



Laura Wallace
SensAble Technologies, Inc.
781-939-7437
media@sensable.com

Mary Kae Marinac
MKM Corporate Communications
978-685-3136
mkm@mkmarinac.com

Aaron Oliker
BioDigital
201-248-0373
aoliker@biodigital.com

FOR IMMEDIATE RELEASE

NYU Langone Medical Center and BioDigital Teach Lung Cancer Surgery Skills by “Feel” Using SensAble’s Haptic Devices in First Thoracic Surgery Simulator

*Touch-Enabled Simulator Debuts Today, Teaches Minimally Invasive
VATS Lobectomy Skills by Incorporating Realistic “Feel” of Local Anatomy*

NEW YORK, NY and WOBURN, MA June 23, 2010 – [SensAble Technologies](#), a leader in [haptic devices](#) and 3D modeling solutions, announced that its customer, [BioDigital](#), working in partnership with surgeons at [NYU Langone Medical Center](#), has created the first medical simulation application for teaching residents the high-technology procedure for lung resection of the right upper lobe, most commonly performed to treat resectable lung cancers. The BioDigital RULR (Right Upper Lobe Resection) Cognitive Task Trainer provides residents in NYU Langone’s cardiothoracic surgery department with a safe yet highly realistic method of learning the precise feeling of a video-assisted thoracoscopic surgery (VATS) lobectomy. This minimally invasive procedure offers faster recuperation time, yet requires the surgeon to operate with limited visibility inside the chest – amplifying the potential for surgical complications.

With severe limits on resident duty while hospitals strive for improved patient outcomes, touch-enabled simulators allow trainees to ‘practice to perfection’ on computers, with zero risk to patients and the ability to acquire skills that can only be learned by feeling. Funded in part by the Society for Thoracic Surgeons (STS) and its Thoracic Surgery Foundation for Research and Education (TSFRE), the simulator is showcased at this week’s [Western Thoracic Surgical Association \(WTSA\)](#) annual meeting in Ojai Valley, CA.

VATS lobectomies have replaced traditional open lung surgery in the past decade, but the limits of visibility complicate resident training. Peering through a 3D stereoscopic viewer while holding a surgical scope, residents must know with certainty the “feeling” of the local anatomy in order to avoid collisions that might harm the patient. Practicing on cadavers or cadaveric organ blocks is costly and allows only one-time use; and, initial supervised learning-by-doing requires senior medical staff and operating room time that is increasingly in short supply.

“It’s impressive how surgeons learn when combining visual and factual information, with a sense of touch,” said [Dr. Eugene Grossi](#), professor of cardiothoracic surgery at NYU School of Medicine and the director of cardiac surgery research at the NYU Cardiac

and Vascular Institute. “With haptics in a simulator, we can train residents to operate within a ‘closed environment’ they encounter in any number of minimally invasive and endoscopic procedures. For instance, residents literally feel what it’s like to move a scope up and over the lung to reach the critical anatomy, but not to damage a vital structure. They can practice on unlimited anatomical variations that they might only rarely see in the operating room – but now, with a simulator, they’ll be prepared for these scenarios in advance.” Dr. Grossi adds, “Equally important is the ability of the simulator to gather quantifiable data to assess the resident’s skill level and the progression of their training”

BioDigital’s RULR simulator teaches the identification of structures such as the right pulmonary artery, superior and inferior pulmonary veins, and the right pulmonary ligament, combining visual representation and tactical feel. The student learns and practices proper placement of the camera port, dissector port, and stapler port. After reaching a level of mastery, the trainee is given six different types of anatomic pathology that range from the most typically occurring to rare. Because the simulator is computer based, it provides a consistent, quantifiable metric of competence. It allows residents to train in off-hours, at their convenience, and repeat modules until mastery is achieved.

With only an estimated 20 percent of thoracic surgeons having expertise in the VATS lobectomy procedure, the simulator also offers follow-on applicability for training and certifying practicing physicians.

“The BioDigital Human virtual surgery platform integrates SensAble’s [PHANTOM® haptic devices](#) and [OpenHaptics® 3.0 programming tool kit](#) for an unprecedented experience in cognitive and tactile virtual surgery training,” said Aaron Olikier, partner and director of 3D technology at BioDigital. “SensAble’s haptic devices, and particularly its OpenHaptics 3.0 programming tool kit, allowed us to accurately reproduce the feeling of moving and manipulating the surgical tools within the patient’s anatomy – and the flexibility to tailor the tactile experience in follow-on training solutions,” Olikier said.

“The BioDigital Human platform can replicate almost any type of surgical procedure in a realistic interactive 3D virtual environment. It supports additional medical simulation and training applications, beyond thoracic surgery including craniofacial, breast reconstruction, dental, and cleft-lip and palate surgery. We are pursuing field validations to further expand its applicability,” Olikier said.

“The case for touch-enabled, computer-based medical simulators is compelling, and BioDigital’s work with NYU Langone Medical Center demonstrates why,” said Joan Lockhart, vice president of marketing for SensAble Technologies. “Using haptically-enabled simulators, medical centers can provide a more accessible and objective training experience with zero risk to patients – with the goal of better surgical outcomes. It’s gratifying to see this product supported by esteemed surgical societies.”

BioDigital and its NYU Langone surgical partners also will be offering the use of the BioDigital RULR simulator at the national residency training forums this summer to teach the skills that can be learned from such touch-enabled cognitive task trainers. More

information is available by contacting BioDigital at <http://www.biodigital.com/> or by calling 212-226-0326.

About BioDigital Systems LLC

BioDigital is dedicated to using state of the art biomedical visualization systems to improve training, education, data capture and analysis. From 3D animation, to immersive virtual training environments, to systems that intuitively store and visualize medical data, BioDigital's products and services promise to revolutionize the way we understand medicine. Since 2002, BioDigital has helped a wide range of healthcare clients visualize medical subjects, and in turn, improve patient care. Located in Manhattan, our team of software engineers, digital artists, and physicians benefit from close affiliations with prominent New York hospitals.

About SensAble Technologies

Founded in 1993, SensAble Technologies is the leading developer of 3D touch-enabled (force feedback) solutions and technology that allow users to not only see and hear an on-screen computer application, but to actually “feel” it. With 41 patents granted and over 8,000 systems installed worldwide, SensAble Technologies' haptic technology is being used in applications ranging from designing toys and footwear, to surgical simulation and stroke rehabilitation, to dental restorations, as well as a range of research and robotic applications. The company markets its own 3D modeling solutions as well as its haptic devices and developer toolkits to medical, dental, design, and manufacturing companies; educational and research institutions; and OEMs. SensAble products are available through direct and reseller channels worldwide. www.sensable.com.

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