### Objectives
- Mobile robots that can perform many different tasks in human environments
- Skillful and robust grasping and manipulation of everyday objects
- Learning grasping and manipulation skills from human teachers and by “playing” with the world
- Learning task-oriented representations that generalize across tasks
- Social interaction for collaboration in tasks and for learning

### Background
- Aging populations in Japan, Singapore, Germany and (soon) the US -> reduced labor force and scaled back economy
- Must care for these populations and maintain the labor force
- A part of the solution: robots that can work in our homes, offices and communities
- Require robotic systems that are:
  - Flexible in the types of tasks that they can perform
  - Can safely work along side and in collaboration with their human counterparts
  - Can learn to perform new tasks in situ

### Current State
- New platform is largely in place:
  - Arm (Barrett) and hand (our own)
  - Mobile base: Segway
  - Steerable binocular vision: Traclabs
  - 3D vision system: localize objects to be manipulated
  - Automatic mapping of environment

### Planning and navigation
- Affordances for connecting vision to grasp actions

### Relevant Publications