The inner cell mass cells, which are going to be removed and grown in a petri dish. We first remove the outer layer that would normally form the placenta. Here the cells are put into a petri dish, usually there are mouse embryonic fibroblasts on the bottom of it to help the cells grow. Most of them don't survive, but a few do and can grow into colonies of cells as you'll see here. So this then is that process of self-renewal. The cells can continually self-renew and in fact, they are immortal in culture. They can be grown like this forever. Some mouse embryonic stem cells growing now in the lab were derived more than 30 years ago so they've long outlived the life of the animal from which they came. Now here we're going to see them begin to differentiate, begin to start to specialize so some of them are becoming mesoderm, and some of them ectoderm. There you see a neuron forming. Here you see a different kind of tissue forming, and I'll show you a different example of that in a second. One of the big puzzles in biology is to try to control this process now. So these cells with all of this potential that can become any part, how do we tell it what to do? Well a growth factor that has the funny name Sonic hedgehog, named after the cartoon character, is actually quite important for telling cells what to do, as is another kind of a growth factor called activin. So these are examples of experiments where we're adding growth factors to cells to tell them what to do. And this is an area where we need lots of help from people like you to begin to figure out what is the combination of signals that will tell these cells what they should become.