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**Andrew E Long\*** (longa@nku.edu), 495 Rossford Avenue, Ft. Thomas, KY 41075. *A Computer-Controlled Function Box for Plotting Surfaces*. Preliminary report.

By “function box” we mean a machine for producing three-dimensional surfaces corresponding to functions of two-variables. Its pursuit has been a passion of mine since my father, the late Cliff Long, introduced me to the hunt many years ago. Some people hunt deer; some people hunt bear; some people hunt function boxes.

Over the past seven years, the hunt has intensified. After chasing down numerous dead ends (e.g. electromagnets, solenoids, holograms), with several different students, funded by several different small grants, we finally “struck gold” with a combination of two students and their one-two punch: one built the machine, and the other made it work, and the result is a 27x27 collection of pins, driven by stepper motors, with MATLAB code controlling the operation. With it, the user can produce a surface in under 10 minutes, just exactly the right amount of time for a talk at a math meeting.

I will demonstrate the box’s operation, and emphasize some of the places in the curriculum where such a box might prove handy. I will also give a short history of the project, and talk about its future. My father (and inspiration) died before he could see this, unfortunately; but I hope that you’ll enjoy it. (Received September 17, 2007)