

Zoltan Sylvester

Professional Summary

August 22, 2025

Business address: The University of Texas at Austin
Bureau of Economic Geology
10100 Burnet Rd., Bldg. 130
Austin, TX 78758

Telephone: (512) 471-4874

E-mail address: zoltan.sylvester@beg.utexas.edu

Awards

Awards and Honorary Societies

AAPG Jules Braunstein Memorial Award, 2019

Jules Braunstein Memorial Award - best poster presentation at AAPG Annual Meeting, 2019

Presentations

Invited Presentations

meanderpy: A Simple Model of Meandering Sheds Light on Channel Kinematics and Autogenic Counter Point Bars: presented at CSDMS 3.0--Bridging Boundaries, CSDMS 2019 Annual Meeting, Boulder, Colo., May 23, 2019.

Towards a Better Understanding of Architecture and Pore-Space Distribution in Clastic Sediments and Rocks: Studying Sedimentary Systems Using Simple Stratigraphic Forward Models: presented at SEPM Research Symposium, AAPG 2019 Annual Convention & Exhibition, San Antonio, Tex., May 21, 2019.

Presentations

Sequence Stratigraphy & Coastal Responses to Tilting: Badlands Modeling: presented to 2023 QCL Annual Meeting, Austin, Texas, October 30, 2023.

Publications

Peer Reviewed Journal Articles

Nieminski, N. M., Sylvester, Z., Covault, J. A., Gomberg, J., Staisch, L., and McBrearty, I. W., 2025, Turbidite correlation for paleoseismology: Geological Society of America Bulletin, v. 137, no. 1/2, p. 29-40, <http://doi.org/10.1130/B37343.1>.

Covault, J. A., Sylvester, Z., and Dunlap, D. B., 2024, Submarine-channel meandering reset by landslide filling, Taranaki Basin, New Zealand: The Depositional Record, v. 10, no. 5, p. 581-599, <http://doi.org/10.1002/dep2.267>.

Speed, C. M., Sylvester, Z., Durkin, P. R., and Flaig, P. P., 2024, Three-dimensional anatomy of a Cretaceous river avulsion: Geology, v. 52, no. 12, p. 885-890, <http://doi.org/10.1130/G52254.1>.

Sylvester, Z., Straub, K. M., and Covault, J. A., 2024, Stratigraphy in space and time: a reproducible approach to analysis and visualization: Earth-Science Reviews, v. 250, no. 104706, 29 p., <http://doi.org/10.1016/j.earscirev.2024.104706>.

Sylvester, Z., 2023, Automated multi-well stratigraphic correlation and model building using relative geologic time: Basin Research, v. 35, no. 5, p. 1961-1984, <http://doi.org/10.1111/bre.12787>.

- Morris, P. D., Sylvester, Z., Covault, J. A., and Mohrig, D., 2022, Channel trajectories control deep-water stratigraphic architecture: The Depositional Record, v. 8, no. 2, p. 880-894, <http://doi.org/10.1002/dep2.189>.
- Covault, J. A., Sylvester, Z., Ceyhan, C., and Dunlap, D. B., 2021, Giant meandering channel evolution, Campos deep-water salt basin, Brazil: Geosphere, v. 17, no. 6, p. 1869-1889, <http://doi.org/10.1130/GES02420.1>.
- Sylvester, Z., Durkin, P. R., Hubbard, S. M., and Mohrig, D., 2021, Autogenic translation and counter point bar deposition in meandering rivers: Geological Society of America Bulletin, v. 133, no. 11-12, p. 2439-2456, <http://doi.org/10.1130/B35829.1>.
- Covault, J. A., Sylvester, Z., Hudec, M. R., Ceyhan, C., and Dunlap, D., 2020, Submarine channels 'swept' downstream after bend cutoff in salt basins: The Depositional Record, v. 6, no. 1, p. 259-272, <http://doi.org/10.1002/dep2.75>.
- Zhang, J., Sylvester, Z., and Covault, J., 2020, How do basin margins record long-term tectonic and climatic changes?: Geology, v. 48, no. 9, p. 893-897, <http://doi.org/10.1130/G47498.1>.
- Hawie, N., Covault, J. A., and Sylvester, Z., 2019, Grain-size and discharge controls on submarine-fan depositional patterns from forward stratigraphic models: Frontiers in Earth Science, v. 7, no. 334, 15 p., <http://doi.org/10.3389/feart.2019.00334>.
- Sharman, G. R., Sylvester, Z., and Covault, J. A., 2019, Conversion of tectonic and climatic forcings into records of sediment supply and provenance: Scientific Reports, v. 9, no. 4115, 7 p., <http://doi.org/10.1038/s41598-019-39754-6>.
- Sylvester, Z., Durkin, P., and Covault, J., 2019, High curvatures drive river meandering: Geology, v. 47, no. 3, p. 263-266, <http://doi.org/10.1130/G45608.1>.
- Sylvester, Z., Durkin, P., Covault, J. A., and Sharman, G. R., 2019, High curvatures drive river meandering: reply: Geology, v. 47, no. 10, p. e486, <http://doi.org/10.1130/G46838Y.1>.
- Hawie, N., Covault, J., Dunlap, D. B., and Sylvester, Z., 2018, Slope-fan depositional architecture from high-resolution forward stratigraphic models: Marine and Petroleum Geology, v. 91, p. 576-585, <http://doi.org/10.1016/j.marpetgeo.2017.12.033>.
- Sharman, G. R., Sharman, J. P., and Sylvester, Z., 2018, detritalPy: a Python-based toolset for visualizing and analysing detrital geo-thermochronologic data: The Depositional Record, v. 4, no. 2, p. 202-215, <http://doi.org/10.1002/dep2.45>.
- Covault, J., Kostic, S., Paull, C., Sylvester, Z., and Fildani, A., 2017, Cyclic steps and related supercritical bedforms: building blocks of submarine fans and canyon-channel systems, western North America: Marine Geology, v. 393, p. 4-20, <http://doi.org/10.1016/j.margeo.2016.12.009>.
- Jobe, Z. R., Sylvester, Z., Bolla Pittaluga, M., Frascati, A., Pirmez, C., Minisini, D., Howes, N., and Cantelli, A., 2017, Facies architecture of submarine channel deposits on the western Niger Delta slope: implications for grain-size and density stratification in turbidity currents: Journal of Geophysical Research: Earth Surface, v. 122, p. 473-491, <http://doi.org/10.1002/2016JF003903>.
- Jobe, Z. R., Sylvester, Z., Howes, N., Pirmez, C., Parker, A., Cantelli, A., Smith, R., Wolinsky, M. A., O'Byrne, C., Slowey, N., and Prather, B., 2017, High-resolution, millennial-scale patterns of bed compensation on a sand-rich intraslope submarine fan, western Niger Delta slope: GSA Bulletin, v. 129, no. 1-2, p. 23-37, <http://doi.org/10.1130/B31440.1>.
- Prather, B. E., O'Byrne, C., Pirmez, C., and Sylvester, Z., 2017, Sediment partitioning, continental slopes and base-of-slope systems: Basin Research, v. 29, no. 3, p. 394-416, <http://doi.org/10.1111/bre.12190>.
- Sylvester, Z., and Covault, J., 2016, Development of cutoff-related knickpoints during early evolution of submarine channels: Geology, v. 44, no. 10, p. 835-838, <http://doi.org/10.1130/G38397.1>.

Wingate, D., Kane, J., Wolinsky, M., and Sylvester, Z., 2016, A new approach for conditioning process-based geologic models to well data: Mathematical Geosciences, v. 48, no. 4, p. 371-397, <http://doi.org/10.1007/s11004-015-9596-8>.

Jobe, Z. R., Sylvester, Z., Parker, A. O., Howes, N., Slowey, N., and Pirmez, C., 2015, Rapid adjustment of submarine channel architecture to changes in sediment supply: Journal of Sedimentary Research, v. 85, no. 6, p. 729-753, <http://doi.org/10.2110/jsr.2015.30>.

Sylvester, Z., Cantelli, A., and Pirmez, C., 2015, Stratigraphic evolution of intraslope minibasins: Insights from surface-based model: AAPG Bulletin, v. 99, no. 6, p. 1099-1129, <http://doi.org/10.1306/01081514082>.

Abd El-Gawad, S., Cantelli, A., Pirmez, C., Minisini, D., Sylvester, Z., and Imran, J., 2012, Three-dimensional numerical simulation of turbidity currents in a submarine channel on the seafloor of the Niger Delta slope: Journal of Geophysical Research, v. 117, no. C5, 16 p., <http://doi.org/10.1029/2011JC007538>.

Abd El-Gawad, S., Pirmez, C., Cantelli, A., Minisini, D., Sylvester, Z., and Imran, J., 2012, 3-D numerical simulation of turbidity currents in submarine canyons off the Niger Delta: Marine Geology, v. 326-328, p. 55-66, <http://doi.org/10.1016/j.margeo.2012.06.003>.

Sylvester, Z., Pirmez, C., and Cantelli, A., 2011, A model of submarine channel-levee evolution based on channel trajectories: Implications for stratigraphic architecture: Marine and Petroleum Geology, v. 28, no. 3, p. 716-727, <http://doi.org/10.1016/j.marpetgeo.2010.05.012>.

Sylvester, Z., 2007, Turbidite bed thickness distributions: methods and pitfalls of analysis and modelling: Sedimentology, v. 54, no. 4, p. 847-870, <http://doi.org/10.1111/j.1365-3091.2007.00863.x>.

Sylvester, Z., and Lowe, D. R., 2004, Textural trends in turbidites and slurry beds from the Oligocene flysch of the East Carpathians, Romania: Sedimentology, v. 51, no. 5, p. 945-972, <http://doi.org/10.1111/j.1365-3091.2004.00653.x>.

Buatois, L. A., Mangano, M. G., and Sylvester, Z., 2001, A diverse deep-marine Ichnofauna from the Eocene Tarcau sandstone of the Eastern Carpathians, Romania: Ichnos, v. 8, no. 1, p. 23-62, <http://doi.org/10.1080/10420940109380172>.

Peer Reviewed Book Chapters

Finotello, A., Durkin, P. R., and Sylvester, Z., 2024, Meandering streamflows across landscapes and scales: a review and discussion, in Finotello, A., Durkin, P. R., and Sylvester, Z., eds., Meandering streamflows: patterns and processes across landscapes and scales: Geological Society of London, Special Publications, v. 540, p. 1-41, <http://doi.org/10.1144/SP540-2024-33>.

Morris, P. D., Sylvester, Z., Covault, J. A., Mohrig, D., and Dunlap, D., 2024, Fluvial-style migration controls autogenic aggradation in submarine channels: Joshua Channel, eastern Gulf of Mexico, in Finotello, A., Durkin, P. R., and Sylvester, Z., eds., Meandering streamflows: patterns and processes across landscapes and scales: Geological Society of London, Special Publication, v. 540, p. 265-280, <http://doi.org/10.1144/SP540-2022-123>.

Speed, C. M., Sylvester, Z., Morris, P. D., and Mohrig, D., 2024, The impact of post-cutoff bend curvature on channel kinematics in meandering rivers: an example from the Trinity River, Texas, USA, in Finotello, A., Durkin, P. R., and Sylvester, Z., eds., Meandering streamflows: patterns and processes across landscapes and scales: Geological Society of London, Special Publications, v. 540, p. 185-211, <http://doi.org/10.1144/SP540-2023-118>.

Deptuck, M. E., and Sylvester, Z., 2018, Submarine fans and their channels, levees, and lobes, in Micallef, A., Krastel, S., Savini, A., eds., Submarine geomorphology: Cham, Switzerland, Springer, p. 273-299, http://doi.org/10.1007/978-3-319-57852-1_15.

Sylvester, Z., and Pirmez, C., 2017, Latitudinal changes in the morphology of submarine channels: reevaluating the evidence for the influence of the Coriolis force, in Fraticelli, C.,

Markwick, P., Martinius, A. W., Suter, J., eds., *Latitudinal controls on stratigraphic models and sedimentary concepts: SEPM Special Publication*, v. 108, 11 p., <http://doi.org/10.2110/sepmfp.108.02>.

Sylvester, Z., Deptuck, M. E., Prather, B. E., Pirmez, C., and O'Byrne, C., 2012, Seismic stratigraphy of a shelf-edge delta and linked submarine channels in the northeastern Gulf of Mexico, in Prather, B. E., Deptuck, M. E., Mohrig, D., Van Hoorn, B., Wynn, R. B., eds, Application of the principles of seismic geomorphology to continental slope and base-of-slope systems: case studies from seafloor and near-seafloor analogues: SEPM Special Publications, v. 99, p. 31-59, <http://doi.org/10.2110/pec.12.99.0031>.

Non Peer Reviewed Journal Articles

Halder, S., Gonzalez, K., Fick, A., Ly, V., Lasscock, B., Sylvester, Z., and Snow, C., 2024, Accelerated regional stratigraphic framework building for subsurface CO₂ storage assessment: First Break, v. 42, no. 10, p. 95-101, <http://doi.org/10.3997/1365-2397.fb2024090>.

Conference Proceedings

Harris, A. D., Covault, J., Baumgardner, S., Madof, A. S., Sun, T., Sylvester, Z., and Granjeon, D., 2017, Autogenic and allogenic controls on deep-water sand delivery: insights from numerical stratigraphic forward modeling, GCSSEPM Conference, Houston, Tex., 19 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., Flraig, P. P., Zhang, J., Hattori, K., Roberts, A., Zeng, H., DeJarnett, B. B., Radjef, E., Periwal, P., Peng, S., Duncan, I. J., Ren, B., Jensen, J., Male, F., Domisse, 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 Geology44 p.

Published Abstracts

Covault, J., Sylvester, Z., Hudec, M., Ceyhan, C., and Dunlap, D., 2019, Deep-water channels "swept" downstream after bend cutoff in salt basins (abs.): 2019 AAPG Annual Convention and Exhibition, San Antonio, Tex., May 19-22, 1 p.

Harris, A., Covault, J., Baumgardner, S., Madof, A., Sun, T., Sylvester, Z., and Granjeon, D., 2017, Autogenic and allogenic controls on deep-water sand delivery: insights from numerical stratigraphic forward modeling (abs.): 2017 GCSSEPM Conference, 4-5 December, Houston, Tex.

Harris, A., Covault, J., Madof, A., Baumgardner, S., Sun, T., Sylvester, Z., and Granjeon, D., 2017, Equifinality in deep-water sand delivery: insights from 3-D stratigraphic forward models (abs.): Geological Society of America Abstracts with Programs, v. 49, no. 6, <http://doi.org/10.1130/abs/2017AM-303903>.

Harris, A., Covault, J., Madof, A., Sun, T., Sylvester, Z., Granjeon, D., and Baumgardner, S., 2017, Three-dimensional numerical modeling of eustatic control on continental-margin sand distribution (abs.): AAPG Datapages/Search and Discovery Article #90291.

Sylvester, Z., and Covault, J., 2017, Deciphering depositional signals in the bed-scale stratigraphic record of submarine channels (abs.): AGU Fall Meeting, 11-15 December, New Orleans, La.

Sylvester, Z., and Covault, J., 2017, Development of cutoff-related knickpoints in submarine channels: insights from kinematic modeling and implications for reservoir architecture (abs.): AAPG Datapages/Search and Discovery Article #90291.

Sylvester, Z., and Covault, J., 2017, Influence of tectonic deformation on meander belt architecture: insights from kinematic modeling (abs.): 11th International Conference on Fluvial Sedimentology, 17-21 July, Calgary, Canada.

Sylvester, Z., and Covault, J., 2017, The stratigraphic interpretation of subaerial and submarine valleys (abs.): 2017 GCSSEPM Conference, December 4-5, Houston, Tex.