

Kelly E. Hattori

Professional Summary

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Business address: The University of Texas at Austin
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Professional Preparation

Professional Appointments

Research Science Associate IV, Bureau of Economic Geology (September 2022-Present)

Research Scientist Associate III, Bureau of Economic Geology, The University of Texas at Austin (July 2019-Present)

Research aspects of carbonate geology in the Gulf of Mexico. Mapping, core characterization, well correlation, field and regional studies in stratigraphy and sedimentology

Geologist, Bureau of Economic Geology (August 2017-July 2019)

Research aspects of Cretaceous carbonate geology in the Gulf of Mexico. Core characterization, well correlation, field-scale studies in stratigraphy/sedimentology. Particular focus on analysis of the Fairway Field, East Texas (Pearsall Fm./James Limestone) and development of skills in Cretaceous reef analysis (subsurface and outcrop).

Academic Background

M.S. Geology, Geosciences, The University of Texas at Austin, May 2017

B.S. Geology, Earth and Ocean Sciences, University of North Carolina, Wilmington, May 2014

B.S. Marine Biology, Biology and Marine Biology, University of North Carolina, Wilmington, May 2014

Theses

Architecture of a mid-Cretaceous patch reef: photogrammetric modeling of facies structures and ecological relationships at Paul Spur near Bisbee, Arizona., The University of Texas at Austin, 2017, 79 p.

Areas of Expertise

Areas of Expertise

Carbonate stratigraphy and sedimentology

Cretaceous reef paleoecology

East Texas Salt Basin

Halokinetic carbonate depositional systems

Mixed carbonate-siliciclastic depositional systems

Petrography of carbonate rocks

Publications

Peer Reviewed Journal Articles

Hattori, K. E., and Radjef, E., 2024, Lithologic controls on reservoir quality and production trends in the Pettet Formation, Rusk County, east Texas: AAPG Bulletin, v. 108, no. 3, p. 401-419, <http://doi.org/10.1306/11022322150>.

Jensen, J. L., Flaig, P. P., and Hattori, K. E., 2024, The effects of facies variability and bioturbation intensity on permeability in a mixed siliciclastic-carbonate core from the Upper Strawn Group,

Katz Field, Eastern Shelf of the Permian Basin, Texas, USA: Geosciences, v. 14, no. 12, article no. 339, 28 p., <http://doi.org/10.3390/geosciences14120339>.

Loucks, R. G., and Hattori, K. E., 2024, Geologic characterization of the Lower Cretaceous upper Travis Peak and Pettet Formations in the Wright Mountain field, Smith County, East Texas basin: potential reservoir analog for other Travis Peak and Pettet strata: Marine and Petroleum Geology, v. 163, no. 106791, 21 p., <http://doi.org/10.1016/j.marpetgeo.2024.106791>.

Hattori, K. E., Loucks, R. G., and Zeng, H., 2023, Back-reef depositional environments in a Lower Cretaceous (Sligo) shelf-margin complex: insights into ultradeep reservoir preservation and controls on stacking patterns in an outer platform setting: GCAGS Journal, v. 12, p. 17-32, <http://doi.org/10.62371/HGLG8668>.

Larson, T. E., Loucks, R. G., Sivil, J. E., Hattori, K. E., and Zahm, C. K., 2023, Machine learning classification of Austin Chalk chemofacies from high-resolution x-ray fluorescence core characterization: AAPG Bulletin, v. 107, no. 6, p. 907-927, <http://doi.org/10.1306/09232220095>.

Loucks, R. G., Zahm, C. K., Hattori, K. E., and Sanchez, T., 2023, Middle platform carbonate depositional systems and lithofacies patterns in the Lower Ordovician Ellenburger Group, Tobosa Basin in West Texas, U.S.A., and subsequent Sauk-Tppecanoe megasequence boundary meteoric karsting: Marine and Petroleum Geology, v. 150, no. 106176, 17 p., <http://doi.org/10.1016/j.marpetgeo.2023.106176>.

Loucks, R. G., Peng, S., Hattori, K. E., Periwai, P., Lambert, J. R., Zahm, C. K., and Ko, L. T., 2022, Depositional systems, lithofacies, and reservoir characterization of the Upper Cretaceous Austin Chalk, Brookeland and Burr Ferry fields in East Texas and western Louisiana: GCAGS Journal, v. 11, p. 37-57.

Ettinger, N. P., Larson, T. E., Kerans, C., Thibodeau, A. M., Hattori, K. E., Kacur, S. M., and Martindale, R. C., 2021, Ocean acidification and photic-zone anoxia at the Toarcian Oceanic Anoxic Event: insights from the Adriatic Carbonate Platform: Sedimentology, v. 68, no. 1, p. 63-107, <http://doi.org/10.1111/sed.12786>.

Hattori, K. E., and Loucks, R. G., 2021, Cyclicity of carbonate shoaling sequences of the Lower Cretaceous Pettet Formation, Rusk County, East Texas: GCAGS Journal, v. 10, p. 31-46.

Hattori, K. E., Kerans, C., and Martindale, R. C., 2019, Sequence stratigraphic and paleoecologic analysis of an Albian coral-rudist patch reef, Arizona, USA: PALAIOS, v. 34, no. 12, p. 600-615, <http://doi.org/10.2110/palo.2019.052>.

Hattori, K. E., Loucks, R. G., and Kerans, C., 2019, Stratal architecture of a halokinetically controlled patch reef complex and implications for reservoir quality: a case study from the Aptian James Limestone in the Fairway Field, East Texas Basin: Sedimentary Geology, v. 387, p. 87-103, <http://doi.org/10.1016/j.sedgeo.2019.04.009>.

Hattori, K. E., Kelley, P. H., Dietl, G. P., Moore, N. O., Simpson, S. L., Zappulla, A. M., Ottens, K. J., and Visaggi, C. C., 2014, Validation of taxon-specific sampling by novice collectors for studying drilling predation in fossil bivalves: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 412, p. 199-207, <http://doi.org/10.1016/j.palaeo.2014.07.034>.

Non Peer Reviewed Journal Articles

Loucks, R. G., Hattori, K., and C. S. Spears, 2024, Stratigraphic and Lithofacies Framework of the Lower Cretaceous Pettet Formation in the Wright Mountain Field on the Northeastern Flank

of the East Texas Basin: GeoGulf Transactions, v. 73, p. 79-87.

Guidebooks

Kerans, C., Hunt, B., and Hattori, K., 2021, Stratigraphy and Hydrogeology of the Cow Creek/Trinity Aquifer System: GCAGS GeoGulf, 37 p.

Kerans, C., Loucks, R. G., Hattori, K. E., Rendall, B., Smith, B., Eljalafi, A., Larson, T., and Zahm, C., 2018, Facies architecture and platform demise of the Albian Devils River Trend, Maverick Basin: The University of Texas at Austin, Bureau of Economic Geology, field trip guidebook prepared for Reservoir Characterization Research Laboratory, 51 p.

Kerans, C., Loucks, R. G., Hattori, K., Rendall, B., Smith, B., Eljalafi, A. M., Larson, T., and Zahm, C., 2018, Facies Architecture and Platform Demise of the Albian Devils River Trend, Maverick Basin: RCRL Annual Sponsors Meeting Field Trip, 51 p.

Conference Proceedings

Moscardelli, L., Schuba, N., Dooley, T. P., and Hattori, K., 2023, Bedded salt formations of the Delaware Basin and their significance for salt cavern placement, IMAGE, Houston.

Published Reports

Moscardelli, L., Ambrose, W. A., Young, M. H., Scanlon, B. R., Flaig, P. P., Olariu, M. I., Hattori, K., Ko, L., Loucks, R. G., Radjef, E., Maraggi, L., Schuba, N., Sivil, J. E., Peng, S., Zhang, T., Sun, X., Zeng, H., Ogiesoba, O. C., Fu, Q., Reed, R. M., Rogers, H., Duncan, I. J., Dommissie, R., Jensen, J., Hessler, A., DeJarnett, B. B., and Periwai, P., 2023, State of Texas Advanced Resource Recovery (STARR) 2020-2022 biennium report: The University of Texas at Austin, Bureau of Economic Geology 51 p.

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.

Workshop Workbooks

Flaig, P. P., Hattori, K., Ambrose, W. A., Fu, Q., DeJarnett, B. B., Ko, L., Radjef, E., Carr, D. L., Hasiotis, S., Ogiesoba, O. C., and Moscardelli, L., 2021, Core Workshop: Mixed Carbonate-Siliciclastic Reservoir Systems of the Strawn Group: Focus - Upper Strawn, King and Stonewall Counties, Texas: STARR.

Hattori, K., 2021, Core Workshop: The Early Cretaceous Pettet Formation of East Texas: Key Facies, Stacking Patterns, and Reservoir Facies Distribution: RCRL Annual Meeting.

Hattori, K., 2018, Core Workshop: Facies Heterogeneity in a Shoaling Reef Complex of the Lower Cretaceous Aptian James Limestone from Henderson County, Texas: RCRL Annual Meeting.

Hattori, K., 2017, Core Workshop: Lower Cretaceous (Early Aptian) Reef and Reef-Associated Lithofacies of the James Limestone, Henderson County, Texas: RCRL Annual Meeting.

Published Abstracts

Loucks, R. G., Hattori, K., and C. S. Spears, 2024, Stratigraphic and Lithofacies Framework of the Lower Cretaceous Pettet Formation in the Wright Mountain Field on the Northeastern Flank of the East Texas Basin (abs.): GeoGulf, San Antonio, TX.

Loucks, R. G., Sivil, J. E., and Hattori, K., 2024, Carbon isotope secular curve for the Upper

Cretaceous Chalks in the South Texas Maverick Basin showing the expression of the OAE-2 and OAE-3 and associated lithofacies and chemostratigraphy (abs.): ISGC/SEPM Flagstaff, Az.

Flaig, P., Hasiotis, S., Ambrose, W. A., Hattori, K., and DeJarnett, B. B., 2021, The importance of integrating sedimentology and ichnology to accurately interpret the spatial-temporal relationship of mixed carbonate-clastic coastal-shelfal depositional systems, Pennsylvanian (Desmoinesian) Strawn Group, Texas (abs.): Geological Society of America Abstracts with Programs, v. 53, no. 6, item no. 12-4, <http://doi.org/10.1130/abs/2021AM-371245>.

Hattori, K. E., and Loucks, R. G., 2021, Cyclicity of carbonate shoaling sequences of the Lower Cretaceous Pettet Formation, Rusk County, East Texas (abs.): Gulf Coast Association of Geological Societies Transactions, v. 71, p. 413-414, http://www.geogulf.org/Dt7se9/Transactions/2021/pdfs/2021_3A_Hattori_and_Loucks.pdf.

Hattori, K. E., and Loucks, R. G., 2021, Regional and local controls on ooid shoal development in the Lower Cretaceous Pettet Formation, East Texas, USA, and effect on reservoir distribution (abs.): International Meeting for Applied Geoscience and Energy 2021 (formerly AAPG ACE) Technical Program.

Hattori, K., Kerans, C., and Martindale, R., 2021, Paleoecology of a mid-Cretaceous patch reef: Fossil assemblages yield evidence of environmental change through time (abs.): Geological Society of America Abstracts with Programs, v. 53, no. 6, item no. 140-6, <http://doi.org/10.1130/abs/2021AM-365476>.

Hattori, K., Loucks, R. G., and Ambrose, W. A., 2020, A new architectural framework for the Early Cretaceous Sligo/Pettet Formation of East Texas (abs.): American Association of Petroleum Geologists Annual Conference and Exhibition 2020 Technical Program.

Hattori, K., Loucks, R., and Kerans, C., 2019, New model for halokinetically controlled patch reef systems: a case study from the Fairway field, a major Aptian reservoir in the East Texas Basin (abs.): Proceedings, American Association of Petroleum Geologists Annual Conference and Exhibition 2019, no. 90350.

Presentations

Invited Presentations

Cyclicity of carbonate shoaling sequences of the Lower Cretaceous Pettet Formation, Rusk County, East Texas: presented at GeoGulf 2021, Austin, TX, October 29, 2021.

Paleoecology of a mid-Cretaceous patch reef: Fossil assemblages yield evidence of environmental change through time: presented at GSA Connects 2021, Portland, OR, October 12, 2021.

Regional and local controls on ooid shoal development in the Lower Cretaceous Pettet Formation, East Texas, USA, and effect on reservoir distribution: presented at IMAGE 2021 (formerly AAPG ACE), September 28, 2021.

Halokinetic influence on carbonate depositional environments: An example from the Fairway Field, East Texas Salt Basin: presented to Texas Commission on Environmental Quality, August 17, 2021.

A new sequence stratigraphic framework for the Early Cretaceous Pettet Formation of East Texas and investigation of controls on facies deposition.: presented to East Texas Geological Society, 2020.

Halokinetic influence on carbonate depositional environments: An example from the Fairway Field, East Texas Basin: presented to Austin Geological Society, 2020.

Validity of taxon-specific sampling for studies of drilling predation: confirmation from four bivalve species in the Pleistocene of North Carolina: presented at Geological Society of America (GSA) Annual Meeting, Denver, Colo., October 27, 2013.

Presentations

Bedded salt formations of the Delaware Basin and their significance for salt cavern placement: presented at IMAGE, Houston, TX, August 28-September 1, 2023.

Depositional systems of the James Limestone in East Texas: Global, regional, and local context for a complex formation: presented to East Texas Geological Society, Tyler, Tex., September 2022.

The road less traveled: An unusual path into geological research, and insight into ways forward into a great geological career: presented to Stephen F. Austin State University AAPG Student Chapter, Nacogdoches, Tex., September 2022.

The importance of evaluating the overprint of local-scale controls on eustatically-driven sequence stratigraphic frameworks: an example from the Early Cretaceous Pettet Formation, East Texas, USA: presented at Mountjoy Carbonate Research Conference III, Banff, Alta., Canada, August 2022.

Facies and sequence stratigraphy of the Early Cretaceous Pettet Formation, Rusk County, East Texas: presented at SWS AAPG, June 25, 2021.

A new architectural framework for the Early Cretaceous Sligo/Pettet Formation of East Texas: presented at AAPG ACE, virtual, 2020.

Assessing the impact of halokinesis on carbonate stratal architecture: An example from the Cretaceous Fairway Field, East Texas Salt Basin: presented to UT Austin Jackson School of Geosciences Soft Rocks Seminar Series, 2020.

Controls on ooid shoal distribution in the Lower Cretaceous Pettet Formation, East Texas: presented at Reservoir Characterization Research Laboratory Annual Meeting, virtual, 2020.

Revisiting the Sligo/Pettet Formation of East Texas: development of a stratigraphic framework to aid in searching for missed opportunities: presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, October 7, 2019.

New model for halokinetically controlled patch reef systems: a case study from the Fairway field, a major Aptian reservoir in the East Texas Basin: presented at AAPG Annual Convention, San Antonio, Texas, May 20, 2019.

Halokinetically mediated stratal architecture of the Aptian James limestone in the Fairway field, East Texas: assessing evolution and variability in a shoaling patch reef complex in a salt basin: presented to AAPG, University of Texas at Austin Chapter, Austin, Texas, February 1, 2019.

Geochemical insights into highstand and transgressive system tracts of the late Albian Pecos and Devil's River, Texas: presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, October 22, 2018.

Salt-mediated stratal architecture and lithofacies of the Aptian James limestone in the Fairway field, East Texas: lateral variability in a high-energy carbonate shoaling complex: presented at RCRL Annual Meeting, Austin, Texas, October 22, 2018.

Facies heterogeneity in a shoaling reef complex of the Lower Cretaceous Aptian James limestone from Henderson County, Texas (Core Workshop): presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, October 21, 2018.

Architecture of a mid-Cretaceous patch reef: insight into facies associations and reef development at Paul Spur, Bisbee, Arizona: presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, September 18, 2017.

Lower Cretaceous (early Aptian) reef and reef-associated lithofacies of the James limestone, Henderson County, Texas (Core Workshop): presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, September 17, 2017.

Architecture of a mid-Cretaceous patch reef: high-resolution mapping of facies structures and distribution at Paul Spur, Bisbee, Arizona: presented to Bureau of Economic Geology, presented at RCRL Annual Meeting, Austin, Texas, October 1, 2016.

Architecture of a mid-Cretaceous patch reef: high-resolution mapping provides new insight into facies structures and ecological relationships at Paul Spur (Bisbee, Arizona): presented at Geological Society of America (GSA) Annual Meeting, Denver, Colo., September 26, 2016.

Paleoecological relationships within a molluscan assemblage from the Pleistocene of Horry County, South Carolina: presented at Geological Society of America (GSA) Annual Meeting, Denver, Colo., October 28, 2013.

Analyses of taphonomic bias in the Canepatch Formation, Upper Pleistocene, Horry County, South Carolina: presented at Geological Society of America (GSA) Southeastern Section Annual Meeting, San Juan, Puerto Rico, March 21, 2013.

Taxon-specific sampling by novices and experienced collectors yields robust data on drilling predation on fossil bivalves: presented at Geological Society of America Southeastern Section Annual Meeting, San Juan, Puerto Rico, March 20, 2013.

Validation of taxon-specific sampling for studying drilling predation on fossil bivalves: presented at Geological Society of America (GSA) Annual Meeting, Charlotte, N.C., November 1, 2012.

Facies and interpretations of depositional conditions at the Lower Cretaceous Sligo shelf margin in East Texas: Insights from a rare long core in Tyler Co, Texas: presented at RCRL Annual Meeting, Austin, Tex.

Paleogeographic controls on post-OAE 1a carbonate factory recovery: An example from the Fairway Field, East Texas Basin: presented at RCRL Annual Meeting, Austin, Tex.

Awards

Awards and Honorary Societies

Jackson School of Geosciences Recruiting Fellowship, 2015-2017

Winifred Goldring Award, 2016

Ronald K. DeFord Field Fellowship, 2015-2016

Whitney Endowed Presidential Scholarship, 2015-2016

Service

External Committees Participation

Field Trip Chair, Steering Committee, GCAGS Geogulf 2021, Austin, Tex.

Technical Program Co-Chair, Steering Committee, GCAGS Geogulf 2021, Austin, Tex.

Technical Session Chair, Characterization of Conventional Carbonate Reservoirs, AAPG/SEG Annual Meeting, 2021

Teaching and Advising

Field Trips Leadership

Co-Leader, Stratigraphy and Hydrogeology of the Cow Creek Formation/Trinity Aquifer System, GCAGS GeoGulf 2021, Central Texas, October 30, 2021.

Co-Leader, Facies Architecture and Platform Demise of the Albian Devils River Trend, Maverick Basin, RCRL, Del Rio, TX, October 23-26, 2018.

Activities of a Professional Nature

Professional Societies

American Association of Petroleum Geologists

Association for Women Geoscientists

Geological Society of America

Society for Sedimentary Geology

Funding

Research Support

Principal investigator: Mid-Cretaceous reef characterization and digitization, American Museum of Natural History (2016-2017; \$1,000).

Principal investigator: Mid-Cretaceous reef characterization and digitization, Geological Society of America (2016-2017; \$1,375).

Principal investigator: Mid-Cretaceous reef characterization and digitization, Paleontological Society (2016-2017; \$2,800).

Principle investigator: Mid-Cretaceous reef characterization and digitization, Evolving Earth Foundation (2016-2017; \$1,875).