Video 2: Identifying Uses of Genetically Modified Organisms

To further prepare for the class discussion, the teacher turns from the biology of genetically modified organisms to a new question: What are students' ideas about some possible uses of these organisms? Students draw upon their prior knowledge and information from the assigned reading on this topic and brainstorm potential applications.

INT: So let's think about applications of that lab, right? What are some other genes or proteins that would be really useful to have bacteria create for us? Can you imagine some things that we could use this for?

FEMALE: I know that there's insulin creating bacteria since some humans -- because we have--we're diabetic,

INT: What other reasons might we try to get another organism to build proteins it wouldn't normally build?

FEMALE: Well like in the article, when they injected these new genes, so that it would build protein, so that maybe it could resist for -- like for example, pesticides. So like a certain pesticide could be used and it wouldn't kill off the plants, but it'd kill off the weeds around it, and the proteins would let it resist that.

INT: Um hum.

MALE: If you wanted to like -- if – if you assume that we want to be able to digest, like plant material that we can't digest now, and we have bacteria like produced like an enzyme that allows -- allowed us to break down -- break down those -- that material, and allowed us to digest it that way. So --

INT: Yeah. Can you guys think of something that we consume that we do not digest, like --

FEMALE: Cellulose.

MALE: Cellulose.

INT: Right. Cellulose. So what would -- what would be the advantage of what Colin's proposing?

FEMALE: (Survive) off of wood.

INT: Yeah.

MALE: You wouldn't have to worry about like global food security as much because you could like grow anything.

INT: Right. So are you -- we started off thinking about medical uses, right, having bacteria build stuff for us that we could then use to resolve some medical issues of us not building what we need. And now you're talking about giving us an ability we would never have had before to build something that would give us a very different, I don't know, phenotype, right, that wouldn't have occurred in nature.