

# TEDD



## Totally Easy Drinks Dispenser

Oliver Bateman, Tim Graham of Daniel Webster College

### Problem Statement

Automatic drink mixers are a relatively old idea, but new project. Products like this such as the *Margaretville Mixed Drink Maker*, and the *Tahiti Margaretville Frozen Drink Machine* would suffer under the bustling use of a public bar or restaurant. Private investors have created some strong industrially oriented machines. However, these utilize complex and flimsy pumps, or flashy show features such as a track that moves a cup to the required liquor bottle, often taking in excess of 45 seconds.

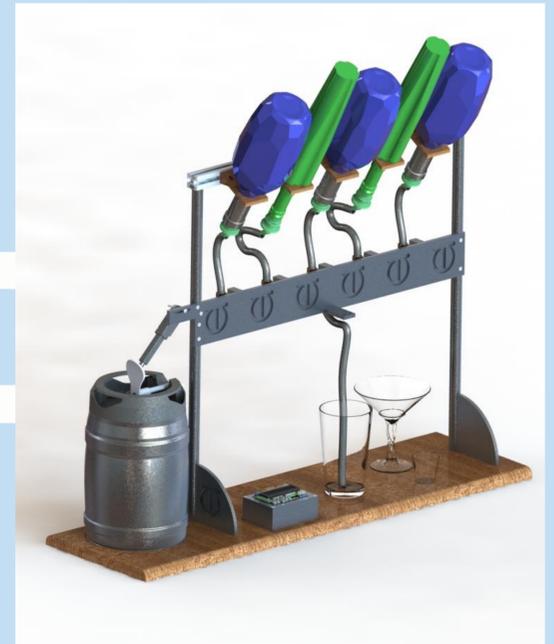
### Introduction

Using gravity fed solenoid valves, some linear actuators, and a few feet of surgical tube, the **Totally Easy Drinks Dispenser**, TEDD, enables the customer to press a button, select a drink, select their glass size, and have TEDD dispense their drink quickly. Using a set of predetermined recipes and an assortment of spirits, beers, syrups, and so-



### Design Features

- ◊ Holds at-least 5 bottles and a beer outlet
- ◊ Dispenses Beverages in less than 15 seconds
- ◊ Operates between 50°F and 100°F
- ◊ Operates in 100% humidity
- ◊ Has a spill safe electronics housing



### Design Components

#### Bottle Holders

- ◊ Hold Bottles spout down
- ◊ Side entry for easy reload
- ◊ Wooden for aesthetic appeal



#### Arduino UNO

- ◊ Code segments available
- ◊ Simple to wire



#### Hoses

- ◊ FDA Certified
- ◊ 1/2" & 1/8" diameter

#### Base Plate

- ◊ Grooved underside for wire routing
- ◊ Circular cut-out for mini-keg placement
- ◊ Attractive stained wood

#### Mid-Plate

- ◊ Features TEDD logo (O and T for creators)
- ◊ Hides unattractive solenoid valves, wiring, tubes

#### Adjustable Track

- ◊ Allows lateral movement for varying bottle sizes
- ◊ Uses 8020's "T-slotted" track and fasteners



### Electrical Components

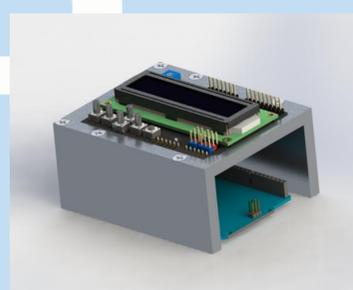
#### Actuator

- ◊ Variable opening speed for controlled pour
- ◊ Mounted to adjustable track to optimize position/ accommodate different mini-kegs
- ◊ 40 lb. max load



#### Housing

- ◊ Holds electrical components off ground
- ◊ Rubber O-rings to seal joints
- ◊ Inset into water trap in base -plate



#### Solenoids

- ◊ 1/2" valve opening
- ◊ .02 second opening time



### Conclusion

TEDD is a base model for a future commercially available drinks dispenser that will allow bar tenders to input a drink and continue working while the order is fulfilled. TEDD will be cheaper, easily repairable, faster, and more efficient than currently available products. It will also have the ability to be integrated with beer kegs, and be updated by simply downloading recipes. TEDD's only limit is the number of bottle slots purchased by the bar.