



Barber National Institute
Making dreams come true.



ROBOT

RESEARCH PROJECT

FACT SHEET

Research is a collaboration between the **University of Notre Dame** and the **Barber National Institute**.

Pilot phase of the project began in April 2012 with four students from the Elizabeth Lee Black School (two 5-year old boys and two 3-year old girls).

Research will evaluate whether the addition of a robot into therapy is effective in teaching social and communication skills to children with autism.

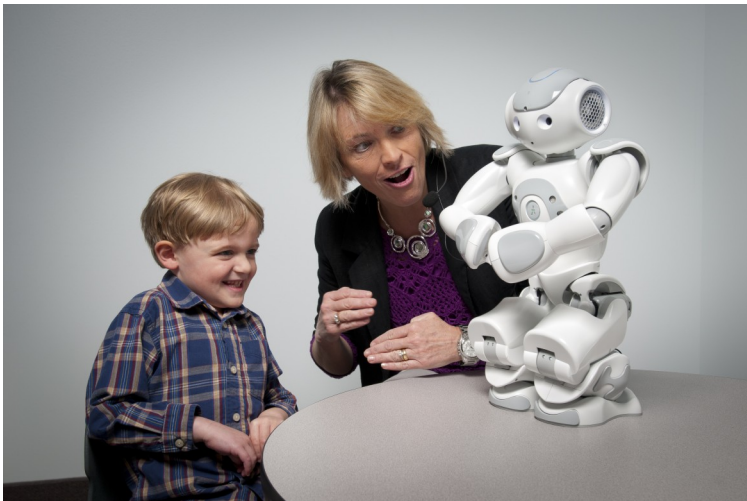
Research is expected to continue over the next 2-3 years.

Children ages 3-17 with an Autism Spectrum Diagnosis will be considered for this project.

An extensive assessment is given to each child that includes IQ testing and evaluations for speech and language and overall development.

Therapy sessions will be conducted two/three times per week for a total of 16 sessions.

Children will be paired by developmental level; one child will receive therapy with the robot for 8 sessions, while the "partner" has sessions with only the therapist. They will switch for the next set of 8 sessions.



Five-year-old Blaize Cheeseman reacts to the robot, Brendan, with therapist Mary O'Camb.

The two robots are Brendan and Briana (Bree for short); both are NAO interactive humanoid robots made by Aldebaran Robotics in Paris, France.

Robots are programmed with an unlimited number of responses and reinforcers, accompanied by movement, as well as several songs.

"Domer," a software program developed by Michael Villano at Notre Dame, enables the team to quickly send specific behaviors to the robot following the child's target responses.

Research is conducted at the Barber National Institute in the STAR Lab (Specialized Treatment within Autism Research).

The research team supervises therapy sessions while observing through a one-way mirror and in constant contact with the therapist through wireless headsets.

The research team consists of a master's level board certified behavior analyst (called the "headmaster") and a master's level behavior specialist to program the robot (known as the "wizard").

Each session will be videotaped and sent to Notre Dame for analysis.



"Wizard" Dan Portenier, left, selects responses for the robot while "Headmaster" Jennifer Zona directs the therapy session.



Dr. Gertrude A. Barber
Foundation

The pilot phase has been funded by a grant from the Dr. Gertrude A. Barber Foundation. Individuals or businesses interested in funding opportunities should contact the Barber Foundation at 814-878-4033.