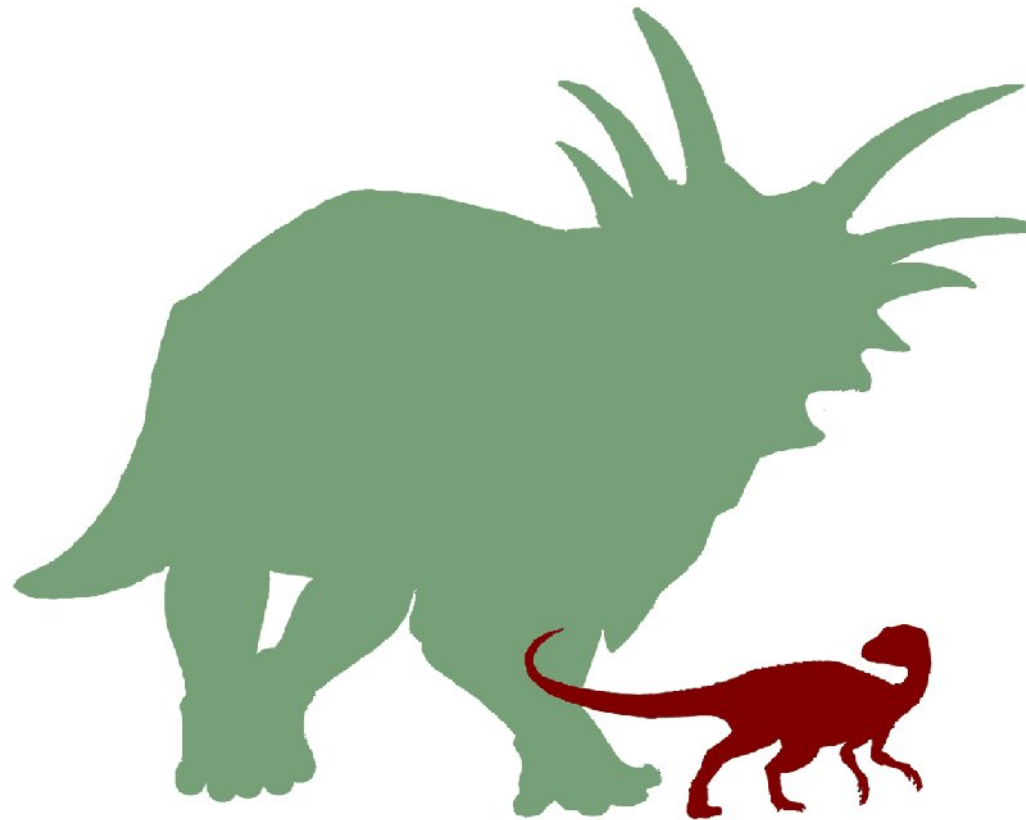


Morphological disparity, locomotion and limb proportions in ornithischian dinosaurs



The Open Dinosaur Project

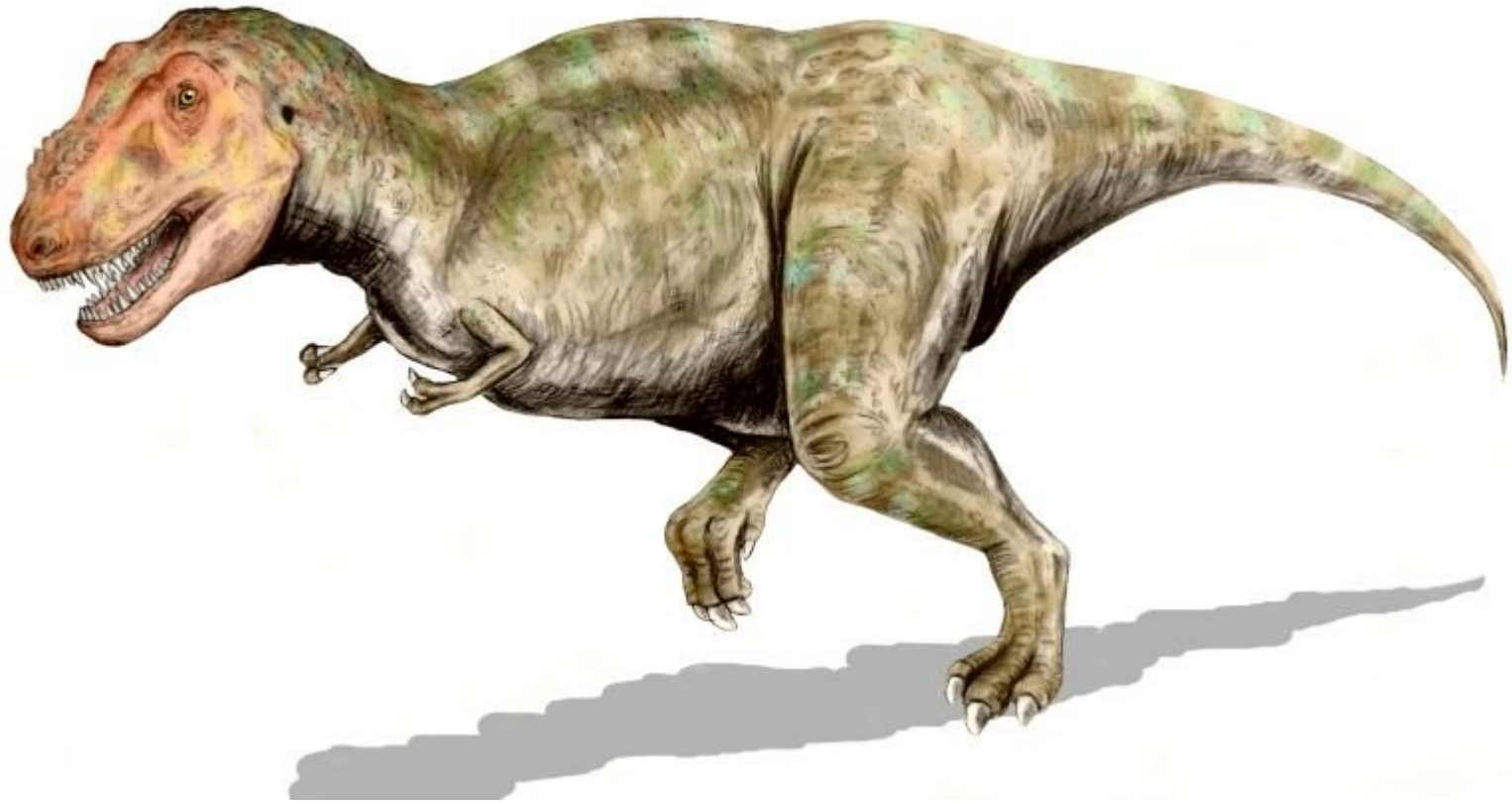
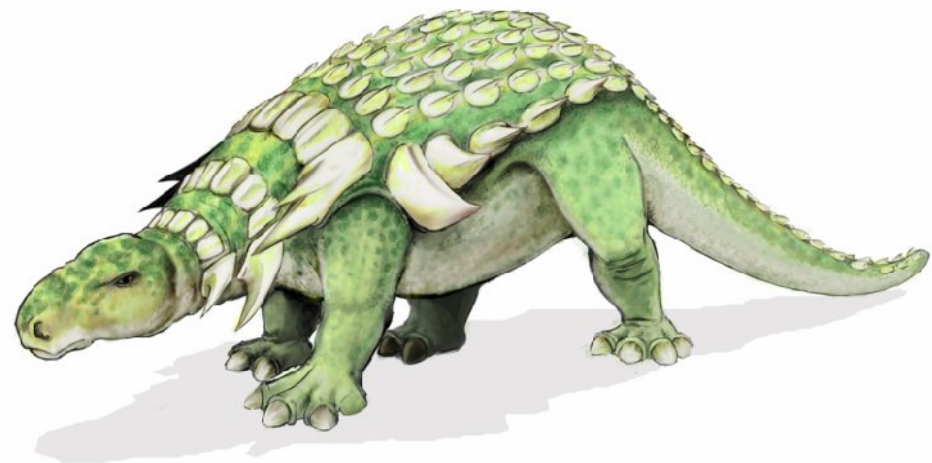
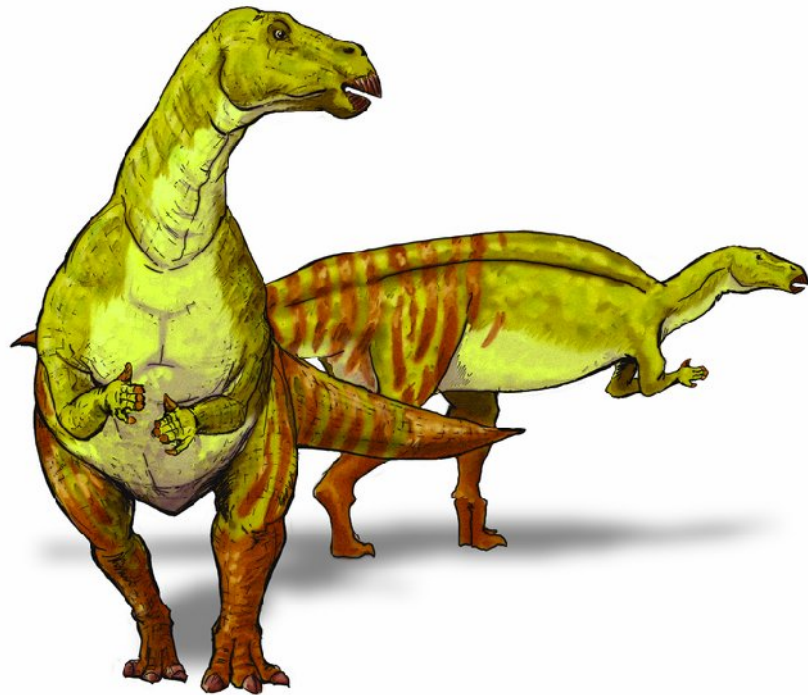
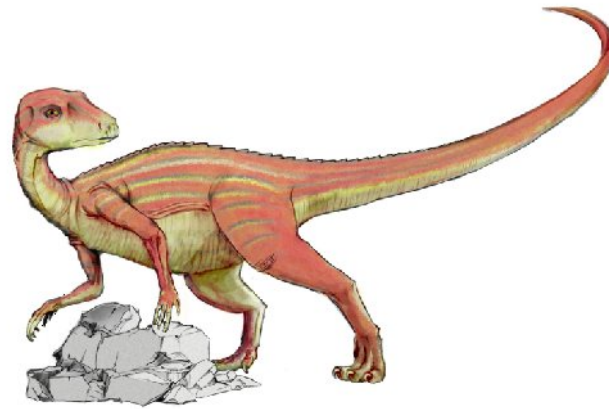
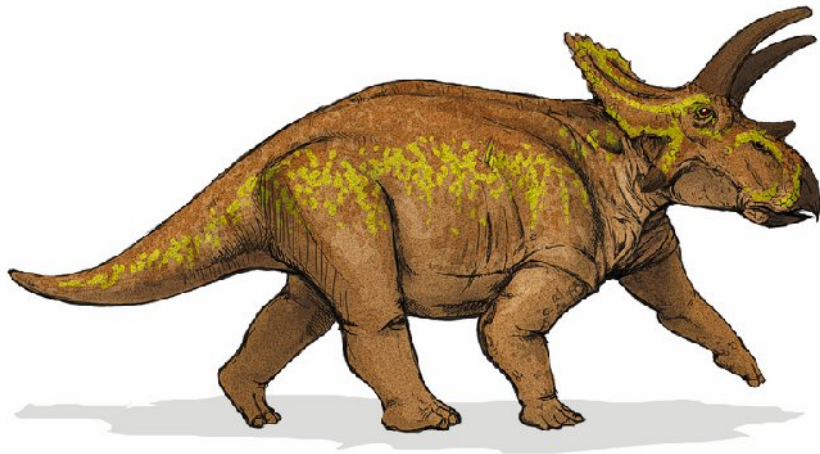


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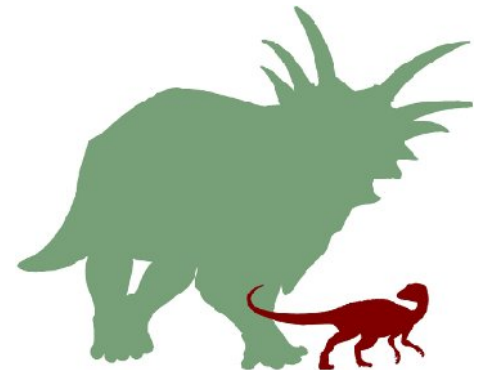
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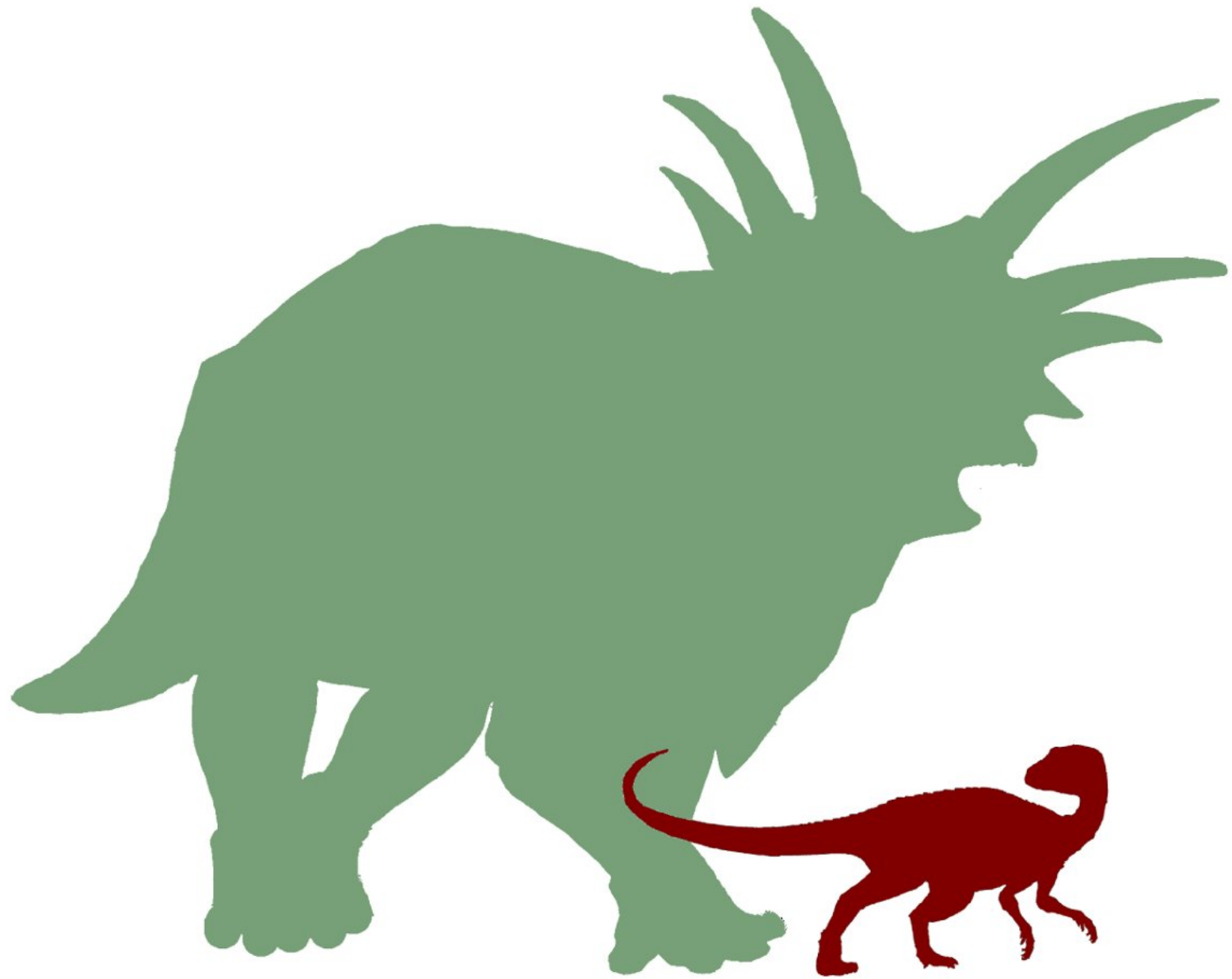


Images by Mariana Ruiz Villarreal
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Scientific Goals

- Understand the evolution of limb anatomy in ornithischian dinosaurs
 - Analyze morphological disparity within an evolutionary and temporal context
- Assemble database of measurements

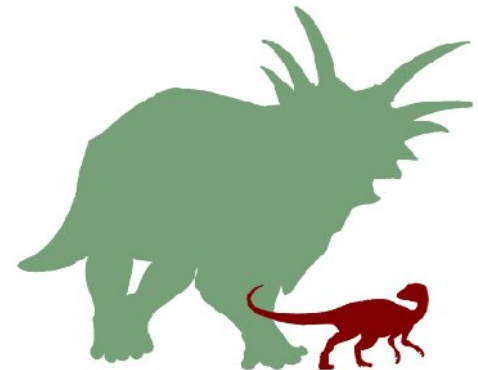




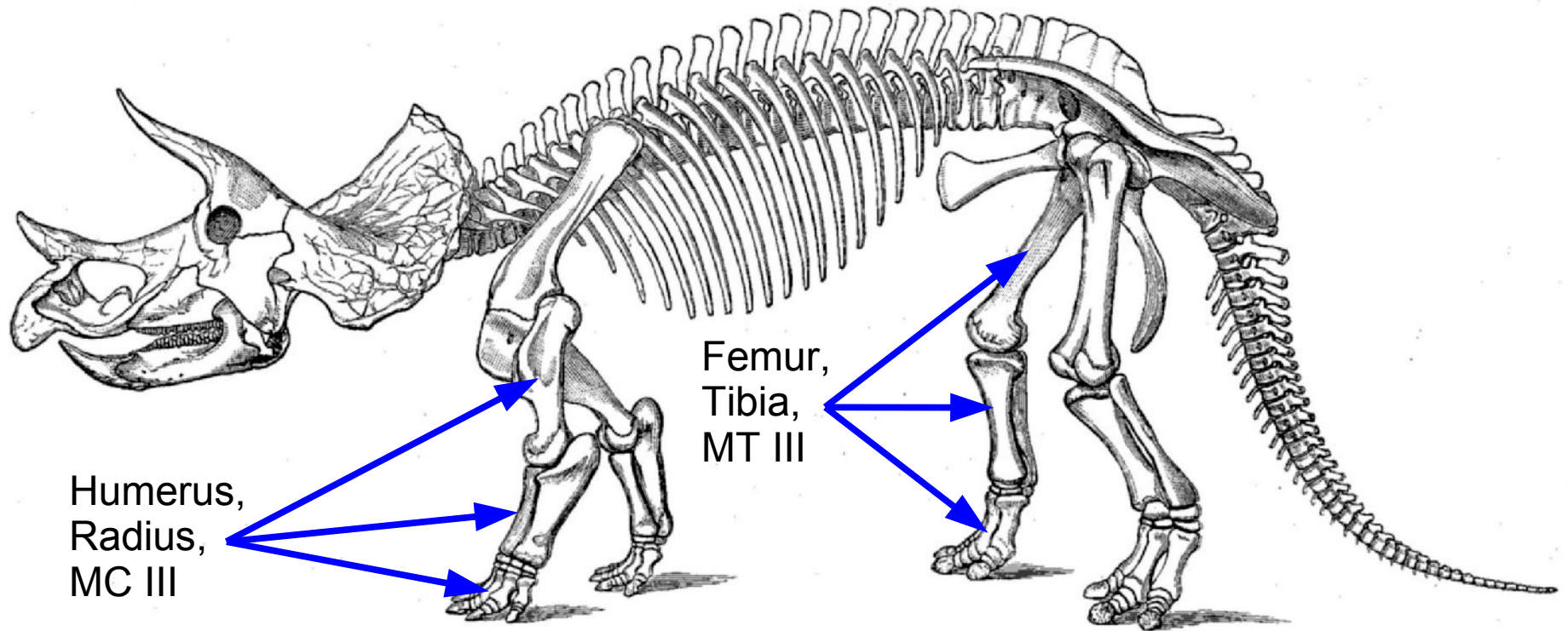
The Open Dinosaur Project

Results to Date

- Launched September 2009
- 3,074 data contributions
- 1,655 specimen entries
- 47 individual contributors
- Manuscript in progress



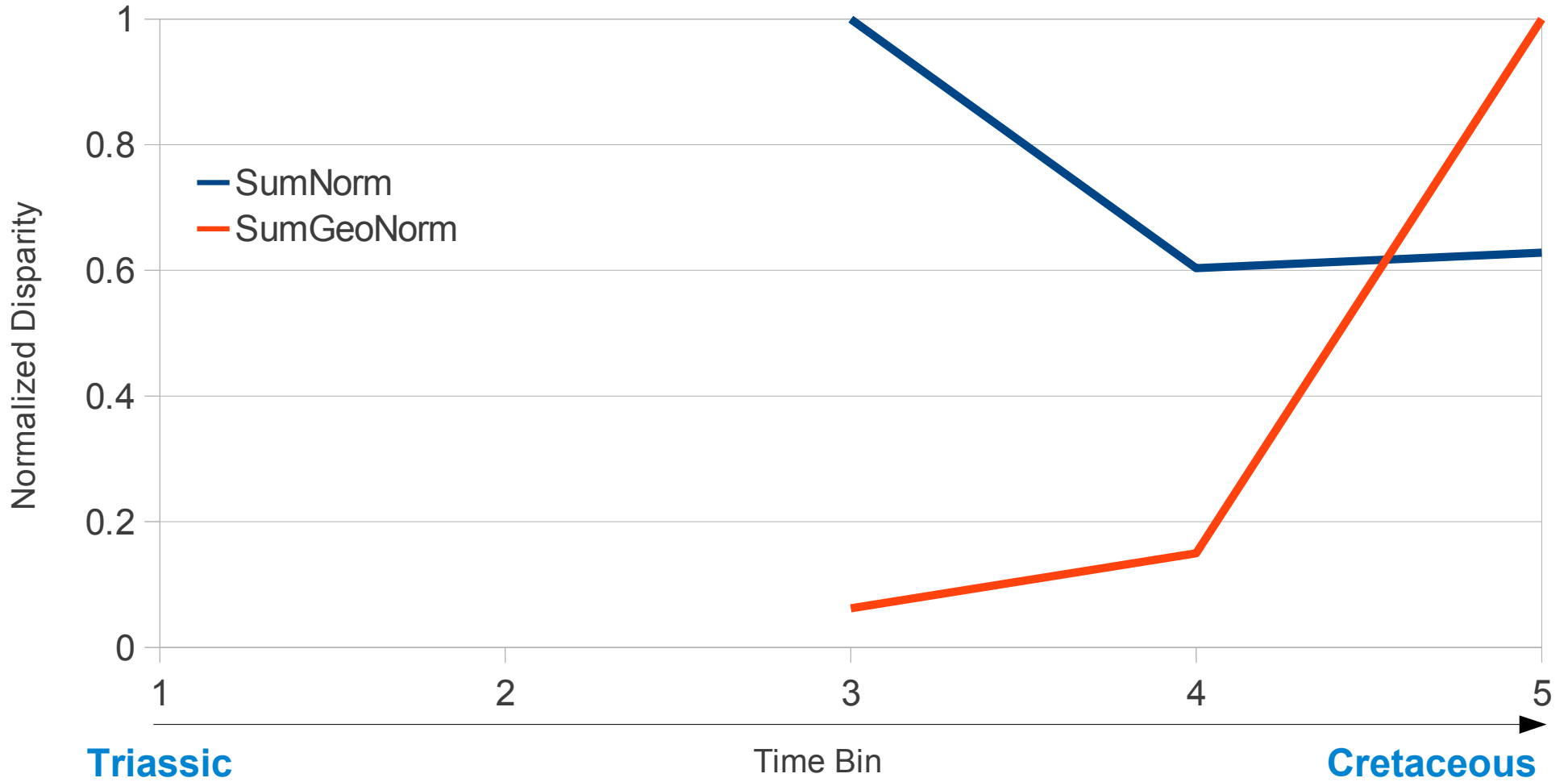
Measurements



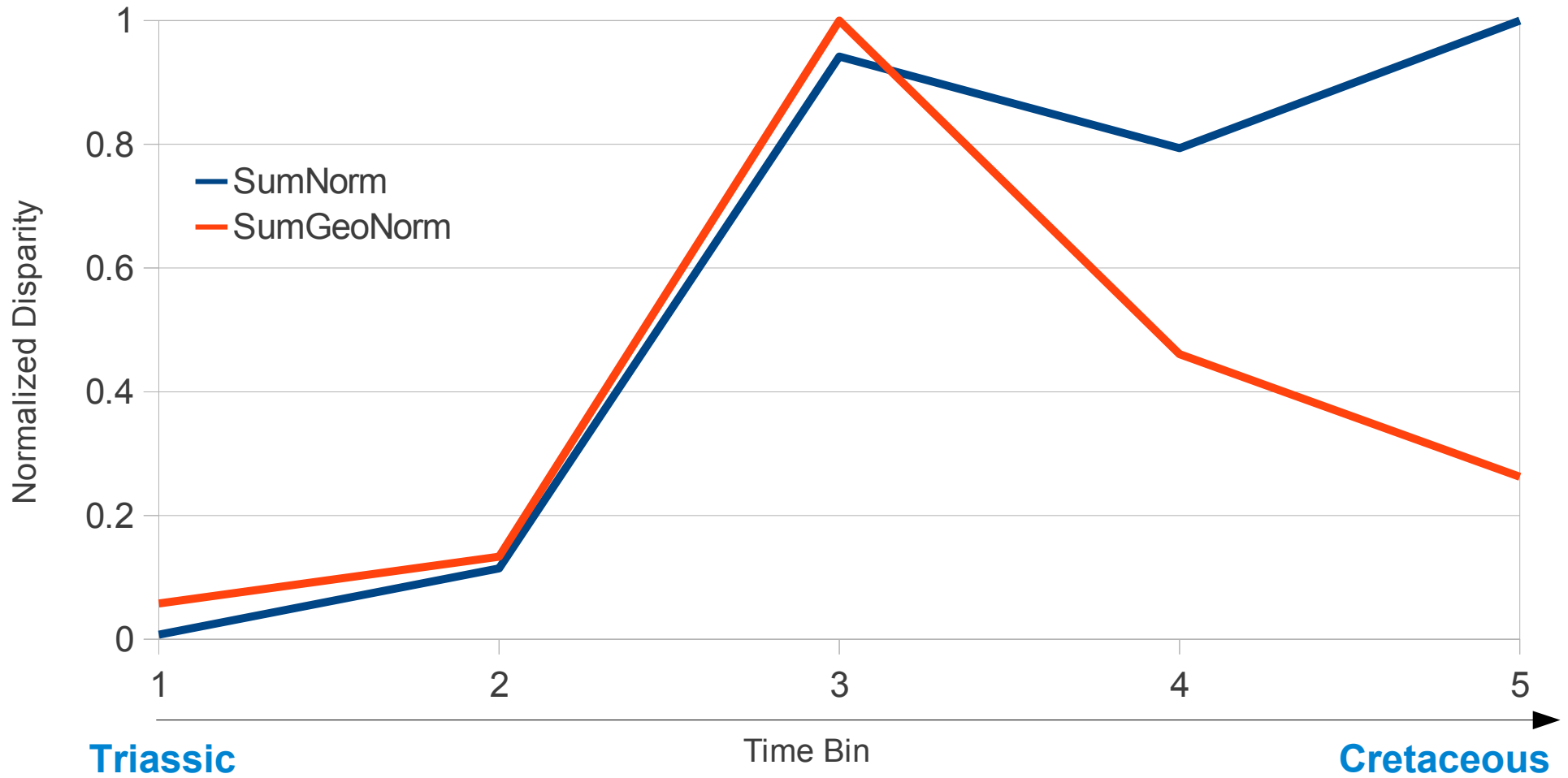
Analysis

- Examined morphological disparity through time
- Separated taxa into 5 bins (roughly 34 Ma each)
- Ran PCO on data, calculated sum of variances and root of product of variances, normalized values for comparison
- Used raw data (but potentially affected by body size) and geometric means to help reduce effect of body size

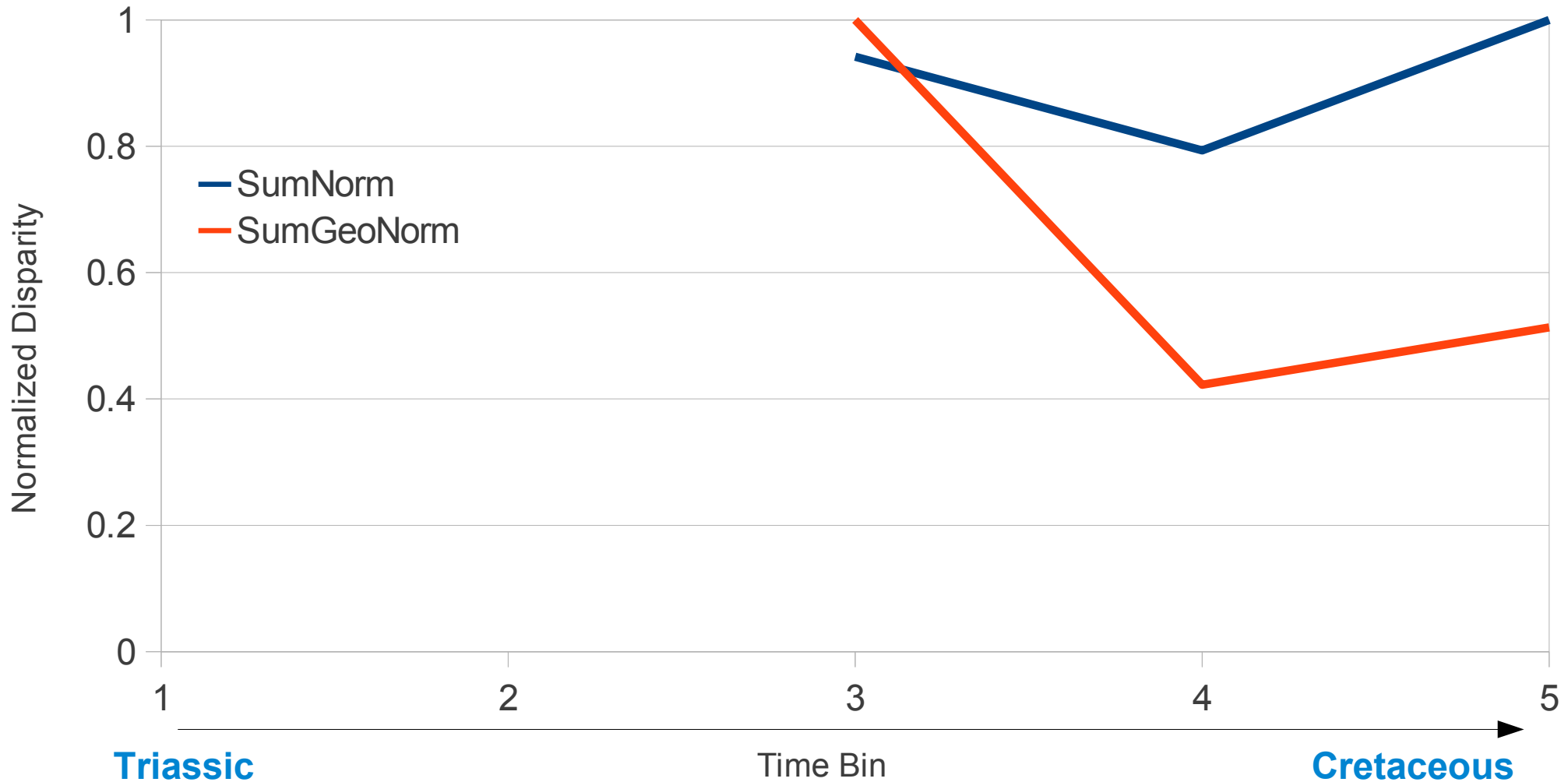
Forelimb Disparity Through Time



Hindlimb Disparity Through Time



All Limb Disparity Through Time



Conclusions

- Intriguing patterns in limb disparity through time
 - Body size may drive part of signal
 - Other part of signal potentially driven by origins of clades with unusual morphology
- Next:
 - Accommodate phylogeny
 - Statistical tests
 - Examine other metrics