# Erasmus MC, The Netherlands

## Erasmus MC University Medical Center Rotterdam


*"Improved 3D visualization of the first trimester of pregnancy could ultimately result in a new era of embryonic medicine."*

*Christine Verwoerd, MD, PhD Erasmus MC University Medical Center Rotterdam*

The Erasmus MC University Medical Center Rotterdam is the largest of its kind in Europe, and uses the latest technologies to help advance research that could significantly improve or even save lives. To aid in displaying the large amounts of biomedical data involved in such research endeavors, the Erasmus MC needed the right visualization.

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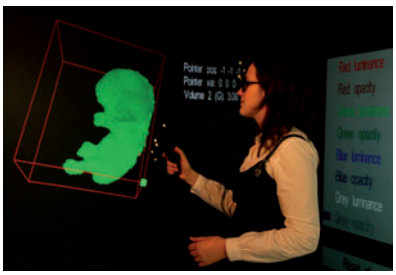

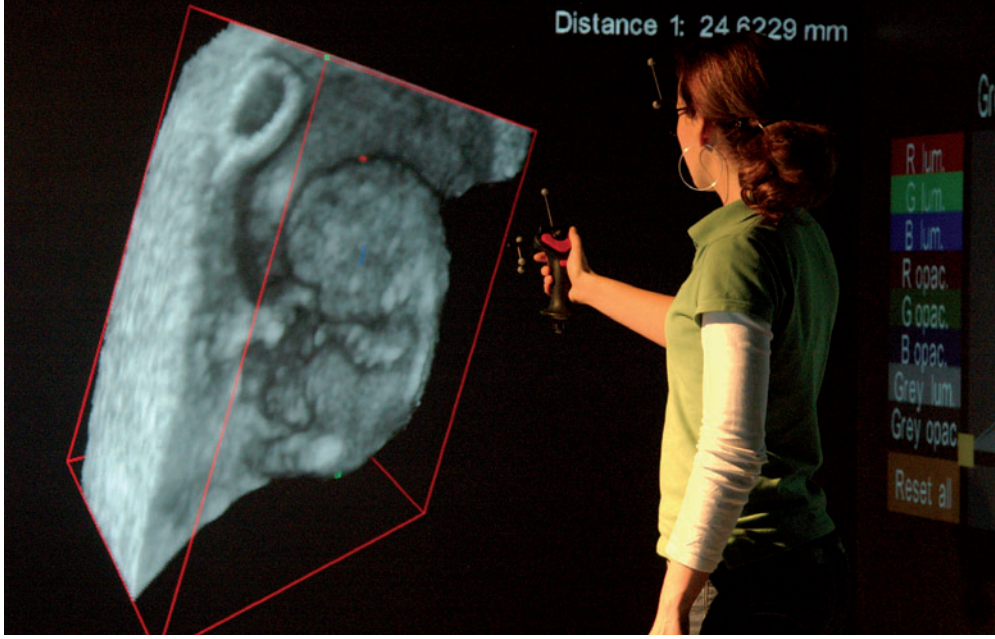


## Immersion in medical data

Erasmus MC opted for a Barco I-Space system, which "immerses users in a three-dimensional virtual environment that allows them to perceive depth and interact with the volume rendered data in an intuitive manner," says Christine Verwoerd, MD, PhD Erasmus MC University Medical Center Rotterdam.

Officially opened by Rotterdam's mayor upon completion, the I-Space at the Erasmus MC consists of eight high-resolution projectors that together create the 3D environment needed for its research. It's been in operation for several years now, and has clearly yielded a lot of benefits for Erasmus MC. "We've been using the system for a variety of purposes," comments Mrs. Verwoerd, "which includes reproduction of biometric and volume measurements, provision of normative data for gestation, and evaluating its applicability for research into embryonic and foetal malformations."

"The first 10 weeks of pregnancy are of great importance for the developing embryo. Solid comprehension of human embryogenesis will eventually allow for early detection of any abnormalities, for instance in the case of recurrent miscarriages or pregnancies with chromosomal abnormalities. Imaging was essential in the classical descriptions of human embryology, but it was only in the early 1980s that the first attempts were made to construct 3D images from ultrasound recordings of foetuses," adds Mrs. Verwoerd.


## On par with life-critical standards

To generate the immersive environment needed for a convincing depiction of the sensitive data the Erasmus MC works with, the Barco projectors employ a number of optimizations that render the composite image seamless and free of color or light disturbances.

"Barco's I-Space VR system is unique in its ability to view and measure the third dimension, and its tracing function allows for complex measurements. In just two studies, we successfully established the reproducibility of both biometric and volume measurements. We now know that research in virtual reality yields results just as reliable as traditional research," says Mrs. Verwoerd, "Improved visualization of the first trimester of pregnancy contributes to a shift of prenatal diagnosis of many congenital abnormalities, and could ultimately result in a new era of embryonic medicine."

Ref. no. R000000SST0909R000



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