Mary J. Kraus
Curriculum Vitae

Professor
Department of Geological Sciences
University of Colorado
Boulder, CO 80309
Mary.Kraus@colorado.edu

Vice Provost for Undergraduate Education
Academic Affairs

Education:

B.S.	Yale University, Biology, 1973
M.S.	University of Wyoming, Geology, 1979
Ph.D	University of Colorado, Geology, 1983

Professional Positions

1997-present	**Professor** Department of Geological Sciences, University of Colorado
1994-95	**Faculty Associate** Graduate School, University of Colorado
1989-97	**Associate Professor** Department of Geological Sciences, University of Colorado
1983-89	**Assistant Professor** Department of Geological Sciences, University of Colorado

University Administrative Positions

2016 -	**Vice Provost and Associate Vice Chancellor for Undergraduate Education**
2015 - 2016	**Senior Associate Dean** College of Arts & Sciences
2012-2015	**Associate Dean for Natural Sciences** College of Arts & Sciences
2003-2009	**Department Chair** Department of Geological Sciences, University of Colorado
1995-97 & 1991-93	**Associate Chair** Department of Geological Sciences, University of Colorado

Honors and Awards

2014 Honorary Membership Award, SEPM (Society for Sedimentary Geology)
Boulder Faculty Assembly Outstanding Service Award, 2009
College of Arts & Sciences Scholar Award, 2009

Elected Fellow of Geological Society of America, 1998
Outstanding Paper of the Year Award, *Journal of Sedimentary Petrology*, 1987

Research:

Refereed Publications:

Baczynski, A.A., McInerney, F.A., Wing, S.L., Kraus, M.J., Bloch, J.I., Secord, R., 2017, Constraining paleohydrologic change during the Paleocene-Eocene Thermal Maximum in the continental interior of North America: Palaeogeography, Palaeoecology, Palaeoclimatology, v. 465, p. 237-246, doi:10.1016/j.palaeo.2016.10.030

Baczynski, A.A., McInerney, F.A., Wing, S.L., Kraus, M.J., Morse, P.E., Bloch, J.I., Chung, A.H., and Freeman, K. H., 2016, Distortion of carbon isotope excursion in bulk soil organic matter during the Paleocene-Eocene thermal maximum: Geological Society of America Bulletin, v. 128, p. 1352-1366, doi:10.1130/B31389.1

Kraus, M.J., Woody, D.T., Smith, J.J., 2015, Alluvial response to the Paleocene-Eocene Thermal Maximum climatic event, Polecat Bench, Wyoming (USA): Palaeogeography, Palaeoecology, Palaeoclimatology, v. 435, p. 177-192. http://dx.doi.org/10.1016/j.palaeo.2015.06.021.

Bowen, G. J., Maibauer, B.J., Kraus, M. J., Röhl, U., Westerhold, T., Steimke, A., Gingerich, P.D., Wing, S.L., Clyde, W.C., 2015, Two massive, rapid releases of carbon during the onset of the Paleocene-Eocene thermal maximum: Nature Geoscience, v. 8, p. 44-47, doi:10.1038/ngeo2316.

Woody, D.T., Smith, J.J., Kraus, M.J., and Hasiotis, S.T., 2014, Manganese-bearing rhizocretions in the Willwood Formation, Wyoming, USA: implications for paleoclimate during the Paleocene-Eocene Thermal Maximum: Palaios, v. 29, p. 266-276, doi: 10.2110/palo.2013.105.

Baczynski, A.A., McInerney, F.A., Wing, S.L., Kraus, M.J., Bloch, J.I., Secord, R., Boyer, D.M., Morse, P.E., and Fricke, H.C., 2013, Chemostratigraphic implications of spatial variation in the Paleocene-Eocene carbon isotope excursion, SE Bighorn Basin, Wyoming: Geochemistry, Geophysics, Geosystems, v. 14, p. 4133-4152. DOI: 10.1002/ggge.20265

Abels, H.A., Kraus, M.J., and Gingerich, P.D., 2013, Precession-scale cyclicity in the lower Eocene fluvial Willwood Formation of the Bighorn Basin, Wyoming (USA): Sedimentology, v. 60, p 1467-1483, DOI: 10.1111/sed.12039

Kraus, M.J., McInerney, F.A., Wing, S.L., Secord, R., Baczynski, A.A., and Bloch, J.I., 2013, Paleohydrologic response to continental warming during the Paleocene-Eocene thermal maximum, Bighorn Basin, Wyoming: Palaeogeography, Palaeoecology, Palaeoclimatology, v. 370, p. 196-208.

Secord, R., Bloch, J.I., Chester, S.G.B., Boyer, D.M., Wood, A.R., Wing, S.L., Kraus, M.J., McInerney, F.A., and Krigbaum, J., 2012, Evolution of the earliest horses driven by climate change in the Paleocene-Eocene Thermal Maximum: Science, v. 335, p. 959-962.

Rose, K.D., Chew, A.E., Dunn, R.H., Kraus, M.J., Fricke, H.C., and Zack, S.P., 2012, Earliest Eocene mammalian fauna from the Paleocene-Eocene Thermal Maximum at Sand Creek Divide, southern Bighorn Basin, Wyoming: The University of Michigan Papers on Paleontology, no. 36, 122 pp.

Adams, J.S., Kraus, M.J., and Wing, S.L., 2011, Evaluating the use of weathering indices for determining mean annual precipitation in the ancient stratigraphic record: Palaeogeography, Palaeoecology, Palaeoclimatology, v. 309, p. 358-366.

Smith, J.J., Hasiotis, S.T., Kraus, M.J., and Woody, D.T., 2009, Transient dwarfism of soil fauna during the Paleocene-Eocene Thermal Maximum: Proceedings of the National Academy of Sciences, v. 106, p. 17655-17660.

Smith, J.J., Hasiotis, S.T., and Kraus, M.J., 2008, Morphology and paleoenvironmetnal implications of adhesive meniscate burrows (AMB), Paleogene Willwood Formation, Bighorn Basin, Wyoming: Journal of Paleontology, v. 82, p. 267-278.

Smith, J.J., Hasiotis, S.T., Woody, D.T., and Kraus, M.J., 2008, Paleoclimatic implications of crayfish-mediated prismatic structures in paleosols of the Paleogene Willwood Formtion, Bighorn Basin, Wyoming: Journal of Sedimentary Research, v. 78, p. 323-334.

Wood, A.R., Kraus, M.J., and Gingerich, P.D., 2008, Down-slope fossil contamination: mammal-bearing fluvial conglomerates and the Paleocene-Eocene faunal transition (Willwood Formation, Bighorn Basin, Wyoming): PALAOIS, v. 23, p. 380-390.

Smith, J.J., Hasiotis, S.T., Kraus, M.J., and Woody, D.T., 2008, Relationship of floodplain ichnocoenoses to paleopedology, paleohydrology, and paleoclimate in the Willwood Formation, Polecat Bench, Bighorn Basin, Wyoming during the Paleocene-Eocene Thermal Maximum (PETM): PALAOIS, v. 23, p. 695-711.

Abdul Aziz, H., Hilgen, F.J.,van Luijk, G.M., Sluijs, A., Kraus, M.J., Pares, J.P., and Gingerich, P.D., 2008, Milankovitch and sub-Milankovitch cycles in paleosol – fluvial floodplain successions of the lower Eocene Willwood Formation (Bighorn Basin, Wyoming): Geology, v. 34, p. 531-534.

Kraus, M.J., and Riggins, S., 2007, Transient drying during the Paleocene-Eocene Thermal Maximum (PETM): Analysis of paleosols in the Bighorn Basin, Wyoming, USA: Palaeogeography, Palaeoecology, Palaeoclimatology, v. 245, p. 444-461.

Kraus, M.J., and Hasiotis, S.T., 2006, Significance of different modes of rhizolith preservation to interpreting paleoenvironmental and paleohydrologic settings: examples from Paleogene paleosols, Bighorn Basin, Wyoming, USA: Journal of Sedimentary Research, v. 76, p. 633-646.

Hasiotis, S.T., Kraus, M.J., and Demko, T. M., 2006, Climatic controls on continental trace fossils. In: Miller, W. (Ed.), Trace Fossils: Concepts, Problems, Prospects. Elsevier, Amsterdam, p. 166-189.

Kraus, M.J., and Davies-Vollum, K.S., 2004, Mudrock-dominated fills formed in avulsion splay channels: examples from the Willwood Formation, Wyoming: Sedimentology, 51: 1127-1144.

Kraus, M.J., 2002, Basin-scale changes in floodplain paleosols: implications for interpreting alluvial architecture: Journal of Sedimentary Research, 72: 500-509.

Farnham, T.M., and Kraus, M.J., 2002, The stratigraphic and climatic significance of Paleogene alluvial paleosols in synorogenic strata of the Denver Basin: Rocky Mountain Geology, 37: 201-213.

Davies-Vollum, K.S., and Kraus, M. J., 2001. A relationship between alluvial backswamps and avulsion cycles: an example from the Willwood Formation of the Bighorn Basin, Wyoming. Sedimentary Geology 140: 235-249.

Kraus, M.J., and Aslan, A., 1999, Paleosol sequences in floodplain environments: a hierarchical approach, In: Thiry, M., ed., Palaeoweathering, Palaeosurfaces and Related Continental Deposits, International Association of Sedimentologists, Special Publication. 27, p. 303-321.

Kraus, M.J., and Wells, T.M., 1999, Facies and facies architecture of Paleocene floodplain deposits, Fort Union Formation, Bighorn Basin, Wyoming: Mountain Geologist, v. 36, p. 57-70.

Kraus, M.J., and Wells, T.M., 1999, Recognizing avulsion deposits in the ancient stratigraphical record. In Smith, N.D., and Rogers, J. (Eds.), Fluvial Sedimentology VI, International Association of Sedimentologists, Special Publication 28, p. 251-268.

Kraus, M.J., 1999, Paleosols in clastic sedimentary rocks: their geologic applications: Earth Science Reviews, 47: 41-70.

Kraus, M.J., 1998, Development of potential acid sulfate paleosols in Paleocene floodplains, Bighorn Basin, Wyoming, USA: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 144, p. 203-224.

Kraus, M. J., 1997, Early Eocene alluvial paleosols: pedogenic development, stratigraphic relationships, and paleosol/landscape associations: Palaeogeography, Palaeoeclimatology, Palaeoecology, v. 129, p. 387-406.

Kraus, M.J., 1996, Avulsion deposits in lower Eocene alluvial rocks, Bighorn Basin, Wyoming: Journal of Sedimentary Research, v. 66B, p. 354-363.

Holroyd, P.A., Simons, E.L., Bown, T.M., Polly, P.D., and Kraus, M.J., 1996, New records of terrestrial mammals from the Upper Eocene Qasr El Sagha Formation, Fayum Depression, Egypt: Palaeovertebrata, v. 25, p. 175-192.

Bown, T.M., and Kraus, M.J., 1993, Time-stratigraphic reconstruction and integration of paleopedologic, sedimentologic, and biotic events (Willwood Formation, lower Eocene, northwest Wyoming, USA): Palaios, v. 8, p. 68-80.

Kraus, M.J., and Aslan, A., 1993, Eocene hydromorphic paleosols: Significance for interpreting ancient floodplain processes: Journal of Sedimentary Petrology, v. 63, p. 453-463.

Kraus, M.J., and Bown, T.M., 1993, Short-term sediment accumulation rates determined from Eocene alluvial paleosols: Geology, v. 21, p. 743-746.

Bown, T.M., and Kraus, M.J., 1993, Soils, time, and primate paleoenvironments: Evolutionary Anthropology, v. 2, p. 11-21.

Kraus, M.J., and Bown, T.M., 1993, Paleosols as a tool for sandbody exploration: Geological Society, London, Special Publication 73, p. 23-32.

Kraus, M.J., 1992, Alluvial response to differential subsidence: sedimentologic analysis aided by remote sensing, Willwood Formation (Eocene), Bighorn Basin, Wyoming, USA: Sedimentology, v. 39, p. 455-470.

Kraus, M.J., 1992, Mesozoic and Cenozoic paleosols, In: Martini, I.P. and Chesworth, W., eds., Weathering, Soils, and Paleosols, Elsevier, Amsterdam, p. 525-542.

Kraus, M.J., 1988, Nodular remains of Early Tertiary forests, Bighorn Basin, Wyoming; Journal of Sedimentary Petrology, v. 58, p. 888-893.

Kraus, M.J., and Bown, T.M., 1988, Pedofacies analysis: a new approach to reconstructing ancient fluvial sequences: Geological Society of America Special Paper 216, p. 143-152.

Bown, T.M., and Kraus, M.J., 1988, Geologic and paleoenvironmental conspectus of the Oligocene Jebel Qatrani Formation and adjacent rocks, Fayum Depression, Egypt: U.S. Geological Survey Professional Paper #1452, 60 pp.

Bown, T.M., and Kraus, M. J., 1987, Integration of channel and floodplain suites, I. Developmental sequence and lateral relations of alluvial paleosols: Journal of Sedimentary Petrology, v. 57, p. 587-601.

Kraus, M.J., 1987, Integration of channel and floodplain suites, II. Vertical relations of alluvial paleosols: Journal of Sedimentary Petrology, v. 57, p. 602-612.

Kraus, M.J., and Middleton, L.T., 1987, Contrasting alluvial architecture of two Cenozoic sequences in different structural settings: SEPM Special Publication 39, p. 253-262.

Kraus, M.J., and Middleton, L.T., 1987, Dissected paleotopography and base-level changes in a Triassic fluvial sequence: Geology, v. 15, p. 18-21.

Kraus, M.J., and Bown, T.M., 1986, Paleosols and time resolution in alluvial stratigraphy, In: Wright, V.P., ed., Paleosols: Their Recognition and Significance, Oxford: Blackwell Scientific Pub., p. 180-207.

Kraus, M.J., 1984, Sedimentology and tectonic setting of early Tertiary exotic quartzite conglomerates, northwest Wyoming, U.S.A., In: Koster, E.H., and Steel, R.J., eds., Sedimentology of gravels and conglomerates, Canadian Society of Petroleum Geologists Memoir 10, p. 203-216.

Bown, T.M., and Kraus, M.J., 1983, Ichnofossils of the alluvial Willwood Formation (lower Eocene), Bighorn Basin, northwest Wyoming, U.S.A.: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 43, p. 95-128.

Bown, T.M., Kraus, M.J., Wing. S.L., Fleagle, J.G., Tiffney, B.H., Simons, S.L., and Vondra, C.F., 1982, The Fayum primate forest revisited: Journal of Human Evolution, v. 11, p. 603-632.

Bown, T.M., and Kraus, M.J., 1981, Lower Eocene alluvial paleosols (Willwood Formation, northwest Wyoming, U.S.A.): implications for paleoclimatology, paleoecology, and basin analysis: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 34, p. 1-30.

Bown, T.M., and Kraus, M.J., 1981, Fossil-bearing lower Eocene alluvial paleosols (Willwood Formation, northwest Wyoming, U.S.A.), and their significance for vertebrate taphonomy, paleoecology, and assemblage analysis: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 34, p. 31-56.

Middleton, L.T., and Kraus, M.J., 1980, Simple technique for thin section preparation of unconsolidated materials: Journal of Sedimentary Petrology, v. 50, p. 622-623.

Other Publications

Wing, S.L., Bloch, J.I., Bowen, G.J., Boyer, D.M., Chester, S., Diefendorf, A.F., Harrington, G.J., Kraus, M.J., Secord, R. and McInerney, F.A., 2009, Coordinated sedimentary and biotic change during the Paleocene-Eocene Thermal Maximum in the Bighorn Basin, Wyoming, USA, In: Crouch, E.M., Strong, C.P., Hollis, C.J., (eds) Climatic and Biotic Events of the Paleogene (CBEP 2009), extended abstracts from an international conference in Wellington, New Zealand, 12-15 January 2009. GNS Science Miscellaneous Series 18, p. 157-163.

Malagon, C., Weimer, P., Kraus, M.J., and Pulham, A.J., 1997, Facies analysis of the Lower Oligocene T1 sandstone (Carbonera Formation), Apiay Field, Llanos Basin, Colombia, In:

Shanley, K.W., and Perkins, B.F., eds., Shallow marine and nonmarine reservoirs: sequence stratigraphy, reservoir architecture, and production characteristics, 18th Annual Gulf Coast Section of SEPM Research Conference, p. 183-195.

Suarez, M., Weimer, P., Kraus, M.J., and Pulham, A.J., 1997, Facies analysis of the upper Eocene La Paz Formation, Provincia Field, Northern Middle Magdalene Valley Basin, Colombia, In: Shanley, K.W., and Perkins, B.F., eds., Shallow marine and nonmarine reservoirs: sequence stratigraphy, reservoir architecture, and production characteristics, 18th Annual Gulf Coast Section of SEPM Research Conference, p. 319-330.

Kraus, M.J., 1991, Variability in alluvial rocks determined from TM analysis, and its tectonic significance, In: Proceedings, Eighth Thematic Conference on Remote Sensing for Exploration Geology, v. 8, p. 1243-1256.

Kraus, M.J., 1985, Early Tertiary quartzite conglomerates of the Bighorn Basin and their significance for paleogeographic reconstruction of northwest Wyoming, In: Flores, R.M., and Kaplan, S.S., eds., Cenozoic paleogeography of the west-central United States: Rocky Mountain Section of Society of Economic Paleontologists and Mineralogists, p. 71-91.

Kraus, M.J., 1985, Sedimentology of early Tertiary rocks, northern Bighorn Basin, In: Flores, R.M., and Harvey, M., eds., Field guide to modern and ancient fluvial systems in the United States: Third International Fluvial Sedimentology Conference, Guidebook, p. 26-33.

Middleton, L.T., Blakey, R.C., Kraus, M.J., and Bown, T.M., 1985, Triassic-Jurassic fluvial systems, northeastern Arizona: Society of Economic Paleontologists and Mineralogists Midyear Meeting, Field Trip No. 8, Guidebook, 70 p.

Kraus, M.J., 1982, Genesis of early Tertiary exotic metaquartzite conglomerates in the Absaroka- Bighorn region, northwest Wyoming: Wyoming Geological Association, 33rd Annual Field Conference, Guidebook, p. 103-110.

Kraus, M.J., 1980, Genesis of a fluvial sheet sandstone, Willwood Formation, northwest Wyoming: University of Michigan Papers on Paleontology, no. 24, p. 87-94.

University of Colorado Campus Level Service

Search committees

Dean of Continuing Education and AVC for Outreach and Engagement, 2014
OCG Director Search Committee, 2013
Director of CU Museum, 2006

Student Focused Committees

Member, Provost's Student Persistence working group, 2015
Chair, Gateway courses subcommittee of Student Persistence working group 2015
Member, FTEP Advisory Board 2012-present

Space Committees

Member, Space Prioritization Steering Committee, 2014 - present
Chair, Space Prioritization subgroup on Student Success, Fall 2015
Carlson Gym Design Committee, 2014 - present

Other

Member, Campus Compliance and Ethics Steering Committee, 2014 - present
Member, Faculty Administrators Advisory Board to OCG/SPA 2014 - present
Office of Industry Relations, External Sales working group, 2014 - present
Co-chair, Course Buyout committee, 2012-13
Member, OCG Advisory Group 2011-13
Member, Academic Affairs Budget Advisory Committee 2007-08
Member, DA-ICR working group 2007-08
Member Graduate School Executive Advisory Council 2006-07
Provost's Advisory Committee, 2006-07

Service to Scientific Societies

Society of Sedimentary Geology

2015 -	Member, Moore Medal Committee
2009-10	Chair, Nominations Committee
2008-09	Chair, Twenhofel Medal Committee
2007-08	President
2006-07	President-Elect
2000-03	Co-Editor, *Journal of Sedimentary Research*
1993-99	Associate Editor, *Journal of Sedimentary Research* (1993-1999)
1991-96	Rocky Mountain Section of SEPM – Research Awards Committee

Geological Society of America

2015 -	Member of Governing Board (4 year term)
1998-2000	Member, Penrose Medal Committee
1999	General Co-chair, Geological Society of America Annual Meeting
1991-94	*Geology*, Editorial Board
1993	Committee on Committees