Out of 41 teams, 18 nominees for the award, 5 finalists selected by internal review judges, winners selected by external review judges.

First – Bill’s Movers – Automatic ping-pong ball serving machine. Serves up to 200 balls, about 1 per second, hits the table almost every time. Can serve left, right, random. Propels the balls with four motors to impart variety of spin, at 5 – 50 mph serve speed.

Second – ClimaCool – Absorption refrigeration cycle on a back-pack to keep vaccines cool during transport in remote areas. Cools all day on one charge while refrigerant bleeds through a small (0.005”) orifice. Refrigerant stored in a charcoal canister, which when heated (on a fire for example) boils back up and condenses at pressure in the top tank ready for another day of cooling.

Third – ChairUp – An attachment that allows a wheel chair rider to lift the chair up onto a curb. Lift mechanism uses gears and scissors mechanism to convert right-hand crank motion into a complicated output that first lifts the front wheels, allowing the chair to be propelled part way onto the curb, then more cranking lifts the rear wheels to complete the cycle. Continued cranking stows the mechanism under the chair ready for next use. Mechanism easily detaches from the chair so it can be folded and stored. Fits variety of chair designs.

Honorable Mention - ECHO - A disaster relief robot. Honorable mention for tacking an ambitious task and working hard to complete it.