



Challenge: Dr. Delphine Dean and her lab accelerated research in the bioprinting field by developing a way to induce transient membrane pores in thousands of cells simultaneously while retaining high cell viability. Although revolutionary, they had difficulty sharing the method effectively with others.

Solution: Dean needed a quick and easy way to disseminate her lab's unique technology to colleagues and students. By publishing with JoVE, her lab was able to clearly convey via video how they converted a standard inkjet printer into a custom-built bioprinter.

"With this technique, when you try to explain it to subsequent students, you run into problems. It's written out in the protocol, but it doesn't translate well until you see it."

-Dr. Delphine Dean, Clemson University

Results/Benefits:

- Use of JoVE video reduced the time it took for new students to learn the technique from 1 month down to 1 week. Since students spent 75% less time trying to learn it and could focus on applying it, they were able to advance the methods for broader applications. In less than a year, students modified the technique to print enzymes instead of cells, allowing them to test glucose levels of patients in underdeveloped countries for 1/100th of the cost of traditional methods.
- Visualizing the technique in JoVE's unique video format was pivotal in securing grant funding and earning Dean the NSF CAREER award.
- The video has received 35,000+ views since publication in March 2012.