SEARLES ON SIMULATION:  
Upstate Leads Internationally in Perfusion Simulation Training

Perfusion educators from 12 European countries gathered in Berlin, Germany in December to hear Upstate’s Bruce Searles on how to integrate operating room (OR) simulation training into the perfusion curriculum—a cutting-edge trend. A 1993 alumnus and chair of the Cardiovascular Perfusion Department, Searles implemented this nation’s first high-fidelity Orpheus Perfusion Simulator Laboratory last summer in Silverman Hall, and is a foremost expert on its advantages for student practice.

The Orpheus lab functions as a complete patient substitute for the training of perfusionists in the use of the heart-lung machines and other related equipment that are essential to conduct cardiopulmonary bypass procedures, such as open heart surgery. “Using this simulator is so realistic that our students are not simulating bypass, they are doing bypass on a simulated patient,” said Searles.

To the invitation-only delegation at the Berlin Heart Institute, Searles advocated the high value of simulation training in perfusion education because it holds several advantages over solely offering operating room experiences to students.

“First, it’s a better way of teaching,” said Searles. “This simulation training is first and foremost student-focused, whereas, the OR is centered and directed, as it should be, on the patient. All standards of care must be met and no mistakes made in the operating room, so the student cannot be allowed mistakes there and learn from them.”

Because the simulation experience is controlled by the instructors, it can also be tied directly to the current lecture topic, added Searles. “If the lecture is about coronary artery bypass grafting that week, the student may not see that procedure performed in the OR for weeks, but with the simulator, we can provide that experience simultaneously—synchronizing the didactic with the clinical.”

“Another advantage is that our highly trained instructors can create a set of standardized, objective criteria for what is acceptable and unacceptable performance in the simulator for teaching and student evaluations.” A final benefit is providing exposure to low volume events frequently, so that the student gains direct experience with such rare situations as misplaced arterial cannula or oxygenator failure.

“Of the 17 perfusion education programs in the US, three have started using high-fidelity simulators,” noted Searles, “and throughout Europe, there are only 2 fully functional perfusion simulation facilities (at this writing).”