



## Technology Proposal

### 2021-2022 NYID CREATE Competition

#### **Member Agency**

AHRC Nassau - Freeport, NY

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## **Background**

AHRC Nassau hosts a number of services for persons with developmental disabilities including pre-vocational, employment training, and supported employment services. Pre-vocational services are designed to discover employment interests, assess job readiness and create a support program that has the gainful employment as its ultimate goal. Employment Training Program (ETP), a paid internship leading to employment. The Employment Training Program (ETP) includes full employment discovery, targeted job development, employment readiness classes, coaching, and support in transitioning from the internship into supported employment (SEMP). Supported Employment (SEMP) provides job development, placement services and ongoing support to maintain employment. SEMP Services are available to men and women over the age of 18 enrolled in OPWDD's Home and Community Based Waiver Services or enrolled through Adult Career and Continuing Education Services Vocational Rehabilitation.

## **Problem Statement**

AHRC Nassau in Freeport experiences regular opportunities to secure contracts and agreements from outside regional companies for the preparation and delivery of specialized cardboard packing materials that are used in the shipment of fragile items. These specialized cardboard materials need to be cut, glued and assembled by AHRC employees using tools and a hot glue gun. Due to the nature of the job, only certain employees may be capable of performing the job due to its potentially hazardous nature leading to cuts and burns from the tools and glue guns respectively. These deficiencies in the assembly process lead to a limit on the number of cardboard contracts that AHRC can commit to and thus does not maximize the number of AHRC workers that could be employed by those contracts.



## **Rationale and Design**

NYIT intends to create a technology that standardizes the process of cutting and gluing specific cardboard shipping materials that will create a safe and productive environment for AHRC employees to maximize the output of quality cardboard shipping materials thus enabling AHRC to train and implement more AHRC employees to produce the materials.

## **Design Features:**

- Device will be able to handle a variety of sizes and shapes of cardboard materials
- Device will cut/trim the cardboard insets when necessary
- Device will lay a bead of hot glue around a preset boundary for that product
- Device will lay a series of single glue points when a bead is not necessary
- Device will instruct the employee audibly on what step to take next
- Device will be aware of an employees hands in the device maximum safety
- Device will alert managers to productivity, problems, or employee assistive needs

## **Proposed Usage:**

- Device will be programmed to a set product/size/details by a manager
- Employee will be instructed on what piece of cardboard goes in the device
- Employee will be instructed to start the cutting/gluing process
- Employee will be alerted to remove the completed item from the device
- Device will keep track of the number of items completed
- Device will alert the employee when it is time to take a break for safety purposes

## **Budget:**

- |                                |                |
|--------------------------------|----------------|
| ● Aluminum framing supplies    | \$250          |
| ● Stepper motors and belts     | \$150          |
| ● Raspberry Pi control boards  | \$150          |
| ● Motor controller boards      | \$100          |
| ● Electronics                  | \$75           |
| ● Hot glue dispensers          | \$150          |
| ● Miscellaneous parts          | \$25           |
| ● Specialized tools/components | <u>\$100</u>   |
| ○ <b>Total Cost</b>            | <b>\$1,000</b> |