



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Andrew C. Haden	Project Number S1410
Project Title Developing High-Performance Hybrid iOS Apps	
Abstract Objectives/Goals My goal was to improve performance of hybrid iOS apps, which are combinations of both native app code (objective-c) and web code (html5/css3). Methods/Materials Using my laptop, iPhone, and Apple's XCode development environment, I designed, implemented, and tested solutions for caching, animation, and communication in a hybrid app. Caching performance was measured in percent of assets stored on disk and percent of assets stored in RAM, as well as page load time in milliseconds. Communication performance was measured with message transit time after varied numbers of sequential messages. Results I successfully improved caching, animation, and communication performance. Caching tests indicated that the heuristics I implemented were successful in storing assets on both RAM and on disk and load times increased significantly; communication tests likewise displayed high performances, but slowed as the number of sequential messages increased. Conclusions/Discussion Hybrid app technologies are becoming increasingly popular with app developers such as Facebook, LinkedIn and Evernote because they shorten development time and allow primarily web developers to participate in app development. In my project, I successfully created (essentially drop-in) solutions for the issue of performance and communication in hybrid apps.	
Summary Statement I developed drop-in solutions to performance and communication in hybrid iOS apps.	
Help Received None	