

THE NEXT BEST THING to REAL

FOR SIMMERION, TRAINING FIRST RESPONDERS
IS MORE THAN A GAME



An adult patient comes into a crowded hospital emergency room in the midst of flu season, presenting with chicken pox-like symptoms. In the rush, the attending doctor forgets to ask a few critical questions. When did the symptoms begin? Did the patient have chicken pox as a child? He also doesn't think to palpate the stomach. As a result, what could become a smallpox epidemic is overlooked, with potentially catastrophic consequences.

“The difference between two and four days in a biological event makes a big difference,” said Laura Humm, chief operating officer of SIMmersion, a Maryland company which has spent nearly two decades developing interactive simulations for a broad range of applications for first responder, law enforcement, healthcare providers, and a variety of other fields.

Through a Small Business Innovation Research (SBIR) contract with the U.S. Army’s Medical Research and Materiel Command (USAMRMC), SIMmersion developed an interactive simulation to help first responders react to scenarios like the one described above, as part of an effort to address critical chemical, biological, radiological, and nuclear events. When using their training, learners interact with videos of trained actor playing a patient, helping them distinguish between chicken pox and conditions such as smallpox and Marburg hemorrhagic fever, asking questions and performing virtual medical exams.

The simulations are powerful training tools, according to Dr. Dale Olsen, the company’s president and CEO, because of the real-time responses they provide, reinforcing training and making extreme scenarios such as bioterrorism and suicide threats real. “The key is practice with feedback, which is proven in research to build real skills in the field,” Olsen said.

Learning how to interact with patients in a potential mass casualty scenario is very different from learning how to fire a rifle, but they do have one thing in common, Olsen added. In both cases, traditional training methods—videotapes and role-playing with coworkers—aren’t particularly helpful.

“If I’m going to teach you to become a marksman and I show you 500 hours of video of people shooting guns, that’s not going to help you,” he said.



Role-playing scenarios also rarely work because coworkers posing as patients are often no better trained in the specifics of the situation than those being trained—and no one involved “wants to look stupid.”

Olsen began his work with training simulations in the 1990s, while working at the Johns Hopkins University

Applied Physics Laboratory. He developed an early simulation system which trained new agents at the Federal Bureau of Investigation how to conduct basic criminal investigation interviews, interacting with a videotaped character named Mike Simmen to identify efforts at deception. The simulation has been deployed more than 30,000 times and led to demand for other interactive training simulations, including training to help Army chaplains work effectively with suicidal soldiers.

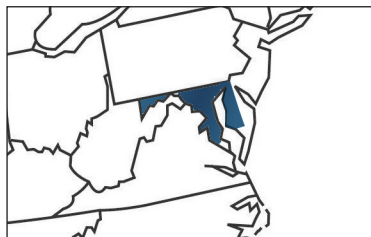
In 2002, Olsen licensed the simulation technology he developed from the university and launched SIMmersion. But the newly created company faced daunting challenges as it modernized the software driving its simulations. The company needed to pioneer a market for a new type of technology that had not seen before.

“We had lessons to learn and skills to build as we created additional simulations and developed the technology,” he said.

In 2006, SIMmersion received the SBIR award from USAMRMC, and worked closely with the National Capital Area Medical Simulation Center and the Henry M. Jackson Foundation to bring its simulation technology up to date. The SBIR funding provided

the ability to develop more interactive simulation technology and refine it for specific scenarios, as well as to conduct research studies on the impact of the training that helped give the company’s simulations greater credibility in the field.

Following the end of the initial SBIR contract in 2009, the improved, research-backed technology paved the way for SIMmersion to receive funding from a wide range of government agencies.





Dr. Dale Olsen, president and CEO of SIMmersion: “We are contributing to a lot of different communities and saving lots of lives.”

The SBIR award also helped SIMmersion learn how to integrate educational material—specific training and lessons—directly into the simulations at appropriate times, said Humm. “It really honed our skill in creating a training package beyond a simulation that included all three elements—knowledge acquisition, practice, and comprehensive feedback.”

The SBIR also charted a path forward for the small company. “It taught us what products had marketability,” Olsen said. “It was transitional as we were trying to spin out as a separate company without a huge organization behind us. It really helped us get moving.”

Following the end of the initial SBIR contract in 2009, the improved, research-backed technology paved the way for SIMmersion to receive funding from a wide range of government agencies. The company has since been awarded nearly a dozen contracts from the National Institutes of Health and two additional SBIRs from the Department of Defense, as well as a contract from the Centers for Disease Control.

Today, SIMmersion’s government and private sector clients include major retailers, the FBI, Mayo Clinic, Kaiser Permanente, a broad range of universities and law enforcement agencies, and the National Institutes

of Health. The National Suicide Prevention Center uses its simulations to train personnel manning the national suicide hotline. Its simulations cover scenarios faced by law enforcement, healthcare, drug counselors, social workers, and medical personnel, and have received positive feedback from the professionals using them.

“Officers accepted the virtual reality training and were impressed with it,” James W. Parlow of Winona University said of a simulation conducted with Minnesota law enforcement officials. “One officer commented that this was ‘a video game for cops rather than about cops.’ At the conclusion of the training session, officers stated that the techniques would assist not only in their interviews with suspects but also in everyday conversations and field inquiries.”

Ongoing contracts are funding research that may touch even more lives. For example, SIMmersion technology was part of a research study conducted by Yale and Northwestern University to assess whether simulated job interviews could help people with mental illness, including veterans suffering from post-traumatic stress syndrome, obtain employment. Study subjects who used the training improved their interview skills and increased their confidence. The research showed that those who used the simulation were nine times more likely to be given a job offer as compared with subjects who did not.

“We are contributing to a lot of different communities and saving lots of lives,” said Olsen. 🌟

SIMmersion, LLC

Modernization Priority: General Warfighting Requirements (GWR)
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for First Response to Chemical, Biological, Radiological, Nuclear Events

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