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## **LABORATORY -- SIU Fertility and IVF Center, SIU School of Medicine**

The SIU Fertility and IVF Center, including its laboratory areas, is an ideal physical setting with state-of-the-art equipment. Only a few other programs in the country have comparable environments and none of these have the additional patient securities that are incorporated at SIU.

### **Construction and Design**

The laboratory areas were designed and built from the ground up with the goal to provide patients with a sterile, secure environment for their gametes (eggs and sperm) and embryos and the best technology available to ensure success.

- The design and construction phases encompassed great attention to detail. All construction and finishing materials were reviewed and only those approved as non-toxic were used.
- A ventilation system was specifically designed for the laboratory and procedure room to achieve a Class 1000, or near-clean room status (higher than hospital operating rooms).
- The primary contractors were Renaissance Architects, Inc., United Constructors, Inc., R.J. Power Plumbing and Heating, Progressive Electric, and Johnson Controls, all of Springfield, and engineers from BRiC Partnership, Belleville.

### **Sterile Embryology Laboratory**

- LED lights of special wavelengths that are not toxic to embryos have been installed in the ceilings, to keep the lighting levels low during delicate procedures. No other laboratory in the country has implemented this lighting strategy.
- The best equipment was selected from around the world. This includes nine incubators from Scotland, sterile hoods from Denmark, software from England, cryogenic equipment from Australia and vibration-free tables from the U.S.
- An FDA-approved directional computer-controlled laser that uses cutting edge robotic technology laser ablation to assist in removal of the protein coat surrounding the embryo prior to transfer. Other programs use less precise techniques to perform this procedure.
- The newest technology in micromanipulation has been incorporated into the laboratory to ensure smooth, efficient intracytoplasmic sperm injection and embryo biopsy for pre-implantation genetic diagnosis.
- A special epoxy floor has been installed to help maintain sterile conditions.
- There is continuous monitoring of the lab environment, incubators, freezers and refrigerators. Laboratory personnel are instantly notified 24-hours a day if a piece of equipment exceeds pre-programmed limits.

### **Identification Software**

Unique to the SIU Fertility and IVF Center is the incorporation of IVF Witness throughout a couple's treatment, providing accuracy and peace of mind to both the IVF unit and patients.

- IVF Witness uses harmless radio frequency identification technology to ensure that there are no errors or mismatching of specimens during the IVF process.
- Patients are given an identification card that contains their information. The identity of the patients is automatically stored onto each piece of labware throughout the IVF procedure. This continues until the resulting embryos are transferred to the mother, or cryopreserved for future transplantation. If incorrect samples are brought into the work area, IVF Witness alarms staff both audibly and visually.
- Every step of the IVF procedure is recorded and stored onto a PC. Additionally, the report is stored in the patient file as well as given to the patient.