

## Autism Speaks Study – Experiment Summary

A baseline session will be conducted with all children to administer the Autism Diagnostic Observation Scale (ADOS) in order to collect data for qualitative scoring (Q-ADOS) of children's social and communicative behaviors. The ADOS is a standard procedure used in the assessment of children with autism.

Children will be randomly assigned to one of two conditions:

- 1) Contingent anthropomorphic robot plus trained therapist and parent
- 2) Trained therapist and parent (no robot)

Children will then have five 30 to 60 minute sessions, scheduled weekly for five weeks. The child's parent(s)/guardian(s) and a trained psychologist will be present in all sessions. The therapist will be instructed to engage the child in play and to encourage social interactions between the child, therapist, parent/guardian, and robot (when applicable) by following the child's lead and communication overtures.

A summary of the experiments for the two conditions is given:

*Condition 1:* An anthropomorphic robot is equipped with a bubble-blower, which activates in response to the child pushing a button. In addition, the robot will move about the room in response to the child's movements and verbalizations, moving back if the child comes too close, moving toward the child if the child is too far away, and turning to face the child. The robot will initiate "Simon says" type gestures, and the therapist will encourage the child to imitate the robot.

*Condition 2:* A trained therapist will engage the child in play with the bubble-blowing and a "Simon says" toy, as well as other toys commonly found in therapeutic rooms.

Following the five sessions, a follow-up session will be held to repeat the Q-ADOS, to determine if social behaviors observed in sessions with the robot generalize to a non-robot situation.

The participants will be monitored using video cameras and microphones placed throughout the room and on the robot. In addition, the robot will keep a log of its observations and actions. This data will be used for manual annotation and automatic signal analysis.