



## Oklahoma Medical Research Foundation

Molecular, Cell and Developmental Biology Research Program, **Ute Hochgeschwender**, M.D., Associate Member; **Stephanie Bui**, B.S., Research Assistant; **Peggy Hunnewell**, B.S. Associate Research Assistant  
<http://www.omrf.org/OMRF/Research/06/Welcome.asp>

## Blastocyst Friendly XYClone®

As part of the Molecular, Cell and Developmental Biology Research Program at the Oklahoma Medical Research Foundation (OMRF), Dr. Ute Hochgeschwender, Stephanie Bui, and Peggy Hunnewell work to generate mutant mouse models for mental retardation. In addition, they are also involved in the technical issues of mutant mouse generation in the context of the Microinjection Core Facility.

Hunnewell and Bui first happened upon the XYClone laser in an Internet search to find an alternative to the piezo drill for nuclear transfer. After receiving a demonstration of the XYClone at their laboratory, they learned that the laser could also replace the sharp micropipettes they used for blastocyst injection. When comparing methods, they find that the “insertion of cells into the blastocysts cavity is easier with the XYClone and causes less damage to the blastocysts” than with their old micropipette method.

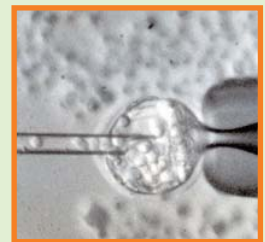
While they are currently using the XYClone primarily for blastocyst injection of embryonic stem cells, their goal is to use the XYClone in their nuclear transfer protocol in place of the piezo drill. Before the XYClone laser was released, the piezo drill was one of the only non-chemical zona breaching options available to laboratories. However, the piezo drill is not only difficult to use, but it also usually requires the use of mercury, an extremely hazardous substance. With the XYClone, operation is both easy and safe. The research team particularly likes the “precise targeting of the laser and the hands-free foot pedal” of the XYClone.



Of their experience with Hamilton Thorne, Hochgeschwender, Bui, and Hunnewell say, “the sales manager, Kathy Bradley, was outstanding; she came out to our lab to demo the XYClone, went out of her way to answer our questions, and then came back to install the system after we purchased it. We are confident that we will get help if we were to encounter a problem.”

[Our thanks to Kathy Bradley, HTB, for recommending OMRF for the Customer Profile. If you would like us to profile one of your customers, please email Cynthia Rodzen at [crodden@hamiltonthorne.com](mailto:crodden@hamiltonthorne.com). Please include information on the type of system installed, the focus of the facility, and how we may contact them.]

The **Molecular, Cell and Developmental Biology Program** focuses on the fundamental biological processes in cell growth and development that underlie human disease. Researchers within MCDB are developing and using cutting edge technologies including advanced light microscopic imaging and functional genomic analysis in manipulable genetic model systems, particularly *C.*



*elegans* and the mouse. These modern tools are applied to a variety of basic biological problems: chromosome behavior during mitosis and meiosis, molecular signaling pathways of the pituitary, synaptic transmission at neurons, muscle differentiation and development, cell motility and intracellular organelle movement, and horizontal gene transfer among bacteria. The findings obtained by MCDB members have clear and important applications in many human health issues including cancer, birth defects, obesity, diabetes, antibiotic resistance and mental disease.