



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Aaron J. Thiele</b>	<b>Project Number</b> <b>J1923</b>
<b>Project Title</b> <b>Torpic Fury!</b>	
<b>Abstract</b>	
<b>Objectives/Goals</b> To find out if I can manipulate a common frog into hibernation due to temperature changes in its environment.	
<b>Methods/Materials</b> Adult frog (pet, purchased); large aquarium; mud; water container; thick piece of cloth; lamp with infrared bulb; thermometer; timer; small, clear container with holes; ice cubes. I set up the aquarium with mud and a shallow bowl of water, introduced the frog, heated the interior with an infrared bulb, and observed the frog. I removed the lamp and added ice cubes to the water bowl and continued to gradually add more ice cubes. I observed the frog at timed intervals. I repeated the process, this time with the frog in a small container.	
<b>Results</b> The frog eventually entered a state of torpor, if not true hibernation. It showed the following signs of torpor: No body movement; reduced gullet movement showed reduced heart rate; eyes closed; mouth partially open; mucous coating over body.	
<b>Conclusions/Discussion</b> It is possible to cause a frog to go into torpor by gradually lowering the temperature in its environment. My project illustrates the sensitivity of frogs to their environment.	
<b>Summary Statement</b> I gradually reduced the temperature of a Red-Legged Walking Frog's environment and caused it to go into a state of torpor.	
<b>Help Received</b> Mother helped type, timed heartbeats, discovered one of the Web sites for research, sister helped design backboard research display, father took pictures. sister helped with backboard display of research, father took pictures research	