

# The Ergonomic Laptop

*Design Team*

Jim Burke, Mark Vose, Steve Kondo,  
Martin Tesselhoff, Stefanos Konandreas

*Design Advisor*  
Sinan Muftu

## Abstract

The *Ergonomic Laptop* is a design aimed at creating a laptop that can easily be used in a notebook mode, a tablet mode, and as an ergonomic PC. In this report we look at the ergonomics of operating a laptop computer. Stress throughout the human body, related to the operation of a laptop, is based upon how the individual fits into the distribution of body dimensions. In the case of the standard laptop only the most average users will not be at risk for injuries related to the use of a laptop. Our design will fit all users that fit within the middle 90 percent of body dimensions. The state of the art in laptop design shows several concepts with added benefits but all of these laptops fail to satisfy this project's goals. Our current design uses two arms and a slider assembly to increase the degrees of freedom of the screen from one to three. System components have been designed and their strength and dynamic responses have been calculated. The mechanical system employs two sets of friction pivots along with two different locking systems to hold the screen in position. In summary, this report shows how our design achieves the goal of a laptop suitable for the middle 90 percent of the population.