

# KAREN CHIN

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## EDUCATION

University of California at Santa Barbara: Ph.D. in Geological Sciences, 1996; Bruce H. Tiffney, Advisor  
Dissertation: *The paleobiological implications of herbivorous dinosaur coprolites: ichnologic, petrographic, and organic geochemical investigations*

## PROFESSIONAL EXPERIENCE

University of Colorado Boulder: *Associate Professor & Curator of Paleontology*, August 2009 to present  
University of Colorado Boulder: *Assistant Professor & Curator of Paleontology*, August 2001--August 2009  
Denver Museum of Nature and Science: *Research Associate*, March 2003 to present  
Stanford University: *National Science Foundation Postdoctoral Fellow*, March 2000--June 2001  
United States Geological Survey: *Visiting Scientist*, 1996-2000 (*Ford Postdoctoral Fellow*, Nov. 98-July 99)  
San Francisco State University: *Instructor*, spring semester, 1998  
Museum of the Rockies, Bozeman Montana: *Currently Adjunct Curator of Paleobotany; Research Assistant and Paleontology Field School Instructor & Co-manager*, 1988-90  
Stanford University: *Visiting Scholar*, academic years 1994-95, 1995-96  
U.S. National Park Service: *Seasonal Park Interpreter*, 1974-88

### Fellowships and Sabbaticals

Sabbatical, Fall 2017  
Sabbatical, University of Utah, Fall 2010  
National Science Foundation Earth Sciences Postdoctoral Fellowship, 2000-2001  
Ford Foundation Postdoctoral Fellowship, academic year 1998-1999

## PUBLICATIONS

### Peer-Reviewed Journal Publications (\*indicates first authors were student advisees)

Chin, K., Feldmann, R.M., and Tashman, J.N. 2017. Consumption of crustaceans by megaherbivorous dinosaurs: dietary flexibility and dinosaur life history strategies. *Scientific Reports* 7, article number:1116; doi:10.1038/s41598-017-11538-w

\*Wilson, L.E., Chin, K., and Cumbaa, S.L. 2016. A new hesperornithiform (Aves) specimen from the Late Cretaceous Canadian High Arctic with comments on high latitude hesperornithiform diet. *Canadian Journal of Earth Sciences*. 53(12): 1476-1483. 10.1139/cjes-2016-0053

\*Tweet, J., Chin, K., and Ekdale, A.A. 2016. Trace fossils of possible parasites inside the gut of a hadrosaurid dinosaur, Upper Cretaceous Judith River Formation, Montana. *Journal of Paleontology* 90: 279-287.

Khosla, A., Chin, K., Alimohammadin, H., and Dutta, D. 2015. Ostracods, plant tissues, and other inclusions in coprolites from the Late Cretaceous Lameta Formation at Pisdura, India: Taphonomical and palaeoecological implications. *Palaeogeography, Palaeoclimatology, Palaeoecology* 418: 90-100.

\*Wilson, L.E. and Chin, K. 2014. Comparative osteohistology of *Hesperornis* with reference to pygoscelid penguins: the effects of climate and behavior on avian bone microstructure. *Royal Society Open Science* 1: 140245. <http://dx.doi.org/10.1098/rsos.140245>

Chin, K., Pearson, D., Ekdale, A.A. 2013. Fossil worm burrows reveal very early terrestrial animal activity and shed light on trophic resources after the end-Cretaceous mass extinction. *PLoS ONE* 8(8): e70920. doi: 10.1371/journal.pone.0070920.

Eriksson, M.E., Lindgren, J., Chin, K. & Månsby, U. 2011. Coprolite morphotypes from the Upper Cretaceous of Sweden: novel views on an ancient ecosystem and implications for coprolite taphonomy *Lethaia* 44: 455-468.

Witkowski, J., Harwood, D.M., and Chin, K. 2011. Taxonomic composition, paleoecology and biostratigraphy of Late Cretaceous diatoms from Devon Island, Nunavut, Canadian High Arctic. *Cretaceous Research* 32: 277-300.

\*Wilson, L.E., Chin, K., Cumbaa, S., and Dyke, G. 2011. A high latitude hesperornithiform (Aves) from Devon Island: palaeobiogeography and size distribution of North American hesperornithiforms. *Journal of Systematic Palaeontology* 9: 9-23.

\*Daniel, J.C. and Chin, K. 2010. The role of bacterially mediated precipitation in the permineralization of bone. *Palaios* 25: 507-516.

Farlow, J.O., Chin, K., Argast, A., and Poppy, S. 2010. Coprolites from the Pipe Creek Sinkhole (Late Neogene, Grant County, Indiana, USA). *Journal of Vertebrate Paleontology* 30: 959-969.

Chin, K., Hartman, J.H., and Roth, B. 2009. Opportunistic exploitation of dinosaur dung: fossil snails in coprolites from the Upper Cretaceous Two Medicine Formation of Montana. *Lethaia* 42: 185-198.

Lockley, M., Chin, K., Houck, K., Matsukawa, M., and Kukihara, R. 2009. New interpretations of *Ignotornis* the first-reported, Mesozoic, avian footprints: implications for the ecology and behavior of an enigmatic Cretaceous bird. *Cretaceous Research* 30: 1041-1061.

Sweeney, I., Chin, K., Hower, J., Budd, D., and Wolfe, D. 2009. Fossil wood from the middle Cretaceous Moreno Hill Formation: unique expressions of wood mineralization and implications for the processes of wood preservation. *International Journal of Coal Geology* 79: 1-17.

Chin, K., Bloch, J.D., Sweet, A.R., \*Tweet, J.S., Eberle, J.J., Cumbaa, S.L., Witkowski, J., and Harwood, D.M. 2008. Life in a temperate polar sea: a unique taphonomic window on the structure of a Late Cretaceous Arctic marine ecosystem. *Proceedings of the Royal Society B* 275: 2675-2685.

\*Tweet, J.S., Chin, K., Braman, D.R., and Murphy, N.L. 2008. Probable gut contents within a specimen of *Brachylophosaurus canadensis* (Dinosauria: Hadrosauridae) from the Upper Cretaceous Judith River Formation of Montana. *Palaios* 23: 625-636.

Chin, K. 2007. The paleobiological implications of herbivorous dinosaur coprolites from the Upper Cretaceous Two Medicine Formation of Montana: why eat wood? *Palaios* 22: 554-566.

Chin, K., and Bishop, J. 2007. Exploited twice: bored bone in a theropod coprolite from the Jurassic Morrison Formation of Utah, USA. In: Bromley, R.G., Buatois, L.A., Mángano, M.G., Genise, J.F., and Melchor, R.N. [eds.], *Sediment-Organism Interactions: A Multifaceted Ichnology*. SEPM Special Publications, v. 88, pp. 377-385.

\*Yelinek, K. and Chin, K. 2007. Probable dung beetle burrows associated with *Daemonelix*, beaver burrows in the Miocene Harrison Formation, Nebraska, U.S.A. In: Bromley, R.G., Buatois, L.A., Mángano, M.G., Genise, J.F., and Melchor, R.N. [eds.], *Sediment-Organism Interactions: A Multifaceted Ichnology*. SEPM Special Publications, v. 88, pp. 343-350.

Rigby, J.K., Chin, K., Bloch, J.D., and \*Tweet, J.S. 2007. A new hexactinellid sponge from the Cretaceous of Devon Island, Canadian High Arctic. *Canadian Journal of Earth Sciences* 44: 1235-1242.

Chin, K., Eberth, D.A., Schweitzer, M.H., Rando, T.A., Sloboda, W.J. and Horner, J.R. 2003. Remarkable preservation of undigested muscle tissue within a Late Cretaceous tyrannosaurid coprolite from Alberta, Canada. *Palaios* 18: 286-294.

Chin, K. 2002. Analyses of coprolites produced by carnivorous vertebrates. In: Kowalewski, M. and Kelley, P.H. [eds.], *Predation in the Fossil Record*. Paleontological Society Special Paper v. 8. pp. 43-49.

Hollocher, T.C., Chin, K., Hollocher, K.T, and Kruge, M.A. 2001. Bacterial residues in coprolite of herbivorous dinosaurs: role of bacteria in mineralization of feces. *Palaios* 16: 547-565.

Chin, K., Tokaryk, T.T., Erickson, G.M. and Calk, L.C. 1998. A king-sized theropod coprolite. *Nature* 393: 680-682.

Chin, K. and Kirkland, J.I. 1998. Probable herbivore coprolites from the Upper Jurassic Mygatt-Moore Quarry, Western Colorado. *Modern Geology* 23: 249-275.

Chin, K. and Gill, B.D. 1996. Dinosaurs, dung beetles, and conifers: participants in a Cretaceous food web. *Palaios* 11: 280-285.

### Contributed Chapters

Khosla, A., Chin, K., Verma, O., Alimohammadin, H., Dutta, D. 2016. Paleobiogeographical and paleoenvironmental implications of the freshwater Late Cretaceous ostracods, charophytes and distinctive residues from coprolites of the Lameta Formation at Pisdura, Chandrapur District (Maharashtra), Central India. *Cretaceous Period: Biotic Diversity and Biogeography*. New Mexico Museum of Natural History and Science Bulletin. vol. 71, pp. 173-184.

Chin, K. 2012. What did dinosaurs eat: Coprolites and other direct evidence of dinosaur diets. In Brett-Surman, M.K., Holtz, T.R., Jr., and Farlow, J.O. [eds.], *The Complete Dinosaur*, Second Edition. Indiana University Press. Bloomington. pp. 588-601.

Chin, K. 1997. Coprolites. In Currie, P.J. and Padian, K. [eds.], *Encyclopedia of Dinosaurs*. Academic Press. San Diego. pp. 147-150.

Chin, K. 1997. What did dinosaurs eat? Coprolites and other direct evidence of dinosaur diets. *In* Farlow, J.O. and Brett-Surman, M.K. [eds.], *The Complete Dinosaur*. Indiana University Press. Bloomington. pp. 371-382.

Chin, K. 1994. On the elusive trail of fossil dung. *In* Rosenberg, G.F. and Wolberg, D.L. [eds.], *Dino Fest: Proceedings of a Conference for the General Public*, March 24-26, 1994. Paleontological Society Special Publication # 7. University of Tennessee Press. Knoxville. pp. 285-294.

Hunt, A.P., Chin, K. and Lockley, M.G. 1994. The palaeobiology of vertebrate coprolites. *In* Donovan, S.K. [ed.], *The Palaeobiology of Trace Fossils*. John Wiley & Sons. Chichester. pp. 221-240.

### **Invited Book Review**

Chin, K. 2008. Pest friends in the Cretaceous [Review of *What Bugged the Dinosaurs* by G. Poinar Jr. and R. Poinar]. *Nature* 451: 1053.

### **Children's Book**

Chin, K. and Holmes, T. 2005. *Dino Dung (Step into Reading)*. Random House, New York. 48 pp.

### **Educational Websites**

\*Vitkus, A., Chin, K., and Lockley, M. 2014. Fossil footprints through geologic time.  
<http://ucmp.berkeley.edu/science/trackways/index.php>

\*Wilson, L.E., Chin, K., Jackson, F.D., and Bray, E.S. 2010. Fossil eggshell: Fragments from the past.  
<http://www.ucmp.berkeley.edu/science/eggshell/index.php>

### **Other Articles**

Chin, K. 1995. Lessons from leavings. *Natural History*. 104 (6): 67.