

1. R. M. (Matt) Joeckel: abbreviated curriculum vitae

2. Education

1990–1993: Ph.D. (major: Geology), University of Iowa Department of Geology. Graduated: May 1993.
1991–1992: Independent study courses in Agronomy, Iowa State University (exchange program).
1988–1990: Graduate study in Geology, Zoology, and Soil Science, University of Florida.
1986–1988: M. S. (major: Geology; minor: Biological Sciences), University of Nebraska–Lincoln Department of Geology. Graduated: May 1988.
1985–86: Graduate study in Geology, Systematics and Ecology, and Geography, University of Kansas.
1981–85: B. S. (major: Geology), University of Nebraska–Lincoln. Graduated with Distinction: May 1985.

3. Current position

July 2014–present; State Geologist and Director of Conservation and Survey Division, and Senior Associate Director of School of Natural Resources (from 2019); also, Professor, School of Natural Resources, IANR, and Department of Earth and Atmospheric Sciences (30% joint appointment), UNL during 2007–2020; Curator of Geology at University of Nebraska State Museum (2010–present).

4. Recent grants and contracts—awarded (past 5 yrs. only)

2025–2026: Contract, Geologist–Hydrogeologist–Year 3, Lower Platte South NRD, Lower Platte South NRD, \$67,000.00, Principal Investigator.
2025–2026: Developing a Groundwater/Surface Water Level Monitoring Program for NIOB: Testhole Drilling and Well Installation–Year 2, U.S. Geological Survey, \$26,400. Principal Investigator.
2025–2027: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program, U.S. Geological Survey, \$217,270, Co-Investigator.
2025–2025: Nebraska Water Leaders Academy 2025, Nebraska State Irrigation Association, \$18,248, Co-Investigator.
2024–2025: Developing a Groundwater/Surface Water Level Monitoring Program for NIOB: Testhole Drilling and Well Installation–Year 1, U.S. Geological Survey, \$20,000. Principal Investigator.
2024–2025: Contract, Geologist–Hydrogeologist–Year 2, Lower Platte South NRD, \$65,000.00, Principal Investigator.
2024–2025: Earth MRI Workshop, U.S. Geological Survey, \$4,000, Co-Investigator.
2024–2025: Pre-Illinoian Till in Nebraska, U.S. Geological Survey/University of Iowa, \$109,999. Co-Principal Investigator
2024–2025: Priority 2: Repository Improvements, U.S. Geological Survey, \$9,540. Co-Investigator.
2024–2024: Nebraska Water Leaders Academy 2024, Nebraska State Irrigation Association, \$23,246, Co-Investigator.
2023–2025: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program, U.S. Geological Survey, \$107,223, Co-Investigator
2022–2023: Contract, Geologist–Hydrogeologist–Year 1, Lower Platte South NRD, \$63,379.00, Principal Investigator.
2022–2023: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program U.S. Geological Survey, \$150,302, Investigator.
2021–2023: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program U.S. Geological Survey, \$107,332, Investigator
2021–2023: Critical Minerals Plan, U.S. Geological Survey, \$2,998, Investigator.

2022–2023: Nebraska Critical Minerals, U.S. Geological Survey, \$50,544.00, Investigator.

2021–2023: Critical Minerals in the Forest City Basin (CMCSCFCB", Department of Energy/Univ of Kansas Center for Research, \$50,227.00, Principal Investigator (for work in Nebraska).

2021–2022 Critical Minerals in the Forest City Basin (CMCSCFCB", DOE/Univ of Kansas Center for Research, \$48,773.00, Principal Investigator (for work in Nebraska).

2021–2022: Priority 2 – Critical Minerals Database, U.S, Geological Survey, \$44,484, Investigator.

2021–2022: Priority1 – Core Preservation Inventory, Database, U.S, Geological Survey, \$23,844, Investigator.

2021–2022 Pennsylvanian Stratigraphic Nomenclature, U.S, Geological Survey/University of Kansas Center for Research, \$10,000.00, Principal Investigator (for work in Nebraska).

2021–2022: Pennsylvanian Stratigraphic Nomenclature", University of Kansas Center for Research, Universities, \$10,000.00, Principal Investigator.

2020–2022: Nebraska Water Leaders Academy, Nebraska State Irrigation Association, \$52,459.00, Investigator.

2020–2022: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program U.S. Geological Survey, \$185,950, Investigator

2019–2021: Nebraska Water Leaders Academy", Nebraska State Irrigation Association, \$39,340.00, Investigator

2019–2021: Geologic Mapping in Nebraska, United States Geological Survey STATEMAP Cooperative Geologic Mapping Program U.S. Geological Survey, \$45,005, Investigator

2018–2021: National Groundwater Monitoring Network, U.S. Geological Survey, \$64,432, Investigator

2018–2020: Nebraska CarbonSAFE, Battelle Memorial Institute, \$73,749.00, Principal Investigator.

2017–2021: Nebraska GeoCloud, Lower Platte South NRD, \$264,014, Investigator.

5. Selected Memberships and Recent Awards

2025 Outstanding Alumni Award, Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln

Chair (2022–2023): North American Commission on Stratigraphic Nomenclature

Statistician (2022–2023): Association of American State Geologists

Commissioner (2018–present): North American Commission on Stratigraphic Nomenclature

Member (2014–present) Association of American State Geologists (as of January 1, 2024: 10th longest-serving active Member)

Fellow: Geological Society of America

Member: Nebraska Geological Society

2018: Editors' Pick, *Sedimentology* (with J. Korus, D. Divine, and J. Abraham)

2018: Margaret Hawn Mirabile Memorial Best Student Paper Award, 2019 Eastern Section AAPG Meeting (coauthor on paper presented by awardee V. Smith)

6. Publications

Published peer-reviewed journal articles:

Khalil, M.A., Hallum, D.R., Joeckel, R.M., Krondak, M., 2025. Integrated 2D time-lapse resistivity tomography and spontaneous potential surveys demonstrate seasonal, use-related patterns of seepage from a water-supply canal system. *Journal of Applied Geophysics* 238, 105708.

Hanson, P.R., Joeckel, R.M., Howard, L.M., 2024. Assessing Oregon Trail ruts with aerial stereophotographs, satellite imagery and LiDAR. *Great Plains Research* 34 (2), 67-83..

- Smith, J.J., Joeckel, R.M., Field, H.L., Ludvigson, G.A., Möller, A., Layzell, A., Tucker, S.T., 2024. Integrated geochronological and chemostratigraphic study of middle Miocene strata (Ogallala Group) at the eastern margin of the North American Great Plains. *Evolving Earth* [https://doi.org/10.1016/j.eve.2024.100050].
- Korus, J.T., Joeckel, R.M., Mittelstet, A.R., Shrestha, N., 2024. Multiscale characterization of splays produced by a historic, snow–detonated flood on a large, braided stream (Platte River, Central USA). *Earth Surface Processes and Landforms* 49 (14) 4788–4807 [https://doi.org/10.1002/esp.5997].
- Khalil, M.A., Barrick, D., Joeckel, R.M., 2024. Characterization of seepage in an earthfill dam by the integration of geophysical surveys and geotechnical data. *Journal of Applied Geophysics*, 220, 105273 [https://doi.org/10.1016/j.jappgeo.2023.105273].
- Gebril, A., Khalil, M.A., Joeckel, R.M., Rose, J., 2024. Analysis of legacy gravity data reveals sediment-filled troughs buried under Flathead Valley, Montana, USA. *Near–Surface Geophysics* 222, 1–16 [doi 10.1002/nsg.12295].
- Joeckel, R.M., Suarez, C.A., McLean, N.M., Möller, A., Ludvigson, G.A., Suarez, M.B., Kirkland, J.I., Andrew, J., Kiessling, S., Hatzell, G., 2023. Berriasian–Valanginian geochronology and carbon–isotope stratigraphy of the Yellow Cat Member, Cedar Mountain Formation, eastern Utah, USA. *Geosciences*, 13(2), 18 p.[https://doi.org/10.3390/geosciences13020032].
- Korus, J.T., Joeckel, R.M., 2023. Exhumed fluvial landforms reveal evolution of late Eocene–Pliocene rivers on the Central and Northern Great Plains, USA. *Geological Society of America Geosphere*, 19(3), 695–718 [https://doi.org/10.1130/GES02587.1.].
- Korus, J.T., Joeckel, R.M., 2023. Telescopic megafans on the High Plains, USA were signal buffers in a major source–to–sink system. *The Sedimentary Record* 21(1). [https://doi.org/10.2110/001c.89096.].
- Joeckel, R. M., Korus, J.T., Turk, J.K., Arps, C.C., Arps, N.V., Howard, L.M., 2022. Strange stones of Skull Creek: Basalt glacial erratics and omars in eastern Nebraska. *Great Plains Research* 32, 1–20 [https://www.unl.edu/plains/publications/GPR/gpr.shtml].
- Khalil, M.A., Temraz, M.G., Joeckel, R.M., Einaggar, O.M., Abuseda, H.H., 2022. Estimating hydraulic conductivity from reservoir resistivity logs, northern Western Desert, Egypt. *Pure and Applied Geophysics*, 179, 4489–4501.
- Khalil, M.A., Sadeghiamirishahidi, M., Joeckel, R.M., Santos, F.M., Riahi, A., 2022. Mapping a hazardous abandoned gypsum mine using self–potential, electrical resistivity tomography, and frequency domain electromagnetic methods. *Journal of Applied Geophysics* 205 (104771), 1–21.
- Korus, J. T., Joeckel, R. M., 2022. Sandstone–body geometry and hydrostratigraphy of the northern High Plain aquifer system, USA. *Geological Society of London Quarterly Journal of Engineering Geology and Hydrogeology*, 55(3) [https://qjeh.lyellcollection.org/].
- Korus, J T., Joeckel, R.M., Abraham, J.D., Hoyer, A.–S., Jorgenson, F., 2021. Reconstruction of pre–Illinoian ice margins and glaciotectionic structures from airborne electromagnetic (AEM) surveys at the western limit of Laurentide glaciation, Midcontinent U.S.A. *Quaternary Science Advances*, 4, 15.
- Robertson, C., Ludvigson, G.A., Joeckel, R.M., Mohammadi, S., Kirkland, J. I., 2021. Differentiating early from later diagenesis in a Cretaceous sandstone and petroleum reservoir of the Cedar Mountain Formation in Utah. *Rocky Mountain Geology* 56, 19–36.
- Russell, M.V., Mittelstet, A.R., Messer, T.L., Korus, J.T., Joeckel, R M., 2021. Evolution of three streambanks before and after stabilization and record flooding. *Ecological Engineering*, 170 (106357), 1–8.
- Russell, M., Mittelstet, A., Joeckel, R.M., Korus, J., Castro Bolinaga, C., 2021. Impact of bank stabilization structures on upstream and downstream bank mobilization at Cedar River, Nebraska. *Transactions of the ASABE*, 64, 1555–1567.

- Joeckel, R.M., Ludvigson, G.A., Möller, A., Hotton, C.L., Suarez, M.B., Suarez, C.A., Sames, B., Kirkland, J.I., Hendrix, B., 2020. Chronostratigraphy and Terrestrial Palaeoclimatology of Berriasian–Hauterivian Strata of the Cedar Mountain Formation, Utah, USA. Geological Society Special Publication 498 [https://sp.lyellcollection.org/content/early/2019/10/16/SP498–2018–133].
- Smith, V.L., Joeckel, R.M., 2020. Reservoir characterization and static Earth model for potential CO₂ storage in Upper Pennsylvanian Cyclothems, Nebraska, USA. *Environmental Geosciences* 27(2), 67–86.
- Korus, J.T., Joeckel, R.M., Tucker, S.T., 2020. Genesis of giant, bouldery bars in a Miocene gravel–bed river: Insights from outcrop sedimentology, UAS–SfM photogrammetry, and GPR. *Journal of Sedimentary Research*, 90 (1), 27–47.
- Joeckel, R.M., Hanson, P.R., Howard, L.M., 2019. Solving a periglacial puzzle: Pleistocene polygonal ground in North–Central Nebraska. *Great Plains Research*, 29 (2), 153–168.
- Feitl, M., Kern, A.K., Jones, A., Fritz, S.C., Baker, P.A., Joeckel, R.M., Salenbien, W., Willard, D., 2019. Paleoclimate of the subtropical Andes during the latest Miocene, Lauca Basin, Chile. *Palaeogeography, Palaeoclimatology, Palaeoecology* 534, article no. 109336
- Joeckel, R.M. and Howard, L.M., 2018. The ups and downs of Nebraska: Recognizing gilgai in the state. *Great Plains Research*, 28(1), 51–64.
- Joeckel, R.M., Diffendal, R.F., Jr., Hanson, P.R., Korus, J.T., 2018. Geologic mapping in Nebraska: Old rocks, new maps, fresh insights. *Great Plains Research* 28, 119–147.
- Smith, J.J., Turner, E., Möller, A., Joeckel, R.M., Otto, R.E., 2018. First U–Pb zircon ages for late Miocene Ashfall Konservat–Lagerstätte and Grove Lake ashes from eastern Great Plains, USA. *PLoS One* [https://doi.org/10.1371/journal.pone.0207103].
- Bishop, I.W., Tucker, S.T., Joeckel, R.M., Spaulding, S.A., 2018. Benthic fossil diatoms from the upper Ogallala Group (late Miocene) near Scotia, NE (USA). *Nova Hedwigia, Beihefte*, 147, 261–294.
- Richey, J.D., Upchurch, G.R., Montañez, I.P., Lomax, B.H., Suarez, M.B., Crout, N.M.J., Joeckel, R.M., Ludvigson, G.A., Smith, J.J., 2018. Changes in CO₂ during the Ocean Anoxic Event 1d indicate similarities to other carbon cycle perturbations. *Earth and Planetary Science Letters*, 491(1), 172–182.
- Joeckel, R.M., Ludvigson, G.A., Kirkland, J.I., 2017. Lower Cretaceous paleo–Vertisols and sedimentary interrelationships in stacked alluvial sequences, Utah, USA. *Sedimentary Geology*, 361, 1–24.
- Korus, J.T., Joeckel, R.M., Divine, D.P., Abraham, J.D., 2017. Three–dimensional architecture and hydrostratigraphy of cross–cutting buried valleys using airborne electromagnetics, glaciated Central Lowlands, Nebraska, USA. *Sedimentology* 64: 553–581.
- Joeckel, R.M., Tucker, S.T., McMullin, J.D., 2016. Morphosedimentary features from a major flood on a small, lower–sinuosity, single–thread river: The unknown quantity of overbank deposition, historical–change context, and comparisons with a multichannel river. *Sedimentary Geology* 343:18–37.
- Sweeney, M.R., Zlotnik, V.A., Joeckel, R.M., Stout, J.E., 2016. Geomorphic and hydrologic controls of dust emissions during drought from Yellow Lake playa, West Texas, USA. *Journal of Arid Environments* 133: 37–46.
- Joeckel, R.M., Tucker, S.T., Fielding, C.R., 2015. Sedimentological effects and stratigraphic implications of a rare, high–stage flow in an evolving, braided to anabranching stream with riparian woodland. *Sedimentary Geology* 325, 71–89.
- Ludvigson, G.A., Joeckel, R.M., Murphy, L.R., Stockli, D.F., González, L.A., Suarez, C.A., Kirkland, J.I., Al–Suwaidi, A., 2015. The emerging terrestrial record of early Cretaceous global change. *Cretaceous Research* 56, 1–24.

- Fielding, C.R., Joeckel, R.M., 2015. Recognition of tidal–bore deposits in the rock record: towards a facies model. *Journal of Sedimentary Research* 85, 118–123.
- Burberry, C.M., Joeckel, R.M., Korus, J.T., 2015. Post–Mississippian tectonics of the Nemaha Tectonic Zone and Mid–Continent Rift System, SE Nebraska and N Kansas. *The Mountain Geologist*, 52, 47–73.
- Joeckel, R.M., Wooden, S.R., Jr., Korus, J.T., Garbisch, J.O., 2014. Architecture, heterogeneity, and origin of late Miocene fluvial deposits hosting the most important aquifer in the Great Plains, USA. *Sedimentary Geology*, 311, 75–95.
- Joeckel, R. M., Tucker, S.T., 2013. Exceptionally well–preserved latest Miocene (Hemphillian) rodent burrows from the eastern Great Plains, United States, and a review of the burrows of North American rodents. *Palaios* 11: 793–834.
- Zhang, L., Fang, J., Joeckel, R. M., 2013. Microbial biomass and community structure in alkaline lakes of the Nebraska Sand Hills, USA. *Chemical Geology* 356:171–180.
- Joeckel, R.M., Korus, J.T., 2012. Bayhead delta interpretation of an Upper Pennsylvanian sheetlike sandbody and the broader understanding of transgressive deposits in cyclothems. *Sedimentary Geology* 216: 15–28.
- Horn, J.D., Joeckel, R.M., Fielding, C.R., 2012. Progressive abandonment and planform changes of the central Platte River in Nebraska, central USA, over historical timeframes. *Geomorphology* 139–140: 372–383.
- Horn, J.D., Fielding, C.R., Joeckel, R.M., 2012. Revision of Platte River alluvial facies model through observations of extant channels and barforms, and subsurface alluvial valley fills. *Journal of Sedimentary Research* 82:72–91.
- Joeckel, R.M., Wally, K.D., Ang Clement, B. J., Hanson, P.R., Dillon, J.S., Wilson, S.K., 2011, Low–temperature acidic weathering of sulfidic shales and neoformation of aluminum–bearing minerals, Eastern Nebraska, USA. *Catena* 85: 253–266.
- Antia, J., Fielding, C.R., Joeckel, R.M., 2011. Multiple cycles of wave–dominated estuarine deposits in low–accommodation settings, Cretaceous J sandstone, northwestern Nebraska. *AAPG Bulletin* 95: 1227–1256.
- Mason, J.A., Greene, R.S.B., Joeckel, R.M., 2011. Laser diffraction analysis of the disintegration of aeolian sedimentary aggregates in water. *Catena* 87: 107–118.
- Ludvigson, G.A., Joeckel, R.M., Gonzalez, L.A., Gulbranson, E.L., Rasbury, E.T., Hunt, G.J., Kirkland, J.I., Madsen, S., 2010, Correlation of Aptian–Albian Carbon Isotope Excursions in Continental Strata of the Cretaceous Foreland Basin of eastern Utah. *Journal of Sedimentary Research* 80: 955–974.
- Ludvigson, G.A., Witzke, B.J., Joeckel, R.M., Ravn, R.L., Phillips, P.L., Gonzalez, L.A., Brenner, R.L., 2010. New insights on the sequence stratigraphic architecture of the Dakota Formation in Kansas–Nebraska–Iowa from a decade of sponsored research activity. *Kansas Geological Survey Current Research in Earth Sciences, Bulletin* 25, part 2. p. 1–35 [URL <http://www.kgs.ku.edu/Current/2010/Ludvigson/index.html>].
- Hanson, P.R., Arbogast, A.F., Johnson, W.C., Joeckel, R.M., Young, A.R., 2010. Megadroughts and late Holocene dune activation at the eastern margin of the Great Plains, North–Central Kansas, USA. *Aeolian Research*, 1: 101–110.
- Hanson, P.R., Joeckel, R.M., Young, A.R., Horn, J., 2009. Late Holocene dune activity in the Eastern Platte River Valley, Nebraska. *Geomorphology*, 103: 555–561.
- Fischbein, S.A., Joeckel, R.M., Fielding, C.R., 2009., Fluvial–estuarine reinterpretation of large, isolated sandstone bodies in epicontinental cyclothems, Upper Pennsylvanian, northern Midcontinent, USA, and their significance for understanding late Paleozoic sea–level fluctuations. *Sedimentary Geology* 216: 15–28.
- Joeckel, R.M., 2008. Enigmatic structures in an Upper Pennsylvanian (Kasimovian) marine limestone. *Palaios* 23: 833–847.

- Joeckel, R.M., Henebry, G.M., 2008. Channel and island change in the lower Platte River, Eastern Nebraska, USA: 1855–2005. *Geomorphology* 102: 407–418.
- Korus, J.T., Kvale, E.P., Eriksson, K.A., Joeckel, R.M., 2008. Compound paleovalley fills in the Lower Pennsylvanian New River Formation, West Virginia, USA. *Sedimentary Geology*, 20: 15–26.
- Gao, S.S., Niemi, T.M., Black, R.A., Liu, K.H., Anderson, R.R., Joeckel, R.M., Busby, R.W., Taber, J. 2008. Rationale for a permanent seismic network in the U.S. Central Plains utilizing U.S. Array. *Eos* 89:85.
- Joeckel, R.M., Loope, H.M., Wally, K.D., Hellerich, J.E., 2007. Late Cenozoic geomorphology of a bedrock-dominated landscape adjacent to the laurentide glacial limit, Southeastern Nebraska, USA. *Zeitschrift für Geomorphologie* 51: 469–486.
- Joeckel, R.M., Wally, K.D., Fischbein, S.A., Hanson, P.R., 2007. Sulfate mineral paragenesis in Pennsylvanian rocks and the occurrence of slavikite in Nebraska. *Great Plains Research* 17: 17–34.
- Joeckel, R.M., Nicklen, B.L., Carlson, M.P., 2007. Low-accommodation, eustasy-dominated, coarse-clastic sediment apron alongside a basement uplift, Pennsylvanian of Midcontinent North America. *Sedimentary Geology* 197: 165–187.
- Mason, J.A., Joeckel, R.M., Bettis, E.A., 2007. Middle to Late Pleistocene loess record in eastern Nebraska, USA, and implications for the unique record of Oxygen Isotope Stage 2. *Quaternary Science Reviews* 26: 773–792.
- Phillips, P.L., Ludvigson, G.A., Joeckel, R.M., González, L.A., Brenner, R.L., Witzke, B.J., 2007. Sequence stratigraphic controls on synsedimentary cementation and preservation of dinosaur tracks: Examples from the lower Cretaceous (upper Albian) Dakota Formation, Southeastern Nebraska, U.S.A. *Palaeogeography, Palaeoclimatology, Palaeoecology* 246: 367–389.
- Gröcke, D.R., Ludvigson, G.A., Witzke, B.L. Robinson, S.A., Joeckel, R.M., Ufnar, D. F., Ravn, R.L., 2006. Recognizing the Albian–Cenomanian (OAE1d) sequence boundary using plant carbon isotopes: Dakota Formation, Western Interior Basin, USA. *Geology* 34: 193–196.
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- Burbach, M.E., Joeckel, R.M., 2006. A delicate balance: Rainfall and groundwater in Nebraska during the 2000–2005 drought. *Great Plains Research* 16: 5–16.
- Fang, J., Chan, O., Joeckel, R.M., Huang, Y., Wang, Y., Bazylnski, D.A., Moorman, T. B., Ang Clement, B. J., 2006. Biomarker analysis of microbial diversity in sediments of a saline groundwater seep in Nebraska. *Organic Geochemistry* 37: 912–931.
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- Feldman, H.R., Franseen, E.K., Joeckel, R.M., Heckel, P.H., 2005. Impact of longer-term modest climate shifts on architecture of higher-frequency sequences (cyclothems), Pennsylvanian of Mid-continent USA. *Journal of Sedimentary Research* 75: 350–368.
- Joeckel, R.M., Diffendal, R.F., Jr., 2004. Geomorphic and environmental change around a large, aging reservoir: Lake C.W. McConaughy, western Nebraska, USA. *Environmental and Engineering Geoscience* 10: 69–90.
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- Joeckel, R.M., 1999. Paleosol in Galesburg Formation (Kansas City Group, Upper Pennsylvanian), northern Midcontinent, U.S.A.: Evidence for climate change and mechanisms of marine transgression. *Journal of Sedimentary Research* 69: 720–737.
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- Joeckel, R.M., Bond, H.W., Kabalka, G.W., 1997. Internal anatomy of the snout and paranasal sinuses of *Hyaenodon* (Mammalia, Creodonta). *Journal of Vertebrate Paleontology* 17: 440–446.
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- Joeckel, R.M., 1995. Tectonic and paleoclimatic significance of a Locally Prominent Upper Pennsylvanian (Virgilian/Stephanian) weathering profile, Iowa and Nebraska, U.S.A. *Palaeogeography, Palaeoclimatology, Palaeoecology* 118:159–179.
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- Joeckel, R.M., 1991. Paleosol stratigraphy of the Eskridge Formation: Early Permian pedogenesis and climate in southeastern Nebraska. *Journal of Sedimentary Petrology* 61: 234–255.

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- Joeckel, R.M., 1988, A new Late Miocene herpetofauna from Franklin County, Nebraska. *Copeia* 1988(3): 787–789.
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- Schueth, J.D., Joeckel, R. M., Ziebolz, U., Basso, M., *in press*. Stratigraphy of the Upper Cretaceous Graneros Shale and Greenhorn Limestone on the eastern margin of the Western Interior Seaway, USA. *Stratigraphy*.
- Hanson, P.R., Joeckel, R.M., *in press*. Stratigraphy and OSL chronology of lunette deposits indicates that Nebraska’s rainwater basins formed by aeolian deflation between 39 and 25 ka. *Quaternary Research*.
- Khalil, M., Barrick, D., Joeckel, R. M., *in review*. Differentiation of structurally controlled seepage in a dam and dike complex by integrated geophysical surveys. *Environmental and Engineering Geoscience*.

Published book chapters

- Joeckel, R.M., Reinier, C.L., Hanson, P.R., Korus, J.T., Gilmore, T., Young, A.R., 2024. Physical Setting of the Sandhills in Maps, p. 60–73 *in* Norby, M.M., Diamond, J., Sutherlen, A., Fritz, S.C., Hachiya, K., Norby, D.A., Forsberg, M., *The Nebraska Sandhills*, University of Nebraska Press, Lincoln, NE, 259 p.
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- Paronish, T., Pohl, M., Parker, A., Schmitt, R., Moore, J., Spaulding, R., Haljasmaa, I., Crandall, D., Smith, V., Duguid, A., Joeckel, R. M., 2024. Computed Tomography Scanning and Geophysical Measurements of the Integrated Mid–Continent Stacked Carbon Storage Hub Sleepy Hollow Reagan Unit 86A Well; DOE/NETL–2024/4808 Technical Report Series; U.S. Department of Energy, National Energy Technology Laboratory: Morgantown, WV [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://netl.doe.gov/projects/files/ComputedTomographyScanGeophysMeasurIntegMidContStackCarbStorHubSleepyHolloReaganUn86AWell_091524.pdf].
- Andrzejewski, K.A., Layzell, A.L., Ludvigson, G.A., Joeckel, R.M., Möller, A., Mandel, R.D., 2022. Unique insights to the Cretaceous OAE1d, Mid–Cenomanian Event, and OAE2 from long–line drillcores along the eastern cratonic margin of the Western Interior Basin, p. 1–14 in Macquaker, J., Markwick, P., Whidden, K.J., Suter, J. (eds), *The Cenomanian-Turonian Stratigraphic Interval Across the Americas*. Proceeding of the 38th Annual GCSSEPM Foundation Perkins-Rosen Research Conference and Core Workshop, p.. Houston, TX. Gulf Coast Section SEPM (Society for Sedimentary Geology) [https://doi.org/10.5724/gcs.38.001].
- Scharenberg, M., Bacon, D., Blankenau, D., Blankenau, D., Duguid, A., Hawkins, J., Heinrichs, M., Hollenbach, J., Holubnyak, Y., Joeckel, R. M., Keister, L., Koperna, G., Lee, S.–Y., McDonald, S., Meuleman, E., Middleton, R., Riestenberg, D. E., Smith, V., Swanson, J., Walker, J., 2021. Development of an integrated carbon capture, utilization, and storage hub in the United States. Abu Dhabi: SSRN Electronic Journal, 8 pp [https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3820814].
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- Divine, D.P., Joeckel, R.M., Lackey, S.O., 2017. Aquifers of Nebraska II: The Niobrara aquifer, Conservation and Survey Division, University of Nebraska–Lincoln, Bulletin 7 (New Series), 29 p.
- Divine, D.P., Joeckel, R.M., Lackey, S.O., 2016. Aquifers of Nebraska I: The Codell aquifer in northeastern Nebraska, Conservation and Survey Division, University of Nebraska–Lincoln, Bulletin 7 (New Series), 21 p.
- Tucker, S.T., Otto, R.E., Joeckel, R.M., Voorhies, M.R., 2014. The geology and paleontology of Ashfall Fossil Beds, a late Miocene (Clarendonian) mass–death assemblage, Antelope County and adjacent Knox County, Nebraska, USA. *Geologic Field Trips along the Boundary between the Central Lowlands and Great Plains: 2014 Meeting of the GSA North–Central Section*. Geological Society of America Field Guides, v. 36, p. 1–22.
- Korus, J.T., Joeckel, R.M., Divine, D.P., 2013, Three–dimensional hydrostratigraphy of the Firth, Nebraska area: results from helicopter electromagnetic (HEM) mapping in the Eastern Nebraska Water Resources Assessment (ENWRA). Bulletin 3 (New Series) Conservation and Survey Division, School of Natural Resources, Institute of Agriculture and Natural Resources, University of Nebraska–Lincoln, 100 p.
- Divine, D.P., Joeckel, R.M., Korus, J.T., Hanson, P.R., Olafsen Lackey, S., 2009, Eastern Nebraska Water Resources Assessment (ENWRA): Introduction to a Hydrogeologic Study (R. M. Joeckel, ed.). Bulletin 1 (New Series) Conservation and Survey Division, School of Natural Resources, Institute of Agriculture and Natural Resources, University of Nebraska–Lincoln, 32 p.

Published water–level reports:

- Young, A.R., Burbach, M.E., Lackey, S. O., Joeckel, R.M., Westrop, J.P., 2025. Nebraska Statewide Groundwater–Level Monitoring Report 2024. Nebraska Water Survey Paper. 93. Conservation and Survey Division, University of Nebraska–Lincoln, 18 p.
- Young, A.R., Burbach, M.E., Lackey, S. O., Joeckel, R.M., Shrestha, N., Westrop, J.P., 2024. Nebraska Statewide Groundwater–Level Monitoring Report 2023. Nebraska Water Survey Paper. 92. Conservation and Survey Division, University of Nebraska–Lincoln, 24 p.
- Young, A.R., Burbach, M.E., Olafsen Lackey, S., Joeckel, R.M., Westrop, J.P., 2023. Nebraska Statewide Groundwater–Level Monitoring Report 2022. Nebraska Water Survey Paper. 91. Conservation and Survey Division, University of Nebraska–Lincoln, 18 p.
- Young, A.R., Burbach, M.E., Howard, L.M., Olafsen Lackey, S., Joeckel, R.M., 2022. Nebraska Statewide Groundwater–Level Monitoring Report 2021. Nebraska Water Survey Paper 90. Conservation and Survey Division, University of Nebraska–Lincoln, 24 p.
- Young, A.R., Burbach, M.E., Howard, L.M., Olafsen Lackey, S., Joeckel, R.M., 2021. Nebraska Statewide Groundwater–Level Monitoring Report 2020. Nebraska Water Survey Paper 88. Conservation and Survey Division, University of Nebraska–Lincoln, 25 p.
- Young, A.R., Burbach, M.E., Howard, L.M., Olafsen Lackey, S., Joeckel, R.M., 2020. Nebraska Statewide Groundwater–Level Monitoring Report 2020. Nebraska Water Survey Paper 87. Conservation and Survey Division, University of Nebraska–Lincoln, 25 p.
- Young, A.R., Howard, L.M., Waszgis, M.M., Lackey, S.O., Joeckel, R.M., 2019. Nebraska Statewide Groundwater–Level Monitoring Report 2018. Nebraska Water Survey Paper 86. Conservation and Survey Division, University of Nebraska–Lincoln, 24 p.
- Young, A.R., Howard, L.M., Waszgis, M.M., Lackey, S.O., Joeckel, R.M., 2018. Nebraska Statewide Groundwater–Level Monitoring Report 2018. Nebraska Water Survey Paper 85. Conservation and Survey Division, University of Nebraska–Lincoln.
- Young, A., Burbach, M., Waszgis, M., Joeckel, R.M., 2017. Nebraska Statewide Groundwater–Level Monitoring Report 2018. Nebraska Water Survey Paper 84. Conservation and Survey Division, University of Nebraska–Lincoln, 28 p.

Published book reviews and essays:

- Joeckel, R.M., 2018. Alberta's Lower Athabasca Basin: Archaeology and Paleoenvironments, Edited by Brian M. Ronaghan, etc. (1st ed.). Great Plains Research, v. 28, p. 98–99.
- Joeckel, R.M., 2014. Pawnee Buttes: synecdoche and microcosm. Great Plains Quarterly, v. 34, p. 211–215.
- Joeckel, R.M., 2004. Roadside Geology of Nebraska [book review]. *Palaios*, v. 19 (3), p. 308–309.

Data releases:

- Paronish, T., Pohl, M., Parker, A., Moore, J., Spaulding, J., Haljasmaa, I., Crandall, D., Smith, Rhiannon (Schmitt) Tempke, V., Duguid, A., Joeckel, R.M., 2024. Sleepy Hollow Reagan Unit 86A Well Data, 7/16/2024, U.S. Department of Energy Office of Scientific and Technical Information [<https://edx.netl.doe.gov/dataset/sleepy-hollow-reagan-unit-86a-well-data>, DOI: 10.18141/2403321].
- Verplanck, P.L., Lowers, H.A., Johnson, C.A., Koenig, A.E., Farmer, L., Kettler, R.M., Joeckel, R.M., 2022. Geochemical data for the Elk Creek alkaline complex, southeast Nebraska: U.S. Geological Survey data release [doi: 10.5066/P9S41SV0].

Recently published abstracts (2024–2025 only):

- Schueth, J., Joeckel, R.M., Ziebolz, U., L., Basso, M., 2025. Stratigraphy of the Cenomanian–Turonian of the eastern margin of the Western Interior Seaway: Insights from new cores and outcrops in Kansas, Nebraska, and Iowa, USA. Geological Society of America Abstracts with

- Programs 57 (GSA Connects Annual Meeting, Rocky Mountain Section, Geological Society of America. Provo, UT).
- Joeckel, R.M., Ludvigson, G., McLean, N.M., Möller, A., Suarez, M., 2025, Continuing investigation of a high-resolution date-constrained record of the Valanginian Carbon Isotope Excursion or “Weissert Event” in terrestrial sediments of the Yellow Cat Member in Utah, USA.” Geological Society of America Abstracts with Programs 57 (Annual Meeting, Rocky Mountain Section, Geological Society of America. Provo, UT).
- Ludvigson, G., Möller, A., Joeckel, R., Suarez, M.B., 2025. Recognition of the Upper Albian OAE 1C Chemozone (Amadeus Event) in terrestrial sediments of the North American Western Interior Basin. Geological Society of America Abstracts with Programs 57 (Annual Meeting, Rocky Mountain Section, Geological Society of America. Provo, UT).
- Burberry, C.M., Joeckel, R.M., Waszgis, M.M., 2024. Microscale deformation of SE Nebraska basement: Insights into the Precambrian evolution of the Midcontinent, USA. Geological Society of America Abstracts with Programs 56 (3), doi: 10.1130/abs/2024NC-398978 [https://gsa.confex.com/gsa/2024NC/meetingapp.cgi/Paper/398978].
- Korus, J.T., Joeckel, R.M., 2024. Mechanisms of sediment storage and recycling on the Great Plains: Implications for the Rocky Mountain–Gulf of Mexico S2S system (Late Miocene–Pliocene). SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ. International Sedimentary Geoscience Congress Abstract Book. SEPM Miscellaneous Publication 24, p. 11.
- Ludvigson, G., Palafox, E., Montañez, I., Möller, A., McLean, N., Suarez, M., Joeckel, M., 2024. The utility of cathodoluminescence imaging for LA–ICP–MS uranium–lead dating of calcite cements in pedogenic–palustrine carbonates. SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ. International Sedimentary Geoscience Congress Abstract Book. SEPM Miscellaneous Publication 24, p. 110.
- Möller, S., McLean, N., Suarez, M., Ludvigson, G., Joeckel, M., 2024. A new bracketing approach to determine depositional ages and paleoclimate markers by combined U–Pb geochronology from cryptotephra and diagenetic carbonate concretions. SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ. International Sedimentary Geoscience Congress Abstract Book. SEPM Miscellaneous Publication 24, p. 14.
- Joeckel, R.M., Ludvigson, G.A., McLean, N.M., Möller, A., 2024. Minimum duration of Valanginian “Weissert Event”—the first major perturbation of the Cretaceous global carbon cycle—constrained by new high–precision U–Pb dates from terrestrial sediments in Utah, USA. SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ. SEPM International Sedimentary Geosciences Congress, Flagstaff, AZ. International Sedimentary Geoscience Congress Abstract Book. SEPM Miscellaneous Publication 24, p. 39.
- Reed, O., Andrzejewski, K., Möller, A., Joeckel, R., Ludvigson, G., Layzell, A., Kalbas, J.L., 2024. Assessing deposition age of Dakota Fm. paleosols in SE Nebraska through detrital zircon U–Pb dating. Geological Society of America Abstracts with Programs 56 (3), doi: 10.1130/abs/2024NC-398969 [https://gsa.confex.com/gsa/2024NC/meetingapp.cgi/Paper/398969].

Geologic maps since 2018 only):*

- Joeckel, R.M., Reinier, C.L., Waszgis, M.M., 2023. Surficial Geology of the Meadville 7.5 Minute Quadrangle, Nebraska. Conservation and Survey Division, School of Natural Resources.
- Joeckel, R.M., Howard, L. M., 2022. Surficial Geology of the Springview Quadrangle, Nebraska. Conservation and Survey Division, School of Natural Resources.
- Joeckel, R.M., Sorsen, N.R., Howard, L.M., Waszgis, M.H., Tucker, S.T., 2018. Surficial Geology of the Cooper Canyon 7.5 Minute Quadrangle, Nebraska.

*available online [URL <http://snr.unl.edu/data/geologysoils/STATEMAP/index.aspx>].

Narratives in the U.S. Geological Survey Minerals Yearbooks:

- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2009), Volume II (Area Reports: Domestic); p. 29.1–29.5 [URL <http://minerals.usgs.gov/minerals/pubs/state/2009/myb2-2009-ne.pdf>]
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2007), Volume II (Area Reports: Domestic); p. 29.1–29.5 [URL <http://minerals.usgs.gov/minerals/pubs/state/2007/myb2-2007-ne.pdf>]
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2006), Volume II (Area Reports: Domestic), p. 29.1–29.5 [URL <http://minerals.usgs.gov/minerals/pubs/state/2006/myb2-2005-ne.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2005), Volume II (Area Reports: Domestic), p. 29.1–29.4 [URL <http://minerals.usgs.gov/minerals/pubs/state/2005/myb2-2005-ne.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2004), Volume II (Area Reports: Domestic), p. 29.1–29.2 [URL <http://minerals.usgs.gov/minerals/pubs/state/2004/nestmyb04.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2003), Volume II (Area Reports: Domestic), p. 29.2–29.6 [URL <http://minerals.usgs.gov/minerals/pubs/state/2003/nestmyb03.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2002), Volume II (Area Reports: Domestic), p. 29.1–29.8 [URL <http://minerals.usgs.gov/minerals/pubs/state/2002/nestmyb02.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2001), Volume II (Area Reports: Domestic), p. 29.1–29.5 [URL <http://minerals.usgs.gov/minerals/pubs/state/2001/nestmyb01.pdf>].
- The Mineral Industry of Nebraska: U. S. Geological Survey Minerals Yearbook (2000), Volume II (Area Reports: Domestic), p. 29.1–29.4 [URL <http://minerals.usgs.gov>]

Selected miscellaneous publications

Shrestha, N., Briggs, A., Young, A.R., Joeckel, R.M., 2023. Nebraska's Water. Conservation and Survey Division Water Survey Map 159. Conservation and Survey Division, School of Natural Resources, University of Nebraska–Lincoln.

7. Teaching

- 2022–2025: Provide yearly guest lecture on geologic aspects of human health for NRES/NUTR 330.
- 2007–2020: 30% joint appointment in Department of Earth and Atmospheric Sciences, UNL. GEOL 100, GEOL 101, GEOL 110, GEOL 450/850, GEOL 497/897 (co-taught). Provided guest lectures for NRES 108, NRES/NUTR 330, and others.
- 2005–2008: Taught NRES 477/877. Provided occasional guest lectures for NRES 108 in School of Natural Resources, UNL.

8. Outreach/Engagement (2024– 2025 only)

Geology Club at Calvert School/Calvert Recreation Center (Lincoln): part of 21st Century Community Learning Center Program.

Nebraska Science Olympiad

Nebraska Water Leaders Academy
Cooperation with Daughtery Water for Food Global Institute
East Campus Discovery Days.

9. Presentations (2024– 2025 only)

- Joeckel, R.M., 2025. Blame it on William Froude! Nebraska Water Leaders Academy, Valentine, NE, September 11, 2025.
- Joeckel, R.M., 2025, Continuing Investigation of a High-Resolution Date-Constrained Record of the Valanginian Carbon Isotope Excursion or “Weissert Event” in Terrestrial Sediment of the Yellow Cat Member in Utah, USA.” Annual Meeting, Rocky Mountain Section, Geological Society of America. Provo, UT., May 19, 2025.
- Joeckel, R.M., 2025. World (Ground) Water 2025 and an Introduction to Geology and Groundwater in Nebraska. Nebraska Water Leaders Academy, Lincoln, NE January 24, 2025
- Joeckel, R.M., 2024. World (Ground) Water 2024 and an Introduction to Geology and Groundwater in Nebraska. Nebraska Water Leaders Academy, Lincoln, NE January 19, 2024.
- Joeckel, R.M., 2024. Nebraska’s Groundwater Resources. Delegation from Sao Paulo, Brazil and Daughtery Water for Food Global Institute, Lincoln, NE, March 15, 2024.
- Joeckel, R.M., 2024. Conservation and Survey Division: Groundwater and Geoscience in Nebraska. Delegation from Mato Grosso, Brazil and Daughtery Water for Food Global Institute, Lincoln, NE, April 22, 2024.
- Joeckel, R.M., 2024. Bear With Me, Please: How to Ruin a Perfectly Good Float Trip With Science. Nebraska Water Leaders Academy, Valentine, NE, September 13, 2024.
- Joeckel, R.M., 2024. Conservation and Survey Division: Test-hole Drilling, Logging, and Groundwater Monitoring, Delegation from Parana, Brazil and Daughtery Water for Food Global Institute, Lincoln, NE, September 26, 2024.
- Joeckel, R.M., 2024. Geology of Lancaster County, Lincoln Parks and Recreation, Pioneers Park Nature Center, Lincoln, NE, December 17, 2024.

10. Museum Exhibits

- 2019–present: “Cherish Nebraska” at University of Nebraska State Museum (permanent); member of visioning team and also an active participant in editing text and providing physical materials for the display during the period 2015–2019
[<http://museum.unl.edu/fourthfloor/index.html>].
- 2015–2016: “Lost World of E. H. Barbour: Renaissance Man on the Plains” at Love Library, University of Nebraska–Lincoln: with Library staff, planned and wrote copy for a large archival exhibit of photographic prints taken by, or encompassing the experiences of, Erwin Barbour (1856–1947), an early geologist and paleontologist at the University of Nebraska.
- 2015–2016: Permanent petrology display, University of Nebraska State Museum: planned, redesigned, and curated a large display that also serves undergraduate education.
- 2011–2012: “Minerals and Meteorites” at University of Nebraska State Museum: planned, designed, populated, and curated a major multiyear temporary exhibit, then reconfigured it into a permanent mineralogy exhibit that serves the needs of undergraduate geology courses as well. Worked on press releases and campaigned for funding; coordinated cooperative activities with local gem and mineral societies.