1. Please list all team members, their disciplines, and departments:

Christopher Conley RRManager Respiratory Department James Lipsey Director Engineering

2. Briefly, what is your project idea?

Develop a tracheostomy tube holder that.

- x Securely holdshe tracheostomy tube in place for all patientsith a tracheostomy tube.
- x Alerts someone if a patient is attempting to remove a tracheostomy tube unexpectedly.
- x Prevents someone from removing a tracheostomy tube xpectedly.
- 3. What problem does your ideaplve?

The prevention of patients accid or intentional attempting of a decannulation (the removal of the tracheostomy tube from a patients neckline) 2022at Shirley Ryathere were 16 documented unplanned set fecannulations, 14 initiated by patients in the mental deficits due to a brain injury and 2 that occurred during an activity

- x Unplanned decannulation of a tracheostomy tube from a patient can be painful at Shirley Ryan always results in medical personnel being called to put the tube to ack in the patient to maintain the patient way.
- x Premature dislodging or removal of the acheostomy tubewhether intentional (with patients that have mental deficitso) accidental during daily activ(typarticipation in physical and occupational daily activities and result in a healthisk and initiate a medical event for the patient unexpected removal of the tube results in the patient being unable tomaintain normal breathing.
- x Patients with a breathing tube in place rely on the tube for maintainipgtant airway allowing them to breatheormal. When the tube is removed or dislodged physical change in the airway may take place disrupting normal breathing.
- 4. How are you going to solve the problem (list the steps) id a better tracheostomy tube hoder
  - a. Reviewwhat opportunities for improvement exist with the current holders that are being used an **d**etermine what allow spatients to be able to easily remove them.

\*\*Project Grant applicants are strongly encouraged to identify a research partner as appropriate. Melissa Briody (mbriody@sralab.org) can facilitate a research partner for Project Grants as needed.

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- b. Improve the strap feature on current prototype so that it can with stand the amount of torque required to pull the straps loose.
- c. Create aharness connected to a motion sensor that fits over the flange of a tracheostomy tube an**d**llows it toalarmif it is removed
- 5. What is the desired outcome for this project?
  - x Create a tracheostomy tube holder that securely holds the tracheostomy in place during all activity and can easily be removed by caregivers in the event of an emergency.
  - x Eliminate š Z ‰ šajbilityš to remove the tracheostomy tube holder and subsequily removing the tracheostomy tube.
  - x Create an environment that alerts someone if an attempt is being made by a patient to remove a tracheostomy tube.

How will you determine if you were successful we are able to create a workable rsion of the device that can potentially used in a more formal study to test is ficiency

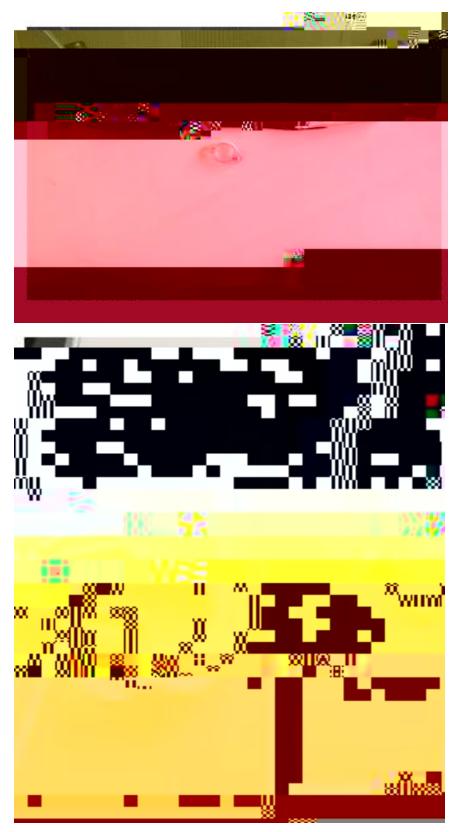
- 6. What help do you need?
  - x Perfecting a prototype
  - x Sourcing materials
- 7. Amount funding reqested: (\$1,000\$10,000)

Total: \$5000.00 Person hours24 to 48 hours Equipment/Supplies: \$1000.00

8. Please attach the following item A sketch or picture of the ide a Seeimages below

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