

Scientists around the world peer into Chicago microscope at same time

May 3 2012, By Marla Paul

A scientist in Austria or elsewhere in the world can now peer into a Chicago collaborator's microscope in real time while an experiment is being conducted at Northwestern University Feinberg School of Medicine.

iExperiment is a novel portal developed at Northwestern where scientists from around the globe can watch and participate in experiments in reproductive health for the Oncofertility Consortium, a National Institutes of Health-funded research project to explore reproductive options for cancer survivors.

“This is the first time researchers can look into a colleague's microscope from anywhere in the world,” said Teresa Woodruff, director and founder of the Oncofertility Consortium and chief of fertility preservation at Northwestern's Feinberg School.

The new application of technology will speed the pace of scientific discoveries, she said. “A better way to do science is to share it in real time and have people look at the data as it is collected and to apply that knowledge in their own laboratories,” Woodruff said. “And that is a real paradigm shift in science.”

An upcoming paper in *The Journal of Adolescent and Young Adult Oncology* describes Northwestern's new uses of technology in oncofertility that can be applied to other scientific research.

Woodruff's research focuses on growing a woman's immature egg cell, contained in a tiny sac called a follicle, to a healthy and nearly mature egg in the laboratory. The research has the potential to eventually provide a new fertility option for women whose cancer treatments destroy their ability to reproduce.

Each digital [microscope](#) in Woodruff's follicle culture room has a camera that streams live video via Vidyo desktop conferencing software. This gives scientists access to the laboratory from any location in the world and allows them to watch experiments on their computers or mobile devices and communicate directly with the researchers.

“Hopefully what we have done is catalyze the research so that instead of having to wait to see the results published, researchers can begin the next generation of work now,” said Woodruff, who also is the Thomas J. Watkins Memorial Professor of Obstetrics and Gynecology. “We think that is really going to mobilize reproductive health sciences in a significant way and could mobilize all science activities.”

The Woodruff Lab collaborated with Northwestern University Information Technology to implement the software and adapt existing video conferencing technologies to create iExperiment.

Woodruff's goal is to grow a human follicle into a mature egg in vitro that can eventually be fertilized, which represents a solution for cancer patients. “If we work in a traditional way, by ourselves, it will happen, but it will happen too slowly,” she said. “So to ensure the pace and the quality of the research is as high as possible, we felt that a global collaboration was necessary.”

Last fall the group launched the first Oncofertility 101 course, in which international and United States researchers learn techniques used in Woodruff's lab, such as in vitro follicle dissection. The iExperiment

software is installed on their computers so they can work with Feinberg collaborators from afar and share data as it is being discovered, noted Kate Timmerman, director of the oncofertility program.

“Scientists come from as close as Madison, Wisconsin, and as far as Austria, Australia and South America,” Timmerman said. “iExperiment brings us together.”

Provided by Northwestern University

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