

Jacob Covault

Professional Summary

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Professional Preparation

Academic Background

Ph.D. Geological and Environmental Sciences, Stanford University, December 2008

B.S. Geological and Environmental Sciences, Stanford University, December 2003

Professional Appointments

Research Scientist, The University of Texas at Austin, Bureau of Economic Geology

Lecturer, Department of Geological Sciences, Jackson School of Geosciences, The University of Texas at Austin (January-May 2018)

Senior Research Scientist, Chevron Energy Technology Company (ETC), Clastic Stratigraphy Research and Development team (September 2011-July 2015)

Research Geologist, United States Geological Survey (September 2010-September 2011)
Eastern Energy Resources Science Center, national CO₂ sequestration assessment

Research Scientist, Chevron Energy Technology Company (ETC), Clastic Stratigraphy Research and Development team (December 2008-August 2010)

Professional Intern, ConocoPhillips, Subsurface Technology, Reservoir Description, Sedimentary Systems team (August-November 2006)

Professional Intern, Chevron Energy Technology Company (ETC), Stratigraphy/Geostatistics Services team, Subsurface Characterization (June-September 2005)

Awards

Awards and Honorary Societies

AAPG Jules Braunstein Memorial Award, 2019

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

SEPM James Lee Wilson Award - Excellence in Sedimentary Geology by a Young Scientist, 2017

New Orleans Geological Society Best Paper Award, 2015

Marine Geoscience Leadership Symposium, 2011

AAPG Pacific Section A. I. Levorsen Award, 2009

AAPG Pacific Section H. Victor Church Memorial Award, 2009

Stanford-USGS Fellowship, 2008

Krauskopf Family Trust Fund Fellowship, 2007

Chevron Fellowship, 2006

AAPG Pacific Section A.I. Levorsen Award, 2005

Audrey Corrigan Foley Endowed Athletic Scholarship (Stanford Football), 1999-2004

Charles A. Gundelach Endowed Athletic Scholarship (Stanford Football), 1999-2004

Stanford University Undergraduate Summer Research Fellowship, 2003

Service

University Committees

UT Austin Jackson School of Geosciences BEG STARR-QCL chair, hiring committee petrographer and basin analyst (Timothy Lawton), 2019

UT Austin Jackson School of Geosciences BEG basin modeler hiring committee (Inessa Yurchenko), 2018

UT Austin Jackson School of Geosciences DGS Sedimentary Geology hiring/search committee (Timothy Goudge), 2018

Judge for 6th Annual Jackson School Student Research Symposium, 2017

UT-Austin JSG BEG MSRL hiring committee (Toti Larson), 2017

Judge for 5th Annual Jackson School Student Research Symposium, 2016

Judge for Best Student Paper, Solid Earth and Tectonic, 2016

UT Austin Jackson School of Geosciences BEG QCL; chair, hiring committee sedimentary geologist (Zoltan Sylvester), 2016

External Committees Participation

GSA Geology Editorial Board, 2019-Present

Chair, Stanford University Alumni Council for the School of Earth, Energy & Environmental Sciences, January 1, 2015-Present

SEPM Annual Meeting Co-Vice Chair, 2019

Session Chair: A Look into the Future of Energy and Sustainability Using the Sedimentary Record, SEPM Research Symposium, San Antonio, Tex., 2019

SEPM Pettijohn Medal Committee, 2018-2019

SENER - IMP International Workshop invited participant, 2018

GCSSEPM Perkins Conference Technical Committee, 2017

SEPM Awards Chair, AAPG Annual Meeting, Houston, Tex., 2017

Session Chair: Source to Sink II: Global Examples, AAPG Annual Meeting, Houston, Tex., 2017

Session Chair: Source to Sink, AAPG Annual Meeting, Houston, Tex., 2017

Session Chair: The Dynamics of Tectono-Sedimentary Systems during Basin Formation and Fill, GSA Annual Meeting, Seattle, Wash., 2017

Convener, SEPM Deepwater Research Group, January 1, 2014-December 31, 2016

Reviewer, AAPG International Conference: Cancun Deepwater Exploration & Production, February 1-29, 2016

SEPM STRATA Planning Workshop, February 26-28, 2016

Session Chair: SEPM Deep-Water Research Group Annual Meeting, Calgary, Canada, 2016

Convener, Revisiting the Atlantic Continental Margin: New Insights on the Geologic Evolution of North American Passive Margin Basins, GSA Annual Meeting, Baltimore, MD, November 1-4, 2015

Session Chair: Revisiting the Atlantic Continental Margin: New Insights on the Geologic Evolution of North American Passive Margin Basins, GSA Annual Meeting, Baltimore, Md., 2015

Session Chair: SEPM Deep-Water Research Group Annual Meeting, Denver, Colo., 2015

Session Chair: SEPM Research Symposium: Channels: From Geomorphic Expression to Stratigraphic Record, AAPG Annual Meeting, Denver, Colo., 2015

AAPG Publication Committee, 2012-2015

Session Chair: Sedimentology, Architecture and Process Controls of Deepwater Siliciclastic Systems: Applied Models and Experiments, AAPG Annual Meeting, Houston, Tex., 2014

Session Chair: SEPM Deep-Water Research Group Annual Meeting, Houston, Tex., 2014

Session Chair: Sinuous Channels in Subaerial and Submarine Environments: Comparing Flow, Form, and Fill, AGU Fall Meeting, San Francisco, Calif., 2014

Session Chair: Time in Strata: Challenges to Interpreting Stratigraphic Records, AGU Fall Meeting, San Francisco, Calif., 2014

Session Chair: Turbidites and Contourites, AAPG Annual Meeting, Houston, Tex., 2014

Session Chair: Deep Water Siliciclastics I, AAPG Annual Meeting, Pittsburgh, Pa., 2013

Session Chair: Deep Water Siliciclastics II, AAPG Annual Meeting, Pittsburgh, Pa., 2013

Session Chair: Domestic and International Turbidites, AAPG Annual Meeting, Pittsburgh, Pa., 2013

Session Chair: Sediment Routing in Western North America, Pacific Section AAPG Convention, Monterey, Calif., 2013

Session Chair: Application of Integrated Sedimentary Systems Analysis to Stratigraphic Prediction, AAPG Annual Meeting, Long Beach, Calif., 2012

Session Chair: Cyclicity and Hierarchy in the Clastic Stratigraphic Record, GSA Annual Meeting, Charlotte, N.C., 2012

Session Chair: Linking Geomorphology and Morphodynamics to Sediment Budgets, Sediment Caliber, and the Stratigraphic Record, AGU Fall Meeting, San Francisco, Calif., 2012

Session Chair: Preservation of Environmental Signals in Deep-Water Depositional Systems, GSA Annual Meeting, Charlotte, N.C., 2012

Session Chair: Integrated Sedimentary Systems: Applying Source to Sink Concepts across Geologic Time, GSA Annual Meeting, Minneapolis, Minn., 2011

Session Chair: Source to Sink Insights into Integrated Sedimentary System Evolution, AGU Fall Meeting, San Francisco, Calif., 2010

Session Chair: Modern Sea-Floor and Quaternary Turbidite Systems Offshore the Western Margin of the United States in Honor of Bill Normark, Pacific Section AAPG Convention, Ventura, Calif., 2009

Outreach Activities

2016 Jackson School of Geosciences Best Student Paper: Solid Earth and Tectonic Processes: April 1-13, 2016.

Judge, 5th Annual Jackson School of Geosciences Student Research Symposium: February 6, 2016.

Teaching and Advising

University Courses Taught

Sediment Gravity-Flow Depositional Systems: Processes to Products:
GEO 371T - Undergrad (Unique # 26514);
GEO 391 - Grad (Unique # 26678): The University of Texas at Austin, January-May 2018.

Student Committee Supervision

MS, Graham Soto-Kerans, The University of Texas at Austin, 2018
MS, Can Ceyhan, The University of Texas at Austin, 2017

Student Committee Participation

M.S., Graham Soto-Kerans, The University of Texas at Austin, 2016
Ph.D dissertation, Jinyu Zhang, The University of Texas at Austin, 2016
Ph.D dissertation, John Swartz, The University of Texas at Austin, 2016
Ph.D dissertation, Logan West, The University of Texas at Austin, 2016
Ph.D dissertation, Meredith Bush, The University of Texas at Austin, 2016
Ph.D dissertation, Paul Morris, The University of Texas at Austin, 2016
Ph.D dissertation, Woong Mo Koo, The University of Texas at Austin, 2016
Ph.D. dissertation, Cullen Kortyna, The University of Texas at Austin, 2016
Ph.D. dissertation, Dallas Dunlap, The University of Texas at Austin, 2016
Ph.D. dissertation, Kelly Thomson, The University of Texas at Austin, 2016
Ph.D. dissertation, Kevin Meazell, The University of Texas at Austin, 2016
Ph.D. dissertation, Ningjie Hu, The University of Texas at Austin, 2016

Presentations

Invited Presentations

Fluvial Kinematics Predict Submarine-Channel Evolution in the Gulf of Mexico: presented to Linking Surface Dynamics to Stratigraphic Architecture in Sedimentary Systems I, presented at AGU Fall Meeting 2019, San Francisco, Calif., December 9, 2019.

Sandy Building Blocks of Basin-Floor Submarine-Fan Reservoirs: Low-Sinuosity Deepwater Channel Deposits, Permian Basin: presented to Panhandle Geological Society (PGS), presented at Luncheon, Amarillo, Tex., November 13, 2019.

Clastic Sedimentary Systems from Source to Sink: presented at Bureau of Economic Geology 3E Research Symposium, Austin, Tex., October 18, 2019.

Sandy Building Blocks of Basin-Floor Submarine-Fan Reservoirs: Low-Sinuosity Deepwater Channel Deposits, Permian Basin: presented to West Texas Geological Society (WTGS), presented at WTGS luncheon, Midland, Tex., August 13, 2019.

Sandy Building Blocks of Basin-Floor Submarine-Fan Reservoirs: Low-Sinuosity Deepwater Channel Deposits, Permian Basin: presented to Houston Geological Society (HGS), presented at Northsiders' Luncheon, Spring, Tex., May 14, 2019.

Sandy Building Blocks of Basin-Floor Submarine-Fan Reservoirs: Low-Sinuosity Deepwater Channel Deposits, Permian Basin: presented to Permian Basin Section, SEPM, presented at Luncheon, Midland, Tex., 2019.

Quantitative Clastics Laboratory overview: presented to Chevron, presented at Thursday Tech

Talk, 2018.

Quantitative Clastics Laboratory overview: presented to Equinor, presented at Reservoir Systems Hour, 2018.

Environmental signal propagation into the stratigraphic record of small mountainous rivers feeding submarine canyon-fan systems, southern California, USA: presented to Marum, Universitat Bremen, presented at GeoBremen, Bremen, Germany, September 24-26, 2017.

Deepwater depositional systems overview: presented to PetroChina, presented at Hangzhou Research Institute of Geology, Hangzhou, China, May 15-18, 2017.

Quantitative Clastics Laboratory overview: presented to Chevron, presented at Thursday Tech Talk, Houston, Tex., March 30, 2017.

Predictive organization of intra-slope basin submarine fans: presented to Houston Geological Society, presented at Northsiders' Luncheon, Spring, Tex., February 23, 2017.

Predictive organization of intra-slope basin submarine fans: presented to AAPG, presented at Geoscience Technology Workshop Deepwater and Shelf Reservoirs: Big Data, New Knowledge and Analytics for Enhanced Results, Houston, Tex., January 24-25, 2017.

Small rivers and big fans: new DZ U-Pb geochronologic constraints from Neogene deep-water Mexico: presented to University of Rennes Source to Sink Workshop, November 30-December 2, 2016.

Predictive controls on depositional system evolution: presented to UT-Austin Jackson School of Geosciences Geology Foundation Advisory Council, November 10, 2016.

High-relief drainages in deep-time source-to-sink sediment dispersal: Cenozoic North America-Gulf of Mexico sediment-routing systems: presented to UT-Austin Jackson School of Geosciences De Ford Lecture Series, October 6, 2016.

Deep-time source-to-sink sediment dispersal: new geochronologic constraints from the Cenozoic North America-Gulf of Mexico sediment-routing system: presented to LSU Geology & Geophysics Lecture Series, September 30, 2016.

Concepts and approaches for paleogeographic reconstruction and application to basin-margin stratigraphic predictions: presented to SIPES, August 2, 2016.

Reservoir architecture and stratigraphic evolution of deepwater channel systems: presented to PetroChina Hangzhou Research Institute of Geology, April 28, 2016.

Supercritical submarine channel morphodynamics in Western North America: presented to Tulane University Department of Earth and Environmental Sciences Spring Seminar, March 11, 2016.

Supercritical submarine channel morphodynamics from Western North America: presented to The University of Texas Institute for Geophysics Seminar, January 29, 2016.

Submarine channel compartmentalization as a result of meandering, cut-off, and incision: presented to HGS Northsiders' Luncheon, January 19, 2016.

Submarine channel compartmentalization as a result of meandering, cut-off, and incision: presented at HGS International Dinner, January 18, 2016.

Supercritical submarine channel morphodynamics from integrated investigation of the Western North American continental margin (invited abstract): presented at AGU Fall Meeting, San Francisco, CA, December 14-19, 2015.

Source-to-sink sediment-budget variability in Southern California (invited abstract): presented at AGU Fall Meeting, San Francisco, CA, December 14-18, 2015.

Supercritical submarine channel morphodynamics from integrated investigation of the Western

North American continental margin: presented to Aera Energy Lunch-and-Learn Technical Talk, December 17, 2015.

Presentations

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

Salt Diapir Influence on Channel Evolution in Deep-Water Minibasins, Gulf of Mexico: presented to Applied Geodynamics Laboratory Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, November 9, 2018.

Salt Diapir Influence on Channel Evolution in Deep-Water Minibasins, Gulf of Mexico: presented to Quantitative Clastics Laboratory Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, October 16, 2018.

Carbonate Channel-Levee Systems Influenced by MTCs: Browse Basin, North West Shelf, Australia: presented to American Association of Petroleum Geologists Annual Meeting, Salt Lake City, Utah, June 16, 2018.

Activities of a Professional Nature

Program and Project Management

Quantitative Clastics Laboratory Industrial Affiliates Program

Funding

Research Support

Principal Investigator: Statoil Research Fellowship: Cullen Kortyna (2018-2019; \$61,800).

Principal Investigator: Statoil Research Fellowship: Ningjie Hu (2018-2019; \$61,800).

Principal Investigator: Statoil Research Fellowship (2017-2018; \$61,800).

Principal Investigator: TOGI - Internal stratigraphy, correlation, provenance and distribution of the Permian Spraberry Formation in the Midland Basin (2017; \$9,636).

Principal Investigator: Source-to-Sink Stratigraphic Response to Paleocene-Eocene Global Warming in Western North America (January 1-December 31, 2016; \$25,500).

Principal Investigator: Quantitative Clastics Laboratory Industrial Affiliates Program (September 1, 2015-Present; \$1,710,000).

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>.

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>.

Kortyna, C., Stockli, D. F., Lawton, T. F., Covault, J. A., and Sharman, G. R., 2023, Impact of Mexican Border rift structural inheritance on Laramide rivers of the Tornillo basin, west Texas (USA): insights from detrital zircon provenance: Geosphere, v. 19, no. 6, p. 1747-1787, <http://doi.org/10.1130/GES02516.1>.

Sharman, G. R., Covault, J. A., Flaig, P. P., Dunn, R., Fussee-Durham, P., Larson, T. E., Shanahan, T. M., Dubois, K., Shaw, J. B., Crowley, J. L., and Shaulis, B., 2023, Coastal response to global warming during the Paleocene-Eocene Thermal Maximum: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 625, no. 111664, 15 p., <http://doi.org/10.1016/j.palaeo.2023.111664>.

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>.

Fildani, A., Kostic, S., Covault, J. A., Maier, K. L., Caress, D. W., and Paull, C. K., 2021, Exploring a new breadth of cyclic steps on distal submarine fans: *Sedimentology*, v. 68, no. 4, p. 1378-1399, <http://doi.org/10.1111/sed.12803>.

Sharman, G. R., Covault, J. A., Stockli, D. F., Sickmann, Z. T., Malkowski, M. A., and Johnstone, S. A., 2021, Detrital signals of coastal erosion and fluvial sediment supply during glacio-eustatic sea-level rise, Southern California, USA: *Geology*, v. 49, no. 12, p. 1501-1505, <http://doi.org/10.1130/G49430.1>.

Bauer, D. B., Hubbard, S. M., Covault, J. A., and Romans, B. W., 2020, Inherited depositional topography control on shelf-margin oversteepening, readjustment, and coarse-grained sediment delivery to deep water, Magallanes Basin, Chile: *Frontiers in Earth Science*, v. 7, no. 358, 22 p., <http://doi.org/10.3389/feart.2019.00358>.

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>.

Harris, A. D., Covault, J. A., Baumgardner, S., Sun, T., and Granjeon, D., 2020, Numerical modeling of icehouse and greenhouse sea-level changes on a continental margin: sea-level modulation of deltaic avulsion processes: *Marine and Petroleum Geology*, v. 111, p. 807-814, <http://doi.org/10.1016/j.marpetgeo.2019.08.055>.

Hubbard, S. M., Jobe, Z. R., Romans, B. W., Covault, J. A., Sylvester, Z., and Fildani, A., 2020, The stratigraphic evolution of a submarine channel: linking seafloor dynamics to depositional products: *Journal of Sedimentary Research*, v. 90, no. 7, p. 673-686, <http://doi.org/10.2110/jsr.2020.36>.

Soto-Kerans, G. M., Stockli, D. F., Janson, X., Lawton, T. F., and Covault, J. A., 2020, Orogen proximal sedimentation in the Permian foreland basin: *Geosphere*, v. 16, no. 2, p. 567-593, <http://doi.org/10.1130/GES02108.1>.

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>.

Englert, R. G., Hubbard, S. M., Matthews, W. A., Coutts, D. S., and Covault, J. A., 2019, The evolution of submarine slope-channel systems: timing of incision, bypass, and aggradation in the Late Cretaceous Nanaimo Group channel-system strata, British Columbia, Canada: *Geosphere*, v. 16, p. 1-16, <http://doi.org/10.1130/GES02091.1>.

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>.

Fildani, A., Clark, J., Covault, J., Power, B., Romans, B., and Aiello, I. W., 2018, Muddy sand and sandy mud on the distal Mississippi fan: implications for lobe depositional processes: *Geosphere*, v. 14, no. 2, 16 p., <http://doi.org/10.1130/GES01580.1>.

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>.

Hessler, A., Covault, J., Stockli, D. F., and Fildani, A., 2018, Late Cenozoic cooling favored glacial over tectonic controls on sediment supply to the western Gulf of Mexico: *Geology*, v. 46, no. 11, p. 995-998, <http://doi.org/10.1130/G45528.1>.

Jobe, Z. R., Howes, N., Romans, B. W., and Covault, J., 2018, Volume and recurrence of submarine-fan-building turbidity currents: *The Depositional Record*, v. 4, no. 2, p. 160-176, <http://doi.org/10.1002/dep2.42>.

Sharman, G. R., Hubbard, S. M., Covault, J., Hinsch, R., Linzer, H.-G., and Graham, S. A., 2018, Sediment routing evolution in the North Alpine Foreland Basin, Austria: interplay of transverse and longitudinal sediment dispersal: *Basin Research*, v. 30, no. 3, p. 426-447, <http://doi.org/10.1111/bre.12259>.

Zhang, J., Covault, J., Pyrcz, M., Sharman, G. R., Carvajal, C., and Milliken, K., 2018, Quantifying sediment supply to continental margins: application to the Paleogene Wilcox Group, Gulf of Mexico: *AAPG Bulletin*, v. 102, no. 9, p. 1685-1702, <http://doi.org/10.1306/01081817308>.

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>.

Hessler, A. M., Zhang, J., Covault, J., and Ambrose, W. A., 2017, Continental weathering coupled to Paleogene climate changes in North America: *Geology*, v. 45, no. 10, p. 911-914, <http://doi.org/10.1130/G39245.1>.

Sharman, G., Covault, J., Stockli, D., Wroblewski, A., and Bush, M., 2017, Early Cenozoic drainage reorganization of the United States Western Interior-Gulf of Mexico sediment routing system: *Geology*, v. 45, no. 2, p. 187-190, <http://doi.org/10.1130/G38765.1>.

Covault, J., Sylvester, Z., Hubbard, S., Jobe, Z., and Sech, R., 2016, The stratigraphic record of submarine-channel evolution: *The Sedimentary Record*, v. 14, p. 4-11, <http://doi.org/10.2110/sedred.2016.3>.

Harris, A., Covault, J., Madof, A., Sun, T., Sylvester, Z., and Granjeon, D., 2016, Three-dimensional numerical modeling of eustatic control on continental-margin sand distribution: *Journal of Sedimentary Research*, v. 86, no. 12, p. 1434-1443, <http://doi.org/10.2110/jsr.2016.85>.

Romans, B. W., Castelltort, S., Covault, J., Fildani, A., and Walsh, J. P., 2016, Environmental signal propagation in sedimentary systems across timescales: *Earth-Science Reviews*, v. 153, p. 7-29, <http://doi.org/10.1016/j.earscirev.2015.07.012>.

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>.

Pyrcz, M., Sech, R., Covault, J., Willis, B., Sylvester, Z., and Sun, T., 2015, Stratigraphic rule-based reservoir modeling: *Bulletin of Canadian Petroleum Geology*, v. 63, no. 4, p.

287-303, <http://doi.org/10.2113/gscpgbull.63.4.287>.

Talling, P. J., Allin, J., Armitage, D. A., Arnott, R. W. C., Cartigny, M. J. B., Clare, M. A., Felletti, F., Covault, J., Girardclos, S., Hansen, E., Hill, P. R., Hiscott, R. N., Hogg, A. J., Clarke, J. H., Jobe, Z. R., Malgesini, G., Mozzato, A., Naruse, H., Parkinson, S., Peel, F. J., Piper, D. J. W., Pope, E., Postma, G., Rowley, P., Sguazzinni, A., Stevenson, C. J., Sumner, E. J., Sylvester, Z., Watts, C., and Xu, J., 2015, Key future directions for research on turbidity currents and their deposits: *Journal of Sedimentary Research*, v. 85, p. 153-169, <http://doi.org/10.2110/jsr.2015.03>.

Covault, J., Kostic, S., Paull, C. K., Ryan, H. F., and Fildani, A., 2014, Submarine channel initiation, filling and maintenance from sea-floor geomorphology and morphodynamic modelling of cyclic steps: *Sedimentology*, v. 61, no. 4, p. 1031-1054, <http://doi.org/10.1111/sed.12084>.

Hubbard, S. M., Covault, J., Fildani, A., and Romans, B. W., 2014, Sediment transfer and deposition in slope channels: deciphering the record of enigmatic deep-sea processes from outcrop: *Geological Society of America Bulletin*, v. 126, no. 5-6, p. 857-871, <http://doi.org/10.1130/b30996.1>.

Covault, J., Craddock, W. H., Romans, B. W., Fildani, A., and Gosai, M., 2013, Spatial and temporal variations in landscape evolution: historic and longer-term sediment flux through global catchments: *The Journal of Geology*, v. 121, no. 1, p. 35-56, <http://doi.org/10.1086/668680>.

Fildani, A., Hubbard, S. M., Covault, J., Maier, K. L., Romans, B. W., Traer, M., and Rowland, J. C., 2013, Erosion at inception of deep-sea channels: *Marine and Petroleum Geology*, v. 41, p. 48-61, <http://doi.org/10.1016/j.marpetgeo.2012.03.006>.

Covault, J., Shelef, E., Traer, M., Hubbard, S. M., Romans, B. W., and Fildani, A., 2012, Deep-water channel run-out length: insights from seafloor geomorphology: *Journal of Sedimentary Research*, v. 82, no. 1, p. 25-40, <http://doi.org/10.2110/jsr.2012.2>.

Covault, J., 2011, Submarine fans and canyon-channel systems: a review of processes, products, and models: *Nature Education Knowledge*, v. 3, no. 10, 4 p., <http://www.nature.com/scitable/knowledge/library/submarine-fans-and-canyon-channel-systems-a-24178428>.

Covault, J., Fildani, A., Romans, B. W., and McHargue, T., 2011, The natural range of submarine canyon-and-channel longitudinal profiles: *Geosphere*, v. 7, no. 2, p. 313-332, <http://doi.org/10.1130/ges00610.1>.

Covault, J., Romans, B. W., Graham, S. A., Fildani, A., and Hilley, G. E., 2011, Terrestrial source to deep-sea sink sediment budgets at high and low sea levels: insights from tectonically active Southern California: *Geology*, v. 39, no. 7, p. 619-622, <http://doi.org/10.1130/g31801.1>.

McHargue, T., Pyrcz, M. J., Sullivan, M. D., Clark, J. D., Fildani, A., Romans, B. W., Covault, J., Levy, M., Posamentier, H. W., and Drinkwater, N. J., 2011, Architecture of turbidite channel systems on the continental slope: patterns and predictions: *Marine and Petroleum Geology*, v. 28, no. 3, p. 728-743, <http://doi.org/10.1016/j.marpetgeo.2010.07.008>.

Romans, B. W., Fildani, A., Hubbard, S. M., Covault, J., Fosdick, J. C., and Graham, S. A., 2011, Evolution of deep-water stratigraphic architecture, Magallanes Basin, Chile: *Marine and Petroleum Geology*, v. 28, no. 3, p. 612-628, <http://doi.org/10.1016/j.marpetgeo.2010.05.002>.

Covault, J., and Graham, S. A., 2010, Submarine fans at all sea-level stands: tectono-morphologic and climatic controls on terrigenous sediment delivery to the deep sea: *Geology*, v. 38, no. 10, p. 939-942, <http://doi.org/10.1130/g31081.1>.

Covault, J., Romans, B. W., Fildani, A., McGann, M., and Graham, S. A., 2010, Rapid climatic signal propagation from source to sink in a Southern California sediment-routing system: *The Journal of Geology*, v. 118, no. 3, p. 247-259, <http://doi.org/10.1086/651539>.

Hubbard, S. M., Fildani, A., Romans, B. W., Covault, J., and McHargue, T. R., 2010, High-relief

slope clinoform development: insights from outcrop, Magallanes Basin, Chile: *Journal of Sedimentary Research*, v. 80, no. 5, p. 357-375, <http://doi.org/10.2110/jsr.2010.042>.

Paull, C. K., Ussler, W. III, Caress, D. W., Lundsten, E., Covault, J., Maier, K. L., Xu, J., and Augenstein, S., 2010, Origins of large crescent-shaped bedforms within the axial channel of Monterey Canyon, offshore California: *Geosphere*, v. 6, no. 6, p. 755-774, <http://doi.org/10.1130/ges00527.1>.

Prélat, A., Covault, J., Hodgson, D. M., Fildani, A., and Flint, S. S., 2010, Intrinsic controls on the range of volumes, morphologies, and dimensions of submarine lobes: *Sedimentary Geology*, v. 232, no. 1-2, p. 66-76, <http://doi.org/10.1016/j.sedgeo.2010.09.010>.

Romans, B. W., Fildani, A., Graham, S. A., Hubbard, S. M., and Covault, J., 2010, Importance of predecessor basin history on sedimentary fill of a retroarc foreland basin: provenance analysis of the Cretaceous Magallanes basin, Chile (50-52°S): *Basin Research*, v. 22, no. 5, p. 640-658, <http://doi.org/10.1111/j.1365-2117.2009.00443.x>.

Armitage, D. A., Romans, B. W., Covault, J., and Graham, S. A., 2009, The influence of mass-transport-deposit surface topography on the evolution of turbidite architecture: the Sierra Contreras, Tres Pasos Formation (Cretaceous), southern Chile: *Journal of Sedimentary Research*, v. 79, no. 5, p. 287-301, <http://doi.org/10.2110/jsr.2009.035>.

Covault, J., and Romans, B. W., 2009, Growth patterns of deep-sea fans revisited: turbidite-system morphology in confined basins, examples from the California Borderland: *Marine Geology*, v. 265, no. 1-2, p. 51-66, <http://doi.org/10.1016/j.margeo.2009.06.016>.

Covault, J., Hubbard, S. M., Graham, S. A., Hinsch, R., and Linzer, H.-G., 2009, Turbidite-reservoir architecture in complex foredeep-margin and wedge-top depocenters, Tertiary Molasse foreland basin system, Austria: *Marine and Petroleum Geology*, v. 26, no. 3, p. 379-396, <http://doi.org/10.1016/j.marpetgeo.2008.03.002>.

Covault, J., Romans, B. W., and Graham, S. A., 2009, Outcrop expression of a continental-margin-scale shelf-edge delta from the Cretaceous Magallanes Basin, Chile: *Journal of Sedimentary Research*, v. 79, no. 7, p. 523-539, <http://doi.org/10.2110/jsr.2009.053>.

Romans, B. W., Normark, W. R., McGann, M. M., Covault, J., and Graham, S. A., 2009, Coarse-grained sediment delivery and distribution in the Holocene Santa Monica Basin, California: implications for evaluating source-to-sink flux at millennial time scales: *Geological Society of America Bulletin*, v. 121, no. 9-10, p. 1394-1408, <http://doi.org/10.1130/b26393.1>.

Covault, J., and Graham, S. A., 2008, Turbidite architecture in proximal foreland basin-system deep-water depocenters: insights from the Cenozoic of Western Europe: *Austrian Journal of Earth Sciences*, v. 101, p. 36-51.

Covault, J., Normark, W. R., Romans, B. W., and Graham, S. A., 2007, Highstand fans in the California borderland: the overlooked deep-water depositional systems: *Geology*, v. 35, no. 9, p. 783-786, <http://doi.org/10.1130/g23800a.1>.

Surpless, K. D., Graham, S. A., Covault, J., and Wooden, J. L., 2006, Does the Great Valley Group contain Jurassic strata? Reevaluation of the age and early evolution of a classic forearc basin: *Geology*, v. 34, no. 1, p. 21-24, <http://doi.org/10.1130/g21940.1>.

Peer Reviewed Book Chapters

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>.

Sharman, G. R., Stockli, D. F., Flaig, P., Raynolds, R. G., Dechesne, M., and Covault, J. A., 2022, Tectonic influence on axial-transverse sediment routing in the Denver Basin, in Craddock,

J. P., Malone, D. H., Foreman, B. Z., and Konstantinou, A., eds., Tectonic evolution of the Sevier-Laramide hinterland, thrust belt, and foreland, and postorogenic slab rollback (180-20 Ma): Boulder, Colo., Geological Society of America, Special Paper, v. 555, p. 293-311, [http://doi.org/10.1130/2021.2555\(11\)](http://doi.org/10.1130/2021.2555(11)).

Covault, J. A., and Sharman, G. R., 2019, Tectonostratigraphic evolution of the inner California Borderland: template for fill-and-spill sedimentation, in Miall, A. D., *The Sedimentary Basins of the United States and Canada* (2d ed.): Cambridge, Mass., Elsevier, p. 511-528, <http://doi.org/10.1016/B978-0-444-63895-3.00012-7>.

Sharman, G. R., Stockli, D. F., Flaig, P. P., Reynolds, R. G., and Covault, J. A., 2018, Local-to-distant provenance cyclicity of the southern Front Range, central Colorado: insights from detrital zircon geochronology, in Ingersoll, R. V., Lawton, T. F., and Graham, S. A., eds., *Tectonics, sedimentary basins, and provenance: a celebration of William R. Dickinson's career*: Geological Society of America, Special Paper, no. 540, 24 p., [http://doi.org/10.1130/2018.2540\(24\)](http://doi.org/10.1130/2018.2540(24)).

Covault, J., and Fildani, A., 2014, Continental shelves as sediment capacitors or conveyors: source-to-sink insights from the tectonically active Oceanside shelf, southern California, USA, in Chiocci, F. L., and Chivas, A. R. (eds.), *Continental shelves of the world: their evolution during the last glacio-eustatic cycle*, Geological Society, London, Memoirs: v. 41, no. 1, p. 315-326, <http://doi.org/10.1144/m41.23>.

McHargue, T., Pyrcz, M. J., Sullivan, M. D., Clark, J. D., Fildani, A., Levy, M., Drinkwater, N. J., Posamentier, H. W., Romans, B. W., and Covault, J., 2011, Event-based modeling of turbidite channel fill, channel stacking pattern, and net sand volume, in Martinsen, O., Pulham, A., Haughton, P., Sullivan, M., *Outcrops revitalized: tools, techniques and applications: SEPM Concepts in Sedimentology and Paleontology*, no. 10, p. 163-173, <http://doi.org/http://dx.doi.org/10.2110/sepmcsp.10.163>.

Normark, W. R., Piper, D. J. W., Romans, B. W., Covault, J., Dartnell, P., and Sliter, R. W., 2009, Submarine canyon and fan systems of the California Continental Borderland, in Lee, H. J., and Normark, W. R. (eds.), *Earth science in the urban ocean: the Southern California continental borderland*: Geological Society of America, Special Papers, v. 454, p. 141-168, [http://doi.org/10.1130/2009.2454\(2.7\)](http://doi.org/10.1130/2009.2454(2.7)).

Patents

Sun, T., Sullivan, M., Pyrcz, M. J., Perlmutter, M., and Covault, J., Sediment Transport Simulation with Parameterized Templates for Depth Profiling: 20,160,070,829, received March 2016.

Woelk, T. S., Nealon, J. W., Daigle, H. C., and Covault, J., Methods and systems for determining clathrate presence and saturation using simulated well logs: Patent Number 13/790,659, received March 2013.

Non Peer Reviewed Journal Articles

Sahakian, V., Kilb, D., Gomberg, J., Nieminski, N., and Covault, J., 2024, Submarine avalanche deposits hold clues to past earthquakes: *Eos*, v. 105, <http://doi.org/10.1029/2024EO240122>.

Non Peer Reviewed Book Chapters

Armitage, D. A., Romans, B. W., Covault, J., and Graham, S. A., 2009, Tres Pasos mass transport deposit topography; Sierra Contreras, in Fildani, A., Hubbard, S. M., and Romans, B. W., *Stratigraphic evolution of deep-water architecture: examples on controls and depositional styles from the Magallanes Basin, Chile*: SEPM Field Trip Guide Series 10, p. 55-58.

Covault, J., Romans, B., and Graham, S. A., 2009, Transition from deep-water to shelf edge deposition, Tres Pasos and Dorotea formations, Cerro Escondido, in Fildani, A., Hubbard, S. M., and Romans, B. W., *Stratigraphic evolution of deep-water architecture: examples on controls*

and depositional styles from the Magallanes Basin, Chile: SEPM Field Trip Guide Series 10, p. 67-69.

Conference Proceedings

Janson, X., Price, B., Covault, J., Dommissie, R., and Dunlap, D. B., 2019, Seismic Geomorphology of Permian Shelf Margin, Slope and Basin in the Northern Delaware Basin, 2019 AAPG Annual Convention and Exhibition.

Harris, A. D., Covault, J., Baumgardner, S., Madof, A. S., Sun, T., Sylvester, Z., and Granjeon, D., 2017, Authogenic 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., 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.

Craddock, W. H., Buursink, M., Covault, J., Brennan, S. T., Doolan, C. A., Drake, R. M., Merrill, M. D., Roberts-Ashby, T. L., Slucher, E. R., Warwick, P. D., Blondes, M. S., Freeman, P. A., Cahan, S. M., DeVera, C. A., and Lohr, C. D., 2014, Geologic framework for the national assessment of carbon dioxide storage resources--Alaska North Slope and Kandik Basin, Alaska: U.S. Geological Survey, Open-File Report 2012-1024-1, 60 p.

Drake, R. M., Brennan, S. T., Covault, J., Blondes, M. S., Freeman, P. A., Cahan, S. M., DeVera, C. A., and Lohr, C. D., 2014, Geologic framework for the national assessment of carbon dioxide storage resources--Denver Basin, Colorado, Wyoming, and Nebraska: U.S. Geological Survey, Open-File Report 2012-1024-G, 17 p.

Roberts-Ashby, T. L., Brennan, S. T., Buursink, M., Covault, J., Craddock, W. H., Drake, R. M., Merrill, M. D., Slucher, E. R., Warwick, P. D., Blondes, M. S., Gosai, M. A., Freeman, P. A., Cahan, S. M., DeVera, C. A., and Lohr, C. D., 2014, Geologic framework for the national assessment of carbon dioxide storage resources--U.S. Gulf Coast: U.S. Geological Survey, Open-File Report 2012-1024-H, 77 p.

Covault, J., Blondes, M. S., Cahan, S. M., DeVera, C. A., Freeman, P. A., and Lohr, C. D., 2013, Geologic framework for the national assessment of carbon dioxide storage resources, Columbia Basin of Oregon, Washington, and Idaho and the Western Oregon-Washington Basins: U.S. Geological Survey, Open-File Report 2012-1024-D, 19 p.

U.S. Geological Survey Geologic Carbon Dioxide Storage Resources Assessment Team, and Covault, J., 2013, National assessment of geologic carbon dioxide storage resources--data: U.S. Geological Survey, Data Series 774, 13 p.

U.S. Geological Survey Geologic Carbon Dioxide Storage Resources Assessment Team, and Covault, J., 2013, National assessment of geologic carbon dioxide storage resources--results: U.S. Geological Survey, Circular 1386, 41 p.

U.S. Geological Survey Geologic Carbon Dioxide Storage Resources Assessment Team, and Covault, J., 2013, National assessment of geologic carbon dioxide storage resources--summary: U.S. Geological Survey, Fact Sheet 2013-3020, 6 p.

Covault, J., Buursink, M., Craddock, W. H., Merrill, M. D., Blondes, M. S., Gosai, M. A., and Freeman, P. A., 2012, Geologic framework for the national assessment of carbon dioxide storage resources--Bighorn Basin, Wyoming and Montana: U.S. Geological Survey, Open-File

Report 2012-1024-A, 23 p.

Merrill, M. D., Covault, J., Craddock, W. H., Slucher, E. R., Warwick, P. D., Blondes, M. S., Gosai, M. A., Freeman, P. A., Cahan, S. M., and Lohr, C. D., 2012, Geologic framework for the national assessment of carbon dioxide storage resources: Hanna, Laramie, and Shirley Basins, Wyoming: U.S. Geological Survey, Open-File Report 2012-1024-C, 24 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.