



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Joshua Stevens; Matthew Walters	Project Number S0313
Project Title Construction of a Fused Deposition Modeling Style Rapid Prototyping Machine	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To build a 3D printer capable of producing high quality prints similar to the quality of commercially produced printers, at a lower cost, and to gain a greater understanding and appreciation for the mechanisms and electronic systems involved in 3D printing.</p> <p>Methods/Materials 3D printed parts, Steel frame pieces and hardware, RAMPS electronics, Wade's Extruder Reloaded, J-style hotend, Wood and acrylic build area.</p> <p>Results We have constructed a fully functional 3D printer, at fraction of the cost of a commercially produced 3D printer, and we have gained the understanding necessary to fully design a custom rapid prototyping machine.</p> <p>Conclusions/Discussion Commercially produced printers are definitely much easier to operate and set up, but several times more expensive in most cases, and don't offer the educational benefits of designing or building your own.</p>	
Summary Statement Our project is a self-built 3D printer capable of producing 3D parts similar to those made by commercially built printers, and it was assembled for a fraction of the cost.	
Help Received Used 3D printer and some tools at the Center for Advanced Research and Technology, Clovis, CA	