

Mariana Iulia. Olariu

Professional Summary

October 16, 2023

Business address: The University of Texas at Austin
Bureau of Economic Geology
University Station, Box X
Austin, TX 78713-8924
Telephone: (512) 475-7566
E-mail address: mariana.olariu@beg.utexas.edu

Professional Preparation

Academic Background

Ph.D. Geosciences, The University of Texas at Dallas, 2007

B.S. Geology and Geophysics, University of Bucharest, Romania, 1995

Professional Appointments

Present Position: Research Associate--Clastic Sedimentologist, Bureau of Economic Geology, The University of Texas at Austin (May 2012 - Present).

Research Engineering/Scientist Associate III, Department of Geological Sciences, The University of Texas at Austin (2008 - 2012).

Teaching Assistant, Geosciences Department, The University of Texas at Dallas (2001 - 2007). Introduction to Geophysics; Oceanography; Oceans; Data Analysis; Earthquakes & Volcanoes; Computers for Geoscientists.

Research Scientist, Institute of Educational Sciences, Bucharest, Romania (1995 - 2000). Statistical analysis of students' achievements and evaluation of educational programs related to the Earth Sciences curriculum.

Theses

Sedimentological Study of Tigveni Sandstone, Arges County, Romania (Miocene deposits from Dacic Basin)

Dissertations

Development and Testing of Methods for Analyzing High Resolution Three-Dimensional Digital Outcrop Geology: Big Rock Quarry, Arkansas

Continuing Education Courses Taken

DrillingInfo training session for Texas oil, gas, and land usage: DrillingInfo, Austin, Tex., May 3, 2017

Landmark Decision Space Geosciences: Halliburton, Austin, Tex., December 9-16, 2015

Neuralog Log Solutions Training: Neuralog Log Solutions, University of Texas Institute for Geophysics, ROC 1.603, Austin, Texas, November 18-20, 2014

Sequence stratigraphy applied to petroleum exploration: SEPM short course, Exxon Mobil, San Antonio, Texas, April 19, 2008

Areas of Expertise

Areas of Expertise

Building and interpretation of 3-D digital virtual outcrops based on lidar data

Clastic sedimentology and sequence stratigraphy (use of outcrop and subsurface data to interpret shallow and deep-water ancient depositional systems)

Data analysis

Multispectral image analysis and image processing (Remote Sensing, GIS)

Awards

Awards and Honorary Societies

Scholarship, AAPG Southwest chapter, 2005

GCSSEPM Ed Picou Fellowship Grant for Graduate Studies in the Earth Sciences, 2003

Dr. Oscar Wilhelm Award, University of Texas at Dallas, 2002

Merit Scholarship, University of Bucharest, 1991 - 1995

Service

University Committees

Member, Bureau's Grants, Appointments and Awards Committee (GAAC), The committee meets periodically throughout the year and helps identify and nominate worthy BEG employees for key awards within the university and externally from professional societies and others, Bureau of Economic Geology, The University of Texas at Austin, August 15, 2014-August 15, 2017

Outreach Activities

Muddy shorelines in the Paleogene Wilcox deltas, Texas Gulf Coast - core workshop: presented to Austin Geological Society, Austin, Tex., March 25-28, 2019.

Teaching and Advising

Student Committee Participation

Member, M.S. Committee, Izaak Ruiz, Characterization of the High Island 24L Field for Modeling and Estimating CO₂ Storage Capacity in the Offshore Texas State Waters, Gulf of Mexico, University of Texas at Austin, 2019

Presentations

Presentations

Muddy shorelines of the Paleogene Wilcox Deltas, South Texas Gulf Coast: presented to BEG 3E Research Symposium, Austin, Tx, October 18, 2019.

Early Miocene High Island Delta System, Offshore Texas and Louisiana: presented at AAPG annual meeting, San Antonio, Tex., May 19-22, 2019.

Depositional History and Shoreline Evolution of the Upper Wilcox Group and Lower Reklaw Formation, Northern Bee County, Texas: presented to AAPG Annual Meeting, Salt Lake City, Utah, May 20-23, 2018.

Intra- and Inter-sequence Process Changes of Mixed Energy Deltas in Outcrop and Subsurface: Maastrichtian Fox Hills, Washakie Basin, Wyoming: presented to AAPG Annual Meeting, Salt Lake City, Utah, May 20-23, 2018.

Muddy Shorelines of the Paleogene Wilcox Deltas, South Texas Gulf Coast: presented to AAPG Annual Meeting, Salt Lake City, Utah, May 20-23, 2018.

High-Level Technical Evaluation of Sub-Basinal Storage: presented to The University of Texas at Austin, presented at 4th Conference on Carbon Capture and Storage, Austin, Tex., January

30, 2018.

Deep Subsurface Geology: Value in Sandstone Pores: Offshore CO₂ Storage Resource Assessment of the Northern Gulf of Mexico (Texas-Louisiana) (presenters: M. I. Olariu, R. H. Trevino, and T. Meckel): presented at CO₂ Capture and Subsurface Geologic Storage Open House, Beaumont, Tex., June 21, 2017.

Offshore CO₂ Storage Resource Assessment of the Northwest Gulf of Mexico Inner Continental Shelf, Upper Texas - Western Louisiana Coast (presenters: R. Trevino, T. Meckel, M. I. Olariu, D. Dunlap, M. Deangelo, J. Lu, R. Sabbagh, A. Klovov, H. Hosseini, A. Goudarzi): presented at AAPG Annual Meeting, Houston, April 2-5, 2017.

Preliminary stratigraphy and depositional framework of Miocene in offshore Texas and Louisiana for CO₂-EOR resource assessment, International Workshop on Offshore Geologic CO₂ Storage: presented to Bureau of Economic Geology, presented at Annual Bureau Research Symposium, Austin, Tex., September 16, 2016.

Process regime change from wave-modified and tidally-Influenced to wave-dominated deltas across growth faults in the Paleogene Lower Wilcox Guadalupe Delta, South Texas Gulf Coast: presented to Bureau of Economic Geology, presented at Annual Bureau Research Symposium, Austin, Tex., September 16, 2016.

Process regime change from wave-modified and tidally-Influenced to wave-dominated deltas across growth faults in the Paleogene Lower Wilcox Guadalupe Delta, South Texas Gulf Coast: presented to AAPG, presented at Annual Meeting, Calgary, Canada, June 19-22, 2016.

Preliminary stratigraphy and depositional framework of Miocene in offshore Texas and Louisiana for CO₂-EOR resource assessment: presented at International Workshop on Offshore Geologic CO₂ Storage, Austin, Tex., February 17-19, 2016.

Mixed energy deltas: The rule rather than the exception, C. Olariu, R. J. Steel, and M. I. Olariu: presented at IAS meeting, Krakow, Poland, June 22-25, 2015.

Process and architectural evolution during deltaic cross-shelf transits--Fox Hills Deltas, Washakie Basin, Wyoming: presented at AAPG Annual Meeting, New Orleans, Louisiana, 2010.

Characteristics of obliquely migrating tidal bars: Esdolomada Member, Roda Formation, Graus-Tremp Basin, Spain: presented at AAPG Annual Meeting, Denver, Colorado, 2009.

Quantitative analysis of 3-D geologic outcrops: deep-water Jackfork Sandstone at Big Rock Quarry, Arkansas: presented at AAPG Annual Meeting, San Antonio, Texas, 2008.

Outcrop fracture characterization using terrestrial laser scanners: deep-water Jackfork Sandstone at Big Rock Quarry, Arkansas: presented at GSA Penrose Meeting, Durham, UK, 2006.

Development of analysis techniques of close-in 3-D photorealistic mapping: deepwater turbidite deposits at Big Rock Quarry, Arkansas: presented at AAPG Annual Meeting, Dallas, Texas, 2004.

M.I. Olariu and W.A. Ambrose, Control of depositional environments and structural deformation on sandstone distribution in unstable shelf edge deltas - Paleogene Lower Wilcox Guadalupe Delta, Texas, USA: IAS Meeting, Geneva, Switzerland, August 2014.

C. Olariu and M. I. Olariu, Ubiquity of wave-dominated deltas in growth-fault compartments: AAPG Annual Meeting, Houston, USA, April 2014.

M.I. Olariu and W.A. Ambrose, Depositional Trends in the Paleogene Lower Wilcox Guadalupe Delta, South Texas Gulf Coast: AAPG Annual Meeting, Houston, USA, April 2014.

M. I. Olariu, U. Hammes, W. A. Ambrose and O. Ogiesoba, Depositional architecture of growth-fault related wave-dominated shelf edge deltas of the Oligocene Frio Formation in Corpus Christi Bay, Texas: AAPG Annual Meeting, Pittsburgh, USA, May 2013.

Activities of a Professional Nature

Professional Societies

American Association of Petroleum Geologists

Geological Society of America

Program and Project Management

Advanced Resource Recovery in Mexico (ARRM): Submitted proposal to evaluate the Frio play in the Lost Fold belt

Collaboration with Copeland Resources and Arganteal on a Middle Wilcox project to map thin sands from wireline logs in Dewitt County

Nautilus Training Alliance core workshop: Wilcox and Claiborne Group (Paleocene-Eocene): onshore to deep water (Texas, USA), 25-28 March, 2019

Activities of a Professional Nature

Reviewed articles for various journals: Sedimentology, Sedimentary Geology, AAPG Bulletin, Marine and Petroleum Geology (February 15-November 19, 2019)

Review of AAPG article (January 29-February 22, 2017)

Review of article for Marine and Petroleum Geology journal (November 13-28, 2016)

Review of article for Interpretation journal (October 28-November 6, 2016)

Review of the USGS onshore quantitative assessment of the Gulf Coast Basin deep tertiary interval (Paleogene) for undiscovered hydrocarbons (September 22, 2016)

Review of BEG Report of Investigations (February 27-March 4, 2015)

Publications

Peer Reviewed Authored Books

Ambrose, W. A., Zeng, H., Zhang, J., Olariu, M. I., Smith, D. C., and Clift, S. J., 2018, Depositional history and stratigraphic evolution of the Upper Wilcox Group and Reklaw Formation, northern Bee County, Texas: Austin, Texas, The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, no. 284, 87 p., <http://doi.org/10.23867/RI0284D>.

Peer Reviewed Journal Articles

Bump, A. P., Bakhshian, S., Ni, H., Hovorka, S. D., Olariu, M. I., Dunlap, D., Hosseini, S. A., and Meckel, T. A., 2023, Composite confining systems: Rethinking geologic seals for permanent CO2 sequestration: International Journal of Greenhouse Gas Control, v. 126, no. 103908, 12 p., <http://doi.org/10.1016/j.ijggc.2023.103908>.

Zeng, H., He, Y., Olariu, M., and Treviño, R., 2023, Machine learning-based inversion for acoustic impedance with large synthetic training data: workflow and data characterization: Geophysics, v. 88, no. 2, p. R193-R207, <http://doi.org/10.1190/GEO2021-0726.1>.

Ambrose, W. A., Flaig, P., Zhang, J., Olariu, M. I., Denison, C., Demchuk, T., and O'Keefe, J., 2020, The Midway to Carrizo succession in the southeastern Texas Gulf Coast: evolution of a tidally influenced coastline: GCAGS Journal, v. 9, p. 41-75.

Olariu, M. I., DeAngelo, M., Dunlap, D., and Treviño, R. H., 2019, High frequency (4th order) sequence stratigraphy of Early Miocene deltaic shorelines, offshore Texas and Louisiana: Marine and Petroleum Geology, v. 110, p. 575-586, <http://doi.org/10.1016/j.marpetgeo.2019.07.040>.

Olariu, M. I., and Zeng, H., 2018, Prograding muddy shelves in the Paleogene Wilcox deltas,

south Texas Gulf Coast: Marine and Petroleum Geology, v. 91, p. 71-88, <http://doi.org/10.1016/j.marpetgeo.2017.12.027>.

Koo, W. M., Olariu, C., Steel, R. J., Olariu, M. I., Carvajal, C. R., and Kim, W., 2016, Coupling between shelf-edge architecture and submarine-fan growth style in a supply-dominated margin: Journal of Sedimentary Research, v. 86, no. 6, p. 613-628, <http://doi.org/10.2110/jsr.2016.42>.

Olariu, M. I., and Ambrose, W. A., 2016, Process regime variability across growth faults in the Paleogene Lower Wilcox Guadalupe Delta, South Texas Gulf Coast: Sedimentary Geology, v. 341, p. 27-49, <http://doi.org/10.1016/j.sedgeo.2016.05.013>.

Olariu, M. I., and Olariu, C., 2015, Ubiquity of wave-dominated deltas in outer-shelf growth-faulted compartments: Journal of Sedimentary Research, v. 85, p. 768-779, <http://doi.org/10.2110/jsr.2015.51>.

Olariu, M. I., Hammes, Ursula, and Ambrose, W. A., 2013, Depositional architecture of growth-fault related wave-dominated shelf edge deltas of the Oligocene Frio Formation in Corpus Christ Bay, Texas: Marine and Petroleum Geology, v. 48, p. 423-440.

Olariu, M. I., Carvajal, R. C., Olariu, C., and Steel, R. J., 2012, Deltaic process and architectural evolution during cross-shelf transits, Maastrichtian Fox Hills Formation, Washakie Basin, Wyoming: AAPG Bulletin, v. 96, no. 10, p. 1931-1956.

Olariu, M. I., Olariu, Cornel, Steel, J. R., Dalrymple, R. W., and Martinus, A. W., 2012, Anatomy of a laterally migrating tidal bar in front of a delta system: Esdolomada Member, Roda Formation, Tremp-Graus Basin, Spain: Sedimentology, v. 59, no. 2, p. 356-378.

Olariu, M. I., Aiken, C. L. V., Bhattacharya, J. P., and Xu, X., 2011, Interpretation of channelized architecture using three-dimensional photorealistic models, Pennsylvanian deepwater deposits at Big Rock Quarry, Arkansas: Marine and Petroleum Geology, v. 28, no. 6, p. 1157-1170.

Olariu, M. I., Ferguson, J. F., and Aiken, C. L. V., 2008, Outcrop fracture characterization using terrestrial laser scanners: deepwater Jackfork Sandstone at Big Rock Quarry, Arkansas: Geosphere, v. 4, no. 1, p. 247-259.

Aiken, C. L. V., Xu, X., Thurmond, J., Abdelsalam, M., Olariu, M. I., and Olariu, C., 2004, 3-D laser scanning and virtual photorealistic outcrops: acquisition, visualization and analysis: Tulsa, OK, AAPG Short Course #3, 100 p.

Non Peer Reviewed Journal Articles

Bump, A. P., Hovorka, S. D., Meckel, T. J., Nuñez-López, V., Olariu, M. I., and Treviño, R. H., 2020, Carbon capture and storage potential in southern Louisiana: a new business opportunity: GeoGulf Transactions, v. 70, p. 73-84.

Ambrose, W. A., Zeng, H., Olariu, M. I., and Zhang, J., 2018, Depositional history and shoreline evolution of the upper Wilcox Group and lower Reklaw Formation, northern Bee County, Texas: AAPG Search and Discovery, no. 51502, 4 p.

Olariu, M. I., Hammes, U., Ambrose, W. A., and Loucks, R. G., 2012, Facies variability of the Oligocene Frio Formation in growth-faulted compartments in Corpus Christi Bay, Texas: Gulf Coast Association of Geological Societies Transactions, v. 62, p. 331-343.

Contract Reports

Ambrose, W. A., Smith, D. C., Cutright, B. L., Scanlon, B. R., Reedy, R. C., Elliott, B. A., Paine, J. G., Foss, M. M., Tremblay, T. A., Wolaver, B. D., Loucks, R. G., Frébourg, G., Hentz, T. F., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., E. L. Frost, III, Hamlin, H. S., Nance, H. S., Duncan, I. J., Hammes, U., Rogers, H., Clift, S. J., Sivil, J. E., Zhang, T., Reed, R. M., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., and Peng, S., 2014, State of Texas Advanced Resource Recovery (STARR) progress report: Bureau of Economic Geology, Biennium prepared for Texas State Comptroller

of Public Accounts, 90 p.

Olariu, M. I., Carvajal, R. C., Steel, J. R., and Olariu, C., 2010, Process and architectural evolution during deltaic cross-shelf transits--Fox Hills Deltas, Washakie Basin: Department of Geological Sciences, The University of Texas at Austin, annual report prepared for RIOMAR, 24 p.

Olariu, M. I., Olariu, C., Steel, J. R., and Dalrymple, R. W., 2009, Anatomy of a laterally migrating tidal bar: Esdolomada Member, Roda Formation, Graus-Tremp Basin, Spain,: Department of Geological Sciences, The University of Texas at Austin, annual report prepared for BITE, 25 p.

Published Reports

Ambrose, W. A., Rogers, H., Smith, D. C., Scanlon, B. R., Paine, J. G., Nicot, J.-P., Young, M. H., Loucks, R. G., Hentz, T. F., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Flaig, P. P., Zhang, J., Hattori, K., Roberts, A., Zeng, H., DeJarnett, B. B., Radjef, E., Periwai, P., Peng, S., Duncan, I. J., Ren, B., Jensen, J., Male, F., Dommissie, R., Eastwood, R., Carr, D. L., Zhang, T., Ko, L., Larson, T., Lawton, T., Covault, J., Sylvester, Z., Goodman, E., Calle, A., Smye, K. G., Pelletier, I., Dunlap, D. B., Lambert, J., and Sivil, J. E., 2021, State of Texas Advanced Resource Recovery (STARR) 2018-2020 biennium report: The University of Texas at Austin, Bureau of Economic Geology 44 p.

Ambrose, W. A., Smith, D. C., Hentz, T. F., Loucks, R. G., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Hamlin, H. S., Duncan, I. J., Carr, D. L., Ko, L., Peng, S., Jensen, J., Rogers, H., Clift, S. J., Sivil, J. E., Zhang, T., Eastwood, R., and Brooks, D. L., 2019, State of Texas Advanced Resource Recovery (STARR) progress report: The University of Texas at Austin, Bureau of Economic Geology 43 p.

Ambrose, W. A., Smith, D. C., Hentz, T. F., Loucks, R. G., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Hamlin, H. S., Duncan, I. J., Carr, D. L., Ko, L., Peng, S., Rogers, H., Clift, S. J., Sivil, J. E., Zhang, T., Eastwood, R., and Brooks, D. L., 2018, State of Texas Advanced Resource Recovery (STARR) interim report: Bureau of Economic Geology, The University of Texas at Austin, 26 p.

Ambrose, W. A., Smith, D. C., Young, M. H., Scanlon, B. R., Reedy, R. C., Collins, E. W., Elliott, B. A., Wolaver, B. D., Paine, J. G., Hentz, T. F., Frébourg, G., Loucks, R. G., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Duncan, I. J., Rogers, H., Clift, S. J., Foss, M. M., Sivil, J. E., Zhang, T., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Brooks, D. L., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., He, Y., Ko, L., Phelps, R., and Peng, S., 2016, State of Texas Advanced Resource Recovery (STARR) progress report: Bureau of Economic Geology, Biennium prepared for Texas State Comptroller of Public Accounts: 82 p.

Ambrose, W. A., Smith, D. C., Cutright, B. L., Scanlon, B. R., Reedy, R. C., Elliott, B. A., Paine, J. G., Foss, M. M., Tremblay, T. A., Wolaver, B. D., Loucks, R. G., Frébourg, G., Hentz, T. F., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Frost, E. L., III, Hamlin, H. S., Nance, H. S., Duncan, I. J., Hammes, U., Rogers, H., III, Clift, S. J., Sivil, J. E., Zhang, X., Reed, R. M., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Brooks, D. L., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., and Peng, S., 2014, State of Texas Advanced Resource Recovery progress report and CD-ROM: Bureau of Economic Geology, The University of Texas at Austin, 90 p.

Workshop Workbooks

Olariu, M. I., Ambrose, W. A., Olariu, C., Steel, R., and Zhang, J., 2018, Depositional history and architectural variability of the Wilcox Group in Texas: Bureau of Economic Geology and Austin Geological Society, Core Workshop Guidebook, no. SW0024.

Olariu, M. I., Ambrose, W. A., Clift, S. J., Clayton, A., Shunli, L., Olariu, C., Steel, R. J., Zeng, H., and Zhang, J., 2016, Architectural variability and depositional trends in the Wilcox Group in

Texas: Bureau of Economic Geology, 75 p.

Olariu, M. I., Ambrose, W. A., Clift, S. J., Conwell, D., Li, S., Olariu, C., Steel, J. R., Zeng, H., and Zhang, J., 2015, Depositional systems and facies variability in the Wilcox Group in Texas.

Aiken, C. L. V., Xu, X., Thurmond, J., Abdelsalam, M., Olariu, M. I., and Olariu, C., 2004, 3-D laser scanning and virtual photorealistic outcrops: acquisition, visualization and analysis: AAPG, Short Course #3, 100 p.

Published Abstracts

Zeng, H., Zhang, B., and Olariu, M. I., 2022, Facies-induced bias in machine learning-enhanced seismic lithology (inversion) (ext. abs.): SEG/AAPG International Meetings ; IMAGE 2022 · 28 August-1 September 2022.

Treviño, R. H., Meckel, T., Olariu, M. I., Dunlap, D. B., DeAngelo, M., Lu, J., Sabbagh, R., and Klovov, A., 2018, Offshore CO₂ storage resource assessment of the northwest Gulf of Mexico Inner Continental Shelf, upper Texas - western Louisiana coast (ext. abs.): AAPG Datapages Search and Discovery, no. 80630, 27 p.

Olariu, M. I., Hammes, Ursula, Ambrose, W. A., and Ogiesoba, O. C., 2013, Growth-faulted compartments of the Oligocene Frio Formation in proximity of the shelf edge in Corpus Christi Bay, Texas (abs.): in American Association of Petroleum Geologists Annual Convention and Exhibition, Pittsburgh, Pennsylvania, May 19-22, abstracts, CD-ROM.

Zhang, J., Ambrose, W. A., and Olariu, M. I., 2013, Sequence-stratigraphic and depositional framework of wave-influenced deltaic systems in the Lower and Middle Frio Formation, Redfish Bay, Corpus Christi, Texas (abs.): in American Association of Petroleum Geologists Annual Convention and Exhibition, Pittsburgh, Pennsylvania, May 19-22, abstracts, CD-ROM.

Olariu, M. I., Xu, X., Abdelsalam, M., Aiken, C. L. V., and Ammann, L., 2003, The use of oblique close-range multi-spectral imagery in digital 3-D mapping of the Jackfork turbidites at Big Rock Quarry, Arkansas (abs.): Geological Society of America Abstracts with Programs, v. 35, no. 6, p. 260.

Olariu, M. I., Xueming, X., Abdelsalam, M., Aiken, C. L. V., and Ammann, L., 2002, Ground based remote sensing techniques integrated with close range, oblique derived 3-D digital models of Jackfork turbidites, Big Rock Quarry, Arkansas (abs.): Geological Society of America Abstracts with Programs, v. 34, no. 6, p. 477.