

THE MISSOURI INSTITUTE OF NATURAL SCIENCE

WHO ARE WE AND WHAT DO WE DO?



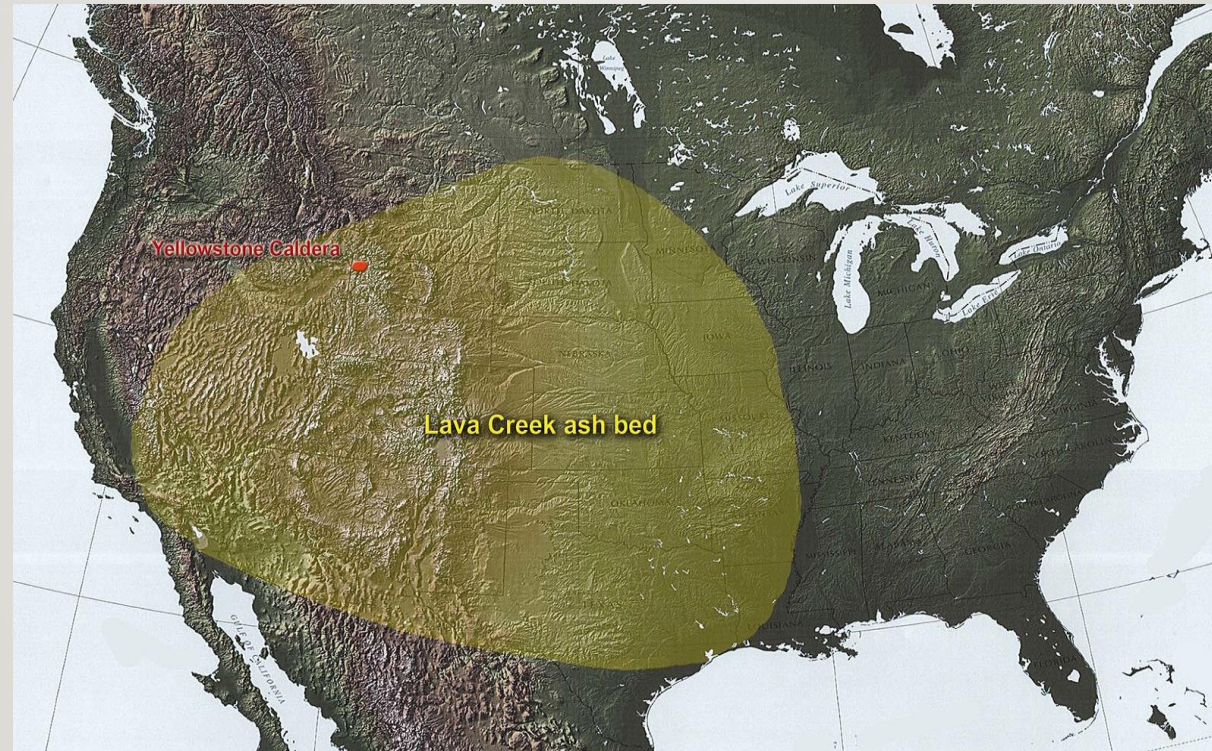
SHORT ANSWER: A LITTLE BIT OF EVERYTHING



RIVERBLUFF CAVE



THE CONNECTION OF RIVERBLUFF CAVE TO YELLOWSTONE



WHICH LED TO US BEING EXPERTS IN SUPER VOLCANOES, MASS EXTINCTION AND DIAMONDS



DINOSAUR RESEARCH AND EXCAVATIONS



THE WORLDS LARGEST TRICERATOPS



HOME OF THE HOMEMADE DINOSAURS



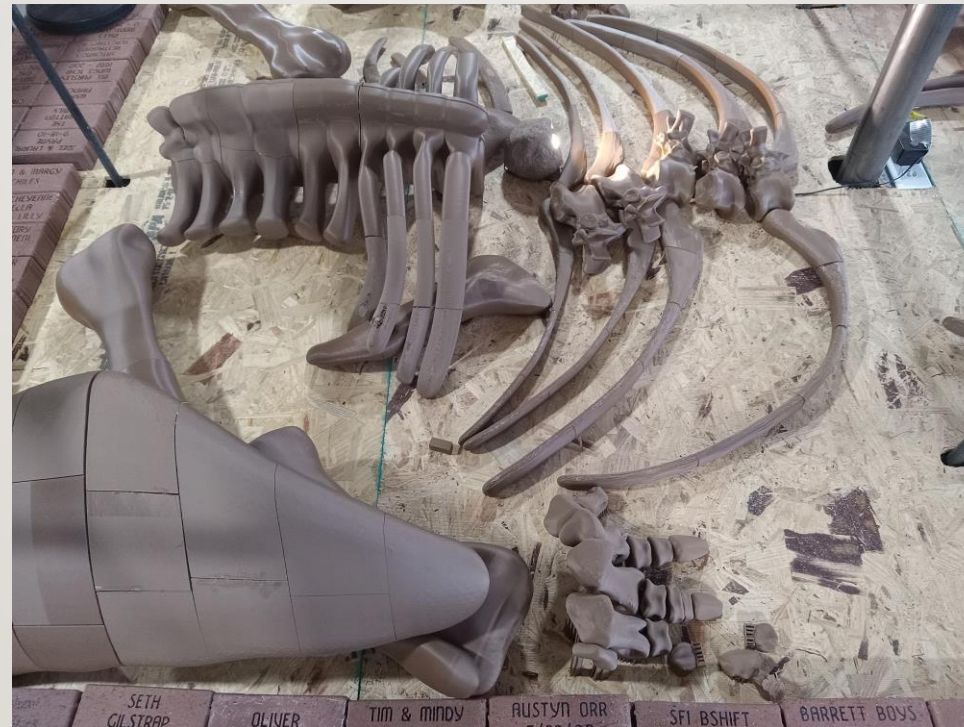
THE MOST COMPLETE DENVERSAURUS



3D PRINT TECHNOLOGY



THE MISSING PIECES



RECENT RESULTS FROM OUR RESEARCH

Taxonomy and Paleobiogeographic Implications of a Nodosaurid Sacral Shield from the late Maastrichtian Ferris Formation, Wyoming



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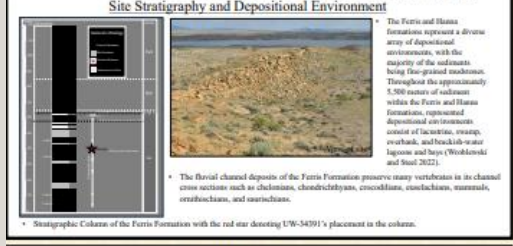
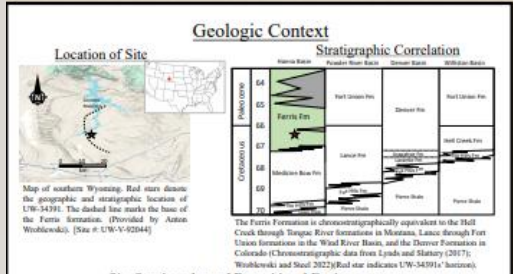


Introduction:

- UW-34391 is a large section of nodosaurid sacral shield (34.3cm by 29.9cm) composed of fused osteoderms. It was discovered at the University of Wyoming site V-92044: Hidden Channel in 1992 by coauthors Anton Wroblewski and JP Cavigelli in South-Central Wyoming in the late Cretaceous Ferris Formation.
- UW-34391 is significant because it originates from a unique paleogeographic locality and geologic formation. The study of UW-34391 has the potential to further our understanding of nodosaurian diversity within the Ferris Fm and Later Cretaceous Laramedia.

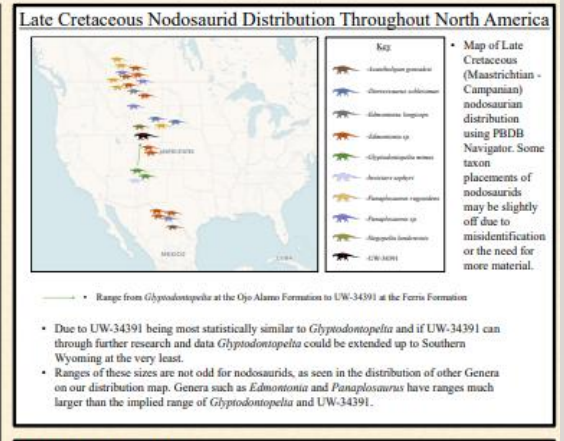
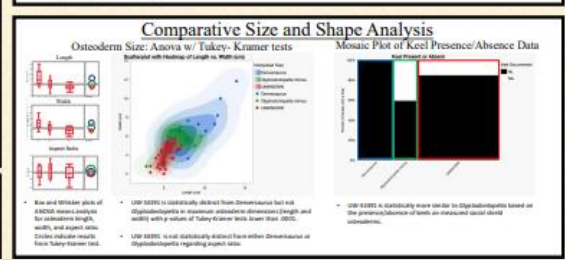
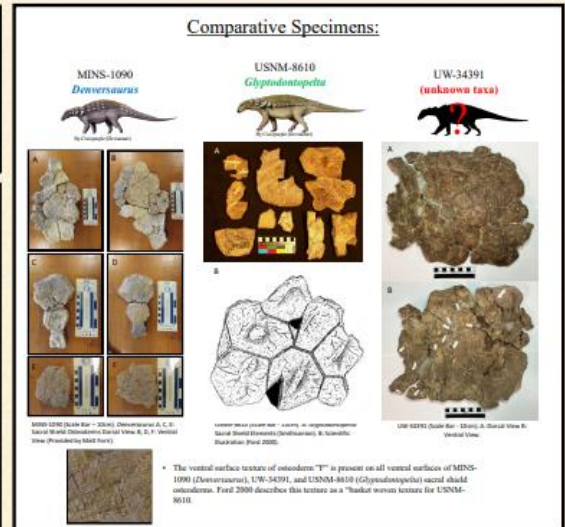
Project Goals:

- As part of an undergraduate research project, we aim to identify which nodosaurid UW-34391 most likely belongs to by comparing the sacral shield with sacral shield elements of known nodosaurids.
- If successfully identified, UW-34391 may expand the geographic or chronologic ranges on the on which taxon it can be determined as.



Methods & Process:

- Measure osteoderm features such as osteoderm size, shape, height, and presence of keel of UW-34391 and two known nodosaurids: *Glyptodontopelta* and *Demersaurus*
- Compile data into scatter and whisker plots to visualize any possible variation among sacral shield elements.



Conclusion/Discussion:

- Among sacral shield elements from our other tested nodosaurian dinosaurs, UW-34391 is not distinctly variable enough to classify it on a species level. However, length and width comparisons noted some similarities with *Glyptodontopelta*.
- We interpret UW-34391 to be statistically different from *Demersaurus* in length, width, and presence of keel, while UW-34391 is most similar to *Glyptodontopelta*. To remedy this, more material and a larger data set can show an even stronger or weaker correlation with *Glyptodontopelta* and UW-34391 being synonymous, closely related, or no correlation at all.
- Our findings suggest a possible paleogeographic range expansion of *Glyptodontopelta* into northern latitudes. Future research should focus on comprehensive analyses of additional fossil specimens, including detailed morphometric assessments of osteoderms and other skeletal elements. By integrating these data across various regional samples, we can refine our understanding of these species' biogeography and evolutionary adaptations.

References/Acknowledgments:

Wroblewski, A.J., and Steel, R. J. (2022) Palaeozoic (65-63 and 59-57 MA) Marine Flooding and 62-60 MA sediment bypass in Southern Wyoming, U.S.A.: Implications for Laramedia Sediment Flux to the Gulf of Mexico.

Ford, J. L. (2008) A Review of Ankylosaur Osteoderms From New Mexico and a Preliminary Review of Ankylosaur Anterior Limbs. S.G. and Hadlock, A.R., eds. 2008. *Discover of New Mexico: New Mexico Museum of Natural History and Science Bulletin No. 172*.

https://dx.doi.org/10.21203/rs.3.rs-1646021/v1/doi/fulltext/10.21203/rs.3.rs-1646021/v1

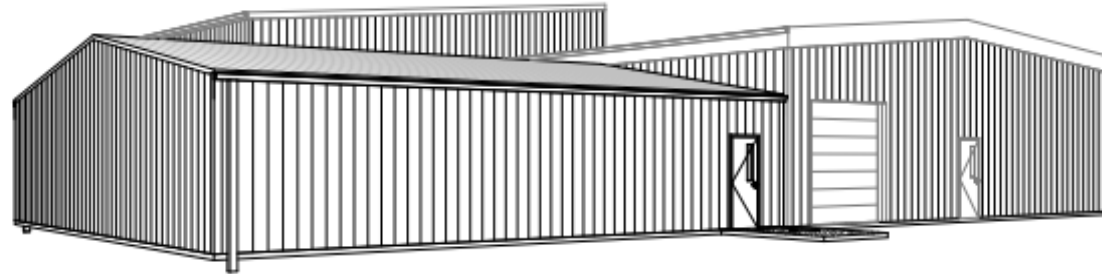
Crabtree, M., and Hartwig, J. R. (2017) *Classification of The Upper Cretaceous*. State of Wyoming PBDB Navigator, Pueblo.

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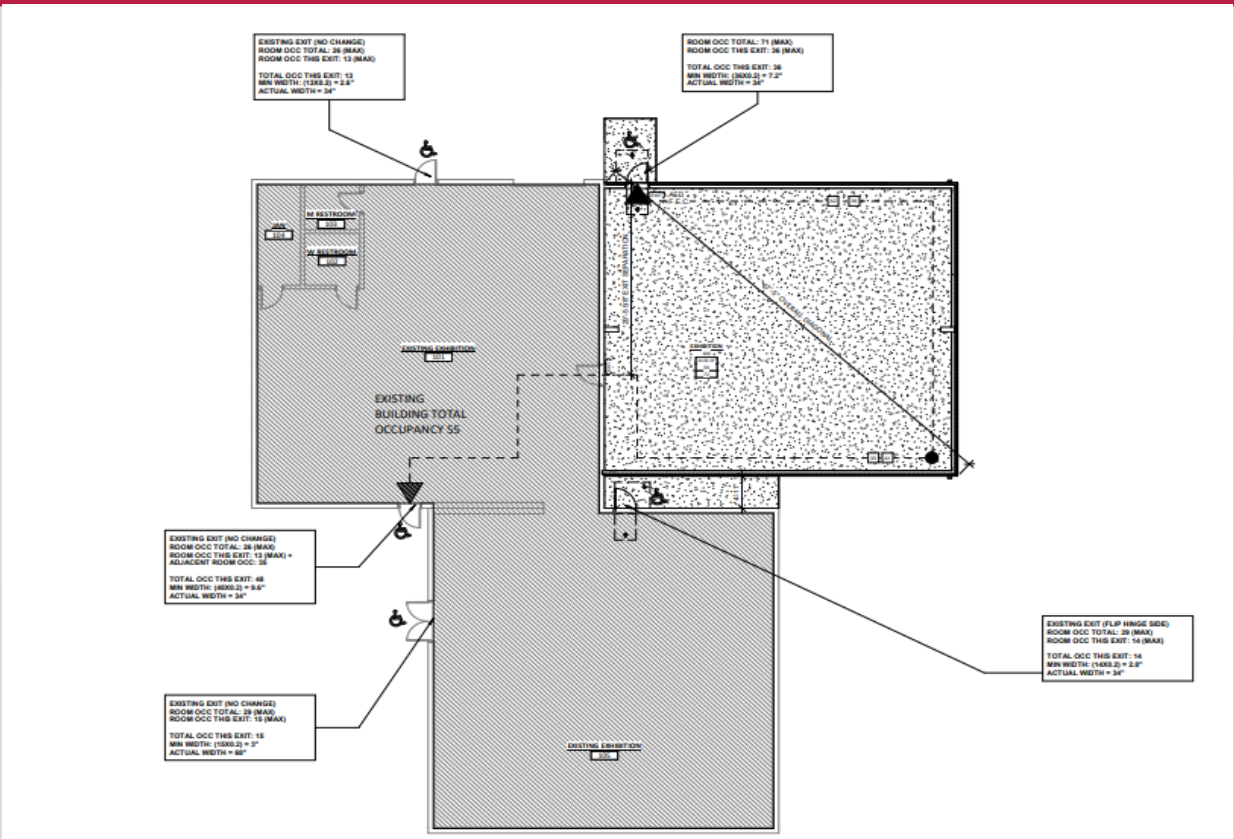
THE NEXT CHAPTER: MAINLY BECAUSE WE RAN
OUT OF ROOM.

**MO INSTITUTE OF NATURAL SCIENCE -
ADDITION**

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Springfield, MO 65810



DESIGNATED CLASSROOM AND EVENT SPACE



WARNING: BUILDING A MUSEUM MAY HAVE CERTAIN SIDE EFFECTS.



THE IMPACT ON OUR COMMUNITY

- 10 STUDENTS IN GEOLOGY AND PALEONTOLOGY PROGRAMS
- A NEW PARTNERSHIP WITH MSU TO CREATE A PALEO FIELD SCHOOL
- MAINTAINING AND BUILDING A COLLECTION OF FOSSIL AND MINERAL RESOURCES FROM THE SW MO REGION.
- APPROX 5,000 SCHOOL KIDS ANNUALLY VISIT THE MUSEUM
- BRINGING INTERNATIONAL RESEARCH HOME TO THE OZARKS
- AND MUCH MUCH MORE

QUESTIONS ?

