever had, and we currently have 33, peer-reviewed publications released or in press during 2020, marking another successful year as we close out Phase V and begin Phase VI. This spring and summer, we will continue presenting at virtual conferences and events, and we'll also continue to schedule online meetings with sponsors and prospective sponsors. We will continue to adapt as the situation evolves and wish all our sponsors and colleagues the best.



PhD student Nahid Hasan presents at GeoGulf 2020



PhD student Hualing Zhang presents at AAPG 2019

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Graduating Students at UH

WESTON CHARLES joined the CBTH research group in May 2019 as an undergraduate geology major and worked on the CBTH GIS database. His undergraduate research was a study of regional flexural effects of the Caribbean and Atlantic plates that he presented at the Fall AGU meeting. He is currently working on his MS in geophysics at LSU supervised by Dr. Patricia Persaud (topic: Using GRACE satellite gravity data to map groundwater movement in Louisiana)

TAREK GALHOM joined the CBTH Project in fall 2019, was supported as a Fulbright scholar from Egypt and completed his two-year MS study, titled "Structural restoration and basin modeling of the Tarfaya Dakhla basin of the Atlantic passive margin of southern Morocco," in May 2020. He has returned to Egypt where he works as a Prospect Generation Geophysicist at Khaida Petroleum Company (Apache) in Cairo, Egypt.

JACK KENNING joined the CBTH Project in 2017 and completed his three-year PhD study, titled "Mesozoic- Cenozoic tectonic controls on basin formation and hydrocarbon potential of the deep-water Mexican sector of the Gulf of Mexico Basin," in May 2020. Two of Jack's dissertation chapters are now published articles and the third will be submitted for review. In June 2020, Jack began working with the International New Ventures group at ConocoPhillips in Houston.

JACOB MILLER joined the CBTH Project in May 2019 as an MS student. His MS thesis topics include mapping tectonostratigraphy and integrating gravity and magnetic data of the Grenada and Tobago basins in the Caribbean. Jacob was a member of the 2019 IBA World Championship team and began working at BP in January 2021.

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Graduating Students at UH

MATTHEW STOREY joined the CBTH Project in May 2019 and completed his two-year MS study, titled "Tectonic setting, structure, and seismic stratigraphy of the Apalachicola Rift and its overlying sag basin in the northeastern Gulf of Mexico," in May 2020. He completed his one year term as president of the SEG Wavelets student group at UH. In the spring of 2020, Matthew participated in the SEG EVOLVE program which is a team-based class in exploration methods. He worked with TGS in the fall of 2020.

MARCO URDANETA joined CBTH in January 2020 and assisted in managing the reference database as well as the stratigraphy, wells, and outcrops for the GIS database. As an undergraduate, his research focused on the relation between the trends of orogenic belts and variations in the amplitude of extension in the areas of the south, central, and north Atlantic rifted margins. After completing his B.S. in geology in fall 2020, he began working at Edge Systems/PML LLC in Midland, Texas.

MARCUS ZINECKER obtained his BS degrees in geology and geophysics from the University of Houston in 2014, where he graduated Cum Laude and with University Honors. In fall 2017, he began his PhD studies at the University of Houston, and joined the CBTH team in spring 2018. His PhD project included the tectonostratigraphy and hydrocarbon potential of offshore northwest Africa and its conjugate margins, as well as the effect of two-phase rifting on the subsidence history and hydrocarbon generation potential of the southeast Gulf of Mexico. Marcus was a team member on the 2018 University of Houston AAPG Imperial Barrel Award (IBA) team, a summer intern with BP in Alaska in 2019, and completed his PhD dissertation in summer 2020. He is now working with the Western Gulf of Mexico team at BP.

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New Students at UH

CHESNEY PETKOVSEK joined the CBTH project as a PhD student in January 2020. She completed her MS in Engineering Science with emphasis in geology and BS in Geology at the University of Mississippi. Her PhD project involves seismic interpretation, basin analysis, and sequence stratigraphy to better understand hydrocarbon potential in offshore northwestern Africa.

ELLYA SAUDALE is an MS candidate who joined the CBTH Project in January 2021. She has a BS in Geology and MS in Petroleum Engineering and worked for Schlumberger and Western Geco in roles ranging from senior geoscience consultant to asset evaluation and seismic interpreter.

KENNETH SHIPPER is a senior geophysics major and began working for the CBTH project in January 2021. His research studies changing stress directions along major strike-slip faults in California and the Caribbean. He is the president of the undergrad student group, Geosociety, and is the student coordinator of the weekly Structure and Tectonics seminar at UH.

Recent Meetings

AAPG Virtual Research Symposium: Southeast Caribbean & Guiana Basins

The AAPG Virtual Research Symposium: Southeast Caribbean & Guiana Basins was held online on September 17-18, 2020. A full list of CBTH presentations can be found below. For more information, click here.

- o Tricia Alvarez (now at Heritage Petroleum, Trinidad), Paul Mann, and Lesli Wood - Tectonic evolution of sedimentary basins around the arcuate southeastern margin of the Caribbean Plate
- o Karilys Castillo (now at Oxy) and Paul Mann - Structure, stratigraphy, and hydrocarbon potential of the easternmost part of the Eastern Venezuela Basin
- o Mei Liu - Using regional gravity model to define the crustal setting of recent, giant oil discoveries in Guyana and Suriname
- o J.C. Hippolyte and Paul Mann - Neogene paleostress and structural evolution of Trinidad: Rotation, strain partitioning, and strike-slip reactivation of an obliquely-colliding thrust belt
- o Jacob Miller and Paul Mann - Stratigraphic and radiometric evidence for the Oligocene emergence of the southern Lesser Antilles Volcanic Arc between the Grenada and Tobago basins
- o Bryan Moore and Paul Mann - Effects of subducting bathymetric highs on variations in the wedge taper angles of the Barbados Accretionary Prism

AAPG 2020 Annual Convention & Exhibition

The American Association of Petroleum Geologists was held virtually on September 29 – October 1, 2020. A full list of CBTH presentations can be found below. For more information, click here.

- o Sharon Cornelius and Pete Emmet - Geothermal gradients in the deep-water Gulf of Mexico and their relationship to overpressure: Garden Banks, Green Canyon, Keathley Canyon, and Walker Ridge
- o Md Nahidul Hasan, Paul Mann, Jeniffer Masy, and Robert Sorley - Explaining differing styles of salt deformation in the Campeche and Yucatan salt basins, southern Gulf of Mexico
- o Mei Liu and Paul Mann - Regional extent and tectonic origin of the Mesozoic marginal rift system of the deep-water Gulf of Mexico Basin
- o Jacob Miller, Paul Mann, Jeniffer Masy, and Robert Sorley - Structure, stratigraphy, and recent hydrocarbon indicators in the Grenada and Tobago basins, southeastern Caribbean Sea
- o Matthew Storey, Paul Mann, and Mei Liu - Tectonic setting, structure, and hydrocarbon potential of pre-salt, Mesozoic rift basins in the northeastern Gulf of Mexico
- o Hualing Zhang, Paul Mann, and Dale Bird - Integration of structural analysis and gravity modeling in the Permian Basin, West Texas

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Recent Meetings

GeoGulf 2020 Annual Convention & Exposition

GeoGulf 2020, the 70th GCAGS/GCSSEPM Convention and Exposition, was held on September 30 – October 2, 2020 online and in-person in Lafayette, LA. For more information, click here.

- o Muhammad Nawaz Bugti and Paul Mann - Regional basin modeling and hydrocarbon maturation along the Port Isabel passive margin foldbelt, northwestern Gulf of Mexico
- o Muhammad Nawaz Bugti and Paul Mann - Insights into the basement structure beneath the thick allochthonous salt canopy in the deepwater U.S. Gulf of Mexico
- o Sharon Cornelius and Pete Emmet - Relationship between geothermal and geopressure gradients in the deepwater western Gulf of Mexico
- o Md Nahidul Hasan and Paul Mann - Deformation of the Campeche salt province, Southeastern Gulf of Mexico, interpreted within the structural framework of a passive margin foldbelt

2020 HGS-PESGB Africa Conference

The 2020 HGS-PESGB Africa Conference was held online every Thursday in October from 8 am to 10 am CST. For more information, click here. A full list of CBTH presentations is below.

- o Benjamin Miller, Paul Mann, Marcus Zinecker, Tarek Galhom, and Brook Runyon - Mega-regional potential fields and seismic reflection study of hydrocarbon plays along the passive-rifted margin of northwest Africa
- o Sean Romito, Paul Mann, and Ana Krueger - Understanding the sub-salt rifting history of the South Gabon basin through interpretation and modeling of the directly conjugate Camamu and Almada margin, offshore northeastern Brazil
- o Marco Urdaneta, Sarah K. Meyer, and Paul Mann - A new method using marine satellite gravity data to distinguish between volcanic and non-volcanic margins of the South Atlantic Ocean
- o Hualing Zhang, Paul Mann, and Dale Bird - Synthesis of crustal structure and hydrocarbon potential: north Gabon-Equatorial Guinea (west Africa) and Sergipe-Alagoas (northeast Brazil) conjugate margins
- o Marcus Zinecker and Paul Mann - The Guinea-Demerara volcanic conjugate margins: comparisons of their rifted crustal structure and overlying passive margin stratigraphy
- o Marcus Zinecker and Paul Mann - Mesozoic to recent tectonostratigraphy, paleogeography, and hydrocarbon prospectivity of the Guinea Plateau, northwestern Africa

Recent Meetings

AAPG Virtual Research Symposium: Pacific Basins

The AAPG Virtual Research Symposium: Pacific Basins was held on October 22, 2020. For more information, click here. See below for a full list of CBTH Presentations.

- o Maddie Bishop and Paul Mann - Direct hydrocarbon indicators associated with Oligocene-recent folds of the Sandino forearc basin, offshore Pacific margin of Nicaragua

GSA 2020 Connects Online

GSA 2020 Connects Online was held online on October 26-30, 2020. For more information, click here. See below for a full list of CBTH Presentations.

- o Lei Sun and Paul Mann - Tectonic setting of the 2019-2020 Puerto Rico earthquake swarm based on integration of active faults, earthquake focal mechanisms, and tectonic geomorphology

HGS Annual Sheriff Lecture: Hess's Journey Into an Emerging Superbasin

The HGS Annual Sheriff Lecture, with a keynote speech from Tim Chisolm titled “Hess's Journey Into an Emerging Superbasin,” was held on November 9, 2020. For more information, click here. See below for a full list of CBTH presentations.

- o Lila Bishop - Direct hydrocarbon indicators associated with Oligocene-recent folds of the Sandino forearc basin, offshore Pacific margin of Nicaragua
- o Nawaz Bugti - Can the allochthonous salt canopy reveal the basement structure beneath it? A case study from the Deepwater Gulf of Mexico
- o Weston Charles - An analysis of the flexural deformation of the Colombian and Venezuelan basins due to their subduction beneath northern South America and the Greater Antilles
- o Md Nahidul Hasan - Explaining structural styles of the Campeche salt province, southwestern Gulf of Mexico, within the framework of a passive margin fold belt
- o Mei Liu - Regional extent and tectonic origin of the Mesozoic marginal rift system of the deep-water Gulf of Mexico basin
- o Michael Martinez - Predicting areas of future giant oil and gas field discoveries along the South America-West Africa conjugate margins
- o Benjamin Miller - Testing the continuity of the Lesser Antilles forearc provinces based on gravity modeling and a compilation of radiometric age dates

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Recent Meetings

HGS Annual Sheriff Lecture: Hess's Journey Into an Emerging Superbasin (continued)

- o Jacob Miller - Structure, stratigraphy, and recent hydrocarbon indicators in the Grenada and Tobago basins, southeastern Caribbean Sea
- o Bryan Moore - Along-strike structure and zonation of the Barbados accretionary prism: Taper angle vs. subducting highs
- o Sean Romito - Understanding the sub-salt rifting history of the South Gabon basin through interpretation and modeling of the directly conjugate Camamu and Almada margin, offshore northeastern Brazil
- o Marco Urdaneta - How gravity and magnetic maps can be used to identify seaward-dipping reflectors in the South Atlantic
- o Hualing Zhang - Crustal structure of the Sergipe-Alagoas rifted-passive margin, northeastern Brazil based on gravity modeling

AAPG Virtual Research Symposium: Mexican Basins

The AAPG Virtual Research Symposium “Mexican Basins: Advancing the Understanding of Mexico's Geology and Hydrocarbon Potential” will be held online on November 19-20, 2020. For more information including video recordings, click here. See below for a full list of CBTH presentations.

- o Md Nahidul Hasan and Paul Mann - Relating structural style of Campeche Salt Basin, Southwestern Gulf of Mexico to subtle, northward dip variations in its underlying basement

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Recent Meetings

AGU FALL MEETING

AGU Fall Meeting 2020

The 2020 AGU Fall Meeting was be held online from December 1-17, 2020. For more information including video recordings, click here. See below for a full list of CBTH presentations.

- Lila Bishop and Paul Mann - Latest Eocene-Early Oligocene magmatic and structural reorganization of the Sandino forearc basin and Central American volcanic arc
- Sharon Cornelius, Session Chair for MR008 - Geological Implications of a Linear Relationship Between Geothermal and Geopressure Gradients Posters
- Sharon Cornelius - Contrasting geothermal and geopressured environments of the western and central deepwater Gulf of Mexico
- Md Nahidul Hasan and Paul Mann - Basement controls on the downdip transport direction and internal salt structures of the Campeche passive margin foldbelt, southeastern Gulf of Mexico
- Mei Liu, Dale Bird, and Paul Mann - Distribution and thickness of crustal types of the Greater Gulf of Mexico region based on constrained 3D gravity inversion
- Benjamin Miller and Paul Mann - Testing the continuity of Lesser Antilles forearc provinces based on gravity modeling and a compilation of radiometric age dates
- Jacob Miller and Paul Mann - Stratigraphic and radiometric evidence for the Oligocene emergence of the southern Lesser Antilles Volcanic Arc between the Grenada and Tobago Basins
- Bryan Moore and Paul Mann - Effects of subducting bathymetric highs on variations in the wedge taper angles of the Barbados Accretionary Prism
- Sean Romito and Paul Mann - Structural restoration of the ultrathin, Camamu-Almada rifted-passive margin, northeastern Brazil: Relations between crustal stretching, sedimentation, and uplift
- Matthew Storey and Paul Mann - Seismic imaging of pre-salt half-grabens along low-angle normal faults in the northeastern Gulf of Mexico
- Lei Sun, Paul Mann, and Jean-Claude Hippolyte - Puerto Rico's 2019-2020 earthquake swarm: Conjugate strike-slip and normal faults within an upper-crustal intra-plate setting
- Marco Urdaneta, Sarah Meyer, and Paul Mann - Mega-regional mapping of seaward-dipping reflectors along Cretaceous, conjugate volcanic margins of South America and West Africa using satellite gravity data
- Hualing Zhang, Paul Mann, and Dale Bird - Deep crustal structure of the Sergipe-Alagoas rifted-passive margin, northeastern Brazil based on deeply-penetrating reflection data and 2D gravity modeling
- Marcus Zinecker and Paul Mann - The Guinea-Demerara volcanic conjugate margins: comparisons of their rifted crustal structure and overlying passive margin stratigraphy

Recent Meetings

AAPG Virtual Research Symposium: South Atlantic Basins

The AAPG Virtual Research Symposium: South Atlantic Basins was held online on December 3-4, 2020. For more information, click here. See below for a full list of CBTH presentations.

- o Sean Romito, Ana Krueger, and Paul Mann - Structural restorations of the Camamu-Almada Passive Margin, Northeastern Brazil
- o Marco Urdaneta, Sarah Meyer, Paul Mann - Filtering gravity data to locate boundaries of volcanic and non-volcanic margins of the South Atlantic Ocean
- o Hualing Zhang, Paul Mann, and Dale Bird - Integration of structural analysis and 2D gravity modeling of the ultra-thin Sergipe-Alagoas rifted-passive margin, northeastern Brazil

Upcoming Meetings

AAPG ACE 2021

CBTH students and researchers will be presenting at this year's AAPG Annual Convention and Exhibition on September 26- October 1 in Denver, Colorado. Below you'll find a full list of accepted CBTH presentations. For more information, click here.

- o Maddie Bishop - Progressive, along-strike deformation of the Sandino-Tempisque-Terraba forearc basin of Nicaragua and Costa Rica and impact on its hydrocarbon prospectivity
- o Nawaz Bugti - Basin modeling to constrain the hydrocarbon potential of the Port Isabel foldbelt, northwestern US Gulf of Mexico
- o Sharon Cornelius - Contrasting overpressure environments for the western and central deepwater Gulf of Mexico
- o Nahid Hasan - Rifted, continental basement morphology of the Campeche salt basin and its controls on pods of source rock maturity, southern Gulf of Mexico
- o Paul Mann - Megaregional seismic mapping of the Moroccan rifted-passive margin of the Central Atlantic Ocean
- o Michael Martinez - Why was the Permian basin unaffected by widespread Miocene and younger Basin and Range normal faulting?
- o Bryan Moore - The Unresolved Origin of Source Rocks for Hydrocarbons in the Barbados Accretionary Prism: Squeezed From Sources Within Prism Itself or Derived From Organic-Rich Blocks Scraped Off the Downgoing Plate?
- o Sean Romito – Cretaceous-Cenozoic structural and magmatic evolution of the Camamu-Almada rifted-passive margin, northeastern Brazil
- o Hualing Zhang - Integration of basin analysis and gravity modeling for the Sergipe-Alagoas rifted-passive margin, northeastern Brazil

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Recent Theses and Dissertations

Galhom, T., 2020, Structural restoration and basin modeling of the Tarfaya Dakhla basin of the Atlantic passive margin of southern Morocco, MS thesis, University of Houston, 86 p.

Kenning, J., 2020, Mesozoic-Cenozoic tectonic controls on basin formation and hydrocarbon potential of the deep-water Mexican sector of the Gulf of Mexico Basin, PhD dissertation, University of Houston, 270 p.

Leslie, S., 2020, Structure, stratigraphy, and hydrocarbon potential of the Colombian Caribbean margin and tsunamigenic hazards in the western Caribbean Sea and the South China Sea, PhD dissertation, University of Houston, 192 p.

Miller, J., 2020, Stratigraphic, gravimetric, And radiometric evidence for the Oligocene emergence of the nascent Lesser Antilles volcanic arc between the Grenada and Tobago basins, southeastern Caribbean Sea, MS thesis, University of Houston, 105 p.

Storey, M., 2020, Tectonic setting, structure, and seismic stratigraphy of the Apalachicola Rift and its overlying sag basin in the northeastern Gulf of Mexico, MS thesis, University of Houston, 102 p.

Zinecker, M., 2020, Structural and Stratigraphic Evolution of Three Mesozoic, Rifted-Passive Margins: Guinea Plateau, Demerara Rise, and the Southeastern Gulf of Mexico, PhD dissertation, University of Houston, 302 p.

Recent and Upcoming Publications

Alvarez, T., Mann, P., Vargas, C.A., and Wood, L.J., 2021, Gravity, seismic reflection and tomographic constraints on the subduction to strike-slip transition; southeastern Caribbean Plate boundary zone, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Alvarez, T., Mann, P., and Wood, L.J., 2021, Tectonics and evolution of sedimentary basins along the arcuate southeastern margin of the Caribbean plate, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Blanco, J.M. and Mann, P., 2021, Subsurface geology of La Vela Basin, offshore Venezuela: Examples of basement and carbonate-hosted, liquid and gas hydrocarbon reservoirs, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Carvajal-Arenas, L.C., Torrado, L., Mann, P., and English, J., 2020, Basin modeling of Late Cretaceous/Mio-Pliocene petroleum system of the deep-water eastern Colombian basin and South Caribbean Deformed Belt, Marine and Petroleum Geology, v. 121, p. 104511. doi: 10.1016/ j.marpetgeo.2020.104511.

Castillo, K., and Mann, P., 2021, Structure, stratigraphy and petroleum potential of the easternmost part of the Eastern Venezuelan foreland basin: in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

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Recent and Upcoming Publications

Cedeno, A., Ahmed, M., Escalona, A., and Abrahamson, P., 2021, Tectonostratigraphic evolution of the western Barbados accretionary prism and the eastern Tobago forearc basin: Implications for petroleum systems: in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Cedeno, A., Ohm, S., and Escalona, A., 2021, Barbados petroleum and its role in understanding distribution of Cretaceous source rocks in the southeastern Caribbean margin: Insights from an organic geochemistry study, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Cedeno, A., Ohm, S., Escalona, A., Narain, E., and Jager, J., 2021, Source rocks in the Guyana-Suriname basin: Insights from geochemical investigations of 15 heavy oils from onshore Suriname, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Cornelius, S. and Emmet, P., 2021, Relationship between geothermal and geopressure gradients in the deepwater Gulf of Mexico: Garden Banks, Green Canyon, Keathley Canyon and Walker Ridge, Interpretation, in press.

Escalona, A., Norton, I., Lawver, L., and Gahagan, L., 2021, Quantitative plate tectonic reconstructions of the Caribbean region from Jurassic to present, Eastern Caribbean-NE South American Boundary: in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Escalona, A., Watson, L., and Ahmad, M., 2021, Late Cretaceous-Pliocene paleogeography of the circum-Caribbean region based on quantitative plate reconstruction and georeferenced databases, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Figueira, B., and Escalona, A., 2021, Overview of the petroleum system of the Gulf of Paria, Eastern Venezuela Basin, Trinidad-Venezuela - implications from plate to province scale, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, , in press.

Gomez, S., Mann, P., Alvarez, T., and Krueger, A., 2021, Tectonostratigraphic evolution of the Barbados accretionary prism and surrounding sedimentary basins within the southeastern Caribbean- northeastern South America arcuate, strike-slip to subduction transition zone, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

Hippolyte, J.C., Mann, P., and Weber, J.C., 2021, Neogene paleostress and structural evolution of Trinidad: Strain partitioning, rotation, and strike-slip reactivation of a colliding, accretionary wedge, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems, AAPG Memoir 123, in press.

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Recent and Upcoming Publications

Kenning, J. and Mann, P., 2021, Control of structural deformation and sedimentation by the interaction of salt and shale tectonics across the deep-water Lamprea fold-belt and Salina del Bravo salt province, western Gulf of Mexico: Journal of Structural Geology, to be submitted.

Kenning, J. and Mann, P., 2020, Control of structural style by large, Paleogene, mass transport deposits in the Mexican Ridges foldbelt and Salina del Bravo, western Gulf of Mexico, Marine and Petroleum Geology, v. 115, p. 104254. doi: 10.1016/j.marpetgeo.2020.104254

Kenning, J. and Mann, P., 2020, Regional thermal maturity modeling of hydrocarbons along the deep-water Yucatan margin, southern Gulf of Mexico, in Davison, I., Hull, J., and Pindell, J., eds., The Basins, Orogens, and Evolution of the Southern Gulf of Mexico and Northern Caribbean, Geological Society, London, Special Publication 504, p. 203-231. doi: 10.1144/SP504-2019-252.

Leslie, S., and Mann, P., 2020, Structure, stratigraphy, and petroleum potential of the deepwater Colombian basin, offshore northern Colombia, Interpretation, v. 8, n. 4, p. 1N-T1095. doi: 10.1190/INT-2020-0028.1

Mann, P. and Pierce, S., 2020, Stratigraphy and structure of regionally-isolated hydrocarbon occurrences in the Azua basin, south-central Dominican Republic (northeastern Caribbean), in Davison, I., Hull, J., and Pindell, J., eds., The Basins, Orogens, and Evolution of the Southern Gulf of Mexico and Northern Caribbean, Geological Society, London, Special Publication 504, p. 437-478. doi: 10.1144/SP504-2019-241.

Pachon-Parra, L., Mann, P., and Cardozo, N., 2020, Regional subsurface mapping and 3D flexural modeling of the obliquely converging Putumayo foreland basin, southern Colombia: Interpretation, v. 8, n. 4, p. 1N-T1095. doi: 10.1190/INT-2020-0021.1

Punnette, S. and Mann, P., 2021, Subsurface structure of the Hinge Line fault zone and its control on the distribution of gas fields of the North Coast Marine Area (NCMA) of offshore, northern Trinidad, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems , AAPG Memoir 123, in press.

Punnette, S., Wood, L., and Mann, P., 2021, Late Quaternary sedimentary evolution of the North Coast Marine Area (NCMA) of northern, offshore Trinidad, in C. Bartolini (ed.), South America-Caribbean-Central Atlantic Boundary: Tectonic Evolution, Basin Architecture and Petroleum Systems , AAPG Memoir 123, in press.

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Recent and Upcoming Publications

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Tillman, T. and Mann, P., 2020, Regional hydrocarbon potential of the northeastern Caribbean based on integration of sediment thickness and source rock data, in Davison, I., Hull, J., and Pindell, J., eds., The Basins, Orogens, and Evolution of the Southern Gulf of Mexico and Northern Caribbean, Geological Society, London, Special Publication 504, p. 401-436. doi: 10.1144/SP504-2019-244.

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2020 Awards

- o Nahid Hasan, PhD candidate, 2nd Place, AAPG 2020 Annual Meeting Student Poster Competition
- o Hualing Zhang, PhD candidate, 3rd Place, AAPG 2020 Annual Meeting Student Poster Competition
- o Jacob Miller, MS graduate, 4th Place, AAPG 2020 Annual Meeting Student Poster Competition
- o Bryan Moore, MS Candidate, 1st Place Poster Presentation, Undergraduate/1st Year MS category, Houston Geological Society and University of Houston Robert E. Sheriff lecture series and student poster competition
- o Michael Martinez, MS Candidate, 2nd Place Poster Presentation, Undergraduate/1st Year MS category, Houston Geological Society and University of Houston Robert E. Sheriff lecture series and student poster competition
- o Lila Bishop, MS Candidate, 2nd Place Poster Presentation, 2nd Year MS/1st Year PhD category, Houston Geological Society and University of Houston Robert E. Sheriff lecture series and student poster competition
- o Sean Romito, PhD Candidate, Honorable Mention, Advanced PhD category, Houston Geological Society and University of Houston Robert E. Sheriff lecture series and student poster competition
- o Hualing Zhang, PhD Candidate, 3rd Place Poster Presentation, Advanced PhD category, Houston Geological Society and University of Houston Robert E. Sheriff lecture series and student poster competition
- o Hualing Zhang, PhD candidate, 2nd Place, Research presentation, Annual HGS Geoscience Student Expo, Houston
- o Sean Romito, PhD candidate, Honorable Mention, Research presentation, Annual HGS Geoscience Student Expo, Houston
- o Mei Liu, 3rd Place, PhD candidate, "Elevator pitch" presentation, Annual HGS Geoscience Student Expo, Houston
- o Kyle Reuber and Paul Mann, Best Paper award for the SEG/AAPG journal Interpretation in 2019

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

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