



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kate Terbush</b>	<b>Project Number</b> <b>J2321</b>
<b>Project Title</b> <b>The Feathered Tyrannosaurus rex: Determining that T. rex Feathers Were Not Preserved Due to Soil Properties</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to determine how different soil types affect preservation of possible feather imprints of Tyrannosaurus rex. Research has proven that it is probable the T. rex had feathers, though T. rex feather imprints have never been found. <b>Methods/Materials</b> Six different soil types placed in separate containers. Made impression in each soil sample with chicken bone, sea shell and a downy feather (these three items emulate theropod bones and feathers) and pour plaster to make an imprint of each. Observed imprints to determine the relative visibility of feathers compared to the bones in each soil type. <b>Results</b> Two trials of experimentation confirmed that the bone and shell imprints were visible in all soil types. Feather imprints were visible only in fine grain soil types. Feather imprints were not visible in coarse soil types, the soil type in which the Tyrannosaurus rex died. <b>Conclusions/Discussion</b> My experiment suggests why the Tyrannosaurus rex has not been found with feather imprints though other theropods have, including the closest relative of the T. rex. My experiment data shows that feather imprints were visible only in fine grain soil types and not in coarse soil types. The type of soil determines whether or not any feather imprints were left behind. The coarse soil type that T. rex died in does not imprint feathers, therefore it is possible the T. rex had feathers that were not imprinted.	
<b>Summary Statement</b> My experiment supports that the feather imprints of Tyrannosaurus rex were never found because the coarse soil types the T. rex died in were not conducive to preserving feather imprints.	
<b>Help Received</b> I developed the project idea as well as created the board and conducted the experiment myself. My teacher Mr. Raul Cantalejo reviewed my work.	