



Research Interests & Development Plan

(Product Design & Engineering Technology)

by Edward Locke

Research Interests:

- (1) Developing and publishing an online college-level textbook on industrial design, titled Industrial Design in the Age of Digital Revolution and Globalization, as a collection of revised research papers completed during my graduate studies as a Master of Arts degree candidate in Industrial Technical Studies at [California State University Los Angeles](#), as a [National Center for Engineering and Technology Education](#) Doctoral Fellow at the [University of Georgia College of Education](#), and as a substantial expansion of my undergraduate thesis completed at [California State University Northridge](#).
- (2) Publishing more tips on engineering graphics and CADD skills (hosted on the [Engineering Course Materials](#) webpage).
- (3) Continue research on K12 age-possible engineering tops from various subjects of engineering

(with a focus on mechanical engineering) and publish the outcomes on the [SCHOLAR STEAM K12 +](http://scholarsteamk12plus.weebly.com/) website (URL: <http://scholarsteamk12plus.weebly.com/>).

Development Plan:

- (1) Establish a product design team with mechanical, electronics, material engineers and marketing professionals, and recruit investors to complete the development of a few household and portable outdoor appliances, including (a) a multi-functional food processing system (<https://suniseaproducts.weebly.com/multi-functional-food-processor.html>, *Figure 1*), (b) a multi-functional food-cooking system (<https://suniseaproducts.weebly.com/multi-functional-food-cooking-system.html>, *Figure 2*), and (c) a folding outdoor solar cooker (<https://suniseaproducts.weebly.com/portable-solar-cooker.html>, *Figure 3*); as well as a folding solar-powered tricycle.
- (2) Design more real world consumer products for clients and for educational purposes, to be hosted in the [New Product Design Projects](#) hosting page. As much as possible, these products will be “green” or ecologically friendly, multi-functional, upgradeable, using principles of ethical design and appropriate technology.
- (3) Develop more [Product Design and Engineering Challenge Projects](#) for senior-year students to participate; and publish the best ones online in the [Students' Works](#) and [Submitted Projects](#) hosting pages.



SuniSea COMBO Multi-functional Food Processor
Honorable Mention, 1993 GoldStar Design Competition

Figure 1. Multi-functional food processing system.



Figure 2. Multi-functional food-cooking system.



Figure 3. Folding outdoor solar cooker.