What do you usually think about when you’re driving? The weather, the traffic, the annoying morning radio deejays? What you probably don’t think about is driving itself, the complex mechanics of steering and braking, the rhythm of watching traffic from all angles. The actions that constitute “driving” are so deeply engrained that they rarely penetrate your conscious thoughts, even though the stakes can be high if you don’t perform them correctly.

Now think back to the very first time you got behind the wheel of a car. You probably studied hard to prepare yourself for that moment, watching videos in driver’s education class and memorizing the manual of traffic rules. But even if you aced your written driver’s test, nothing truly prepared you for the mental and physical experience of navigating a 3,500-pound vehicle through high-speed traffic. Those first few times on the road, you were acutely aware of every acceleration and turn—yet you were far more likely to make a serious mistake than you are now as an experienced driver.

In medicine as in driving, there’s no substitute for practical experience. That’s why the greeting on the Web site for the Peter M. Winter Institute for Simulation Education and Research (WISER) is a quote from the Chinese philosopher Confucius: “I hear and I forget. I see and I remember. I do and I understand.” WISER is one of the world’s leading academic medical simulation training centers, specializing in the creation of extremely realistic scenarios in which medical students and other health care professionals at all career and training levels can safely learn, practice, and perfect crucial procedures before performing them on actual patients.

Equipped with the latest in computer technology and mannequin simulators, the 12,000-square-foot WISER facility allows students to achieve mastery through repetition of medical procedures. “WISER can get people ready so they can avoid making mistakes,” says Paul L. Rogers, M.D., professor of critical care medicine, professor of medicine, and director of a number of student simulation courses. “We’re trying to teach them to be unconsciously competent, to take them to a level where they automatically know what to do and how to react in a critical situation. And we don’t stop practicing until every single student gets to that level.”

All Pitt medical students spend a minimum of 25 hours in simulation training activities, and two-thirds of them opt for additional elective time to develop mastery of resuscitation, defibrillation, auscultation, and other clinical skills. The following scenarios illustrate what medical students can experience in just 15 minutes at WISER.
"WE'RE GOING TO GIVE YOU SOME OXYGEN TO HELP YOU BREATHE, OK, SIR?"

The patient is extremely short of breath, has an elevated heart rate, and is hypotensive.

10:00 AM
Ryan checks on the placement of the monitor attachments.

10:07 AM
Ryan Brannon concentrates on the correct placement of an endotracheal tube after the patient stops breathing entirely.

10:12 AM
If intubation doesn’t work, the next step is an emergency airway puncture.

10:15 AM
Ryan focuses on his patient.
"As team leader, you have to practice making sure you assign specific responsibilities to specific people and give them specific instructions. It’s up to you to close the loop."

10:37 AM
Team leader Candace Jones, hoping for an improvement in the patient’s vital signs, checks the monitor.

10:42 AM
Two of Candace’s team members continue cardiopulmonary resuscitation...

10:45 AM
... by providing ventilations and chest compressions.

10:50 AM
The readings on the wall-projected monitor indicate the patient’s return to cardiac stability as Shilpa Patel, part of the hastily assembled code team, listens to feedback from the scenario facilitator.
“WE HAVE TO INTUBATE. I NEED A NO. 4 MAC BLADE, A NO. 8 ET TUBE WITH A STYLETTE, AND A 10CC SYRINGE.”

THE PATIENT, A CAR ACCIDENT VICTIM, IS UNRESPONSIVE AND HAS NO PULSE.

11:02 AM
Observing classmates get caught up in the drama as ECG monitors are attached to the patient.

11:06 AM
Marcus, the exercise leader, monitors his teammates during the intubation.

11:09 AM
Animesh Sabnis watches as a colleague feels for expiratory air, while Marcus Hoffman listens to the stomach to rule out accidental insertion of the breathing tube into the esophagus. Candace Jones is ready with the ventilator tube connector.

11:13 AM
A live video feed provides SimMan’s operator with an unimpeded view of the action, which is recorded for later student review.
“I ALREADY KNOW HOW TO MEMORIZE MATERIAL FROM A BOOK. THIS COURSE HAS TAUGHT ME HOW TO THINK ON MY FEET.”

11:24 AM
With the help of a wig and a few interchangeable parts, SimMan can become SimWoman.

11:32 AM
Flexible joints allow this SimMan, one of 22 patient simulators used at WISER, to “relax” in a hallway chair.

11:47 AM
Follow-up discussion reinforces the learning process.

11:35 AM
Paul Rogers, M.D., heads out to debrief the students at the end of the session. The WISER facility was specifically designed to allow facilitators to simultaneously instruct students and relay moment-to-moment changes to the scenario operator.