

## Virtual Exertions (transcript)

**Rob Radwin:** I'm Rob Radwin, and I'm a Discovery Fellow at the Wisconsin Institute for Discovery, and a professor in the College of Engineering, and I'm working on a new project that we call "Virtual Exertions." We can learn how people perform, sometimes dangerous, tasks in a very safe way.

So what we're trying to do is to add the dimension of movement and touch, and allow people to actually exert forces against things that are just created in front of them with a projector and virtual reality goggles. So they're using their own muscle activity to make objects move.

We have people lift real dumbbells, and we measure the muscle activity, and then the computer remembers the activity that was used during the actual lift, and then in the virtual reality situation we ask people to contract their muscles and stiffen their limbs, and we measure the muscle activity when they're doing the virtual exertion. That controls the simulation.

Using "Virtual Exertions," we could alter people's abilities and study how people with movement disabilities might perform under certain circumstance on certain kinds of tasks.