Stanford eCorner

Envisioning the Future: Other Potential Applications of the Technology

Gajus Worthington, *Fluidigm*

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The applications for the Fluidigm technology may be far from being realized, says Worthington. Fluidigm is currently working on high-throughout methodologies, like genome screening and protein-protein interactions, as well as what could turn out to be breakthrough science: using rubber pumps to simulate body functions to trick cells into thinking they are inside the body, he says.

Transcript

In principle, anywhere where you see high throughput biology in principle we can do it better. That's a little bit of a generalization because it comes down to things like chemistry which are really difficult and importing chemistries from one platform to another sometimes doesn't work actually, but in our case we have products in the pipeline that will do very high throughput. For example, genomic screening, protein-to-protein interactions, protein ligand interactions, all things that are cutting-edge and very important. We've also been able to do the very beginnings of what could be some fundamental science. If you think about our bodies and about how biology is done at our level, it's actually done in a environment. When boil all the way down to a cell, for example, it's plumbed by very tiny capillaries and things that take away the waste. It's all done with very, very tiny plumbing. We've done some early experiments that are least suggestive that when you create environments on a chip that allows cells to grow and then combine that with plumbing around them, things that bring in oxygenated fluid and take away the waste and stuff that like that that we may actually be tricking the cells into thinking if they're still inside the body. That's a fundamental result if it turns out to be true. If it turns out that we're able to trick cells into thinking they're still in vivo then there's all kind of cell biology that you could do that is impossible to do today.

So those are the kinds of things we're working on. They range from very high throughput methodologies to new science.