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Terumo Initiates Vulnerable Plaque Program with Exclusive License from Massachusetts General Hospital

SOMERSET, NJ—Terumo Corporation announced today that it has entered into development and license agreements with Massachusetts General Hospital (MGH) in Boston relating to an intravascular imaging technology used in the diagnosis and management of coronary artery disease.

Known as optical frequency domain imaging (OFDI), the technology is a light-based imaging modality that can be used to examine tissues in vivo with near histological resolution and sensitivity. Infrared light is delivered to the imaging site through a single optical fiber integrated within a catheter. The OFDI imaging catheter containing a complete lens assembly can be independently deployed, or integrated into existing therapeutic or other imaging catheters. Advanced algorithms are used to extract the reflected optical signals from the infrared light used in OFDI to provide real-time cross sectional and 3-dimensional images. The technology was invented and developed in the Wellman Center for Photomedicine at Massachusetts General Hospital.

Under the agreements, Terumo has an exclusive license covering development, manufacturing and worldwide commercialization rights to products derived from OFDI technology. MGH will receive a development grant, upfront fees, progress dependent milestone payments and royalties on net sales of any resulting products. Financial terms were not disclosed.

"This agreement gives Terumo a dynamic new platform from which we plan to derive a number of intravascular imaging systems," said Koji Nakao, director and managing executive officer. "And our world class interventional catheter development and manufacturing capabilities create substantial synergy for this program."

Acute myocardial infarction (AMI), commonly known as a heart attack, is the principal cause of death in the industrialized countries. While the accumulation of hard plaque in the coronary arteries may produce severe obstruction and subsequent angina, clinical data has shown that in most cases the underlying cause of an AMI is the development and rupture of soft, lipid-rich atherosclerotic ("vulnerable") plaque. Vulnerable plaques are difficult to detect using current imaging modalities.

A key promise of OFDI is its potential for in vivo visualization of coronary artery microstructures, particularly as a tool to better understand and diagnose vulnerable plaque, and guide appropriate therapy. "The inherent capability for ultra-high resolution with this technology has shown exceptional potential in this area," added Ken McDonnell, general manager for business development. "We intend to use the OFDI technology to capitalize upon this evolving area of vascular medicine."

Rox Anderson, MD, director of the Wellman Center for Photomedicine at the MGH, said he is pleased that this agreement will enable the technology to be further developed so it can help an increasing number of patients. "OFDI lets us see so well and so fast during catheterization that it almost feels like being inside a coronary artery," he said. "This technology is better than ultrasound, much faster than previous optical

techniques, will advance our understanding of cardiovascular disease, and could ultimately save many lives."

OFDI was created by three scientists from the Wellman Center for Photomedicine: Brett Bouma, PhD, Gary Tearney, MD, PhD, and Johannes de Boer, PhD, who are all expected to play key roles in the future development of this technology. The development and refinement of OFDI also has benefited from seed funding from the Center for Integration of Medicine and Innovative Technology (CIMIT), a consortium comprised of the MGH and other Harvard Medical School teaching hospitals, along with the Massachusetts Institute of Technology and Draper Laboratory.

John A. Parrish, MD, director of CIMIT, called the agreement a "visible sign of the power of collaboration," adding that bringing together scientists, engineers and clinicians to improve patient care is the mission of CIMIT. "When industry, academia, licensing and facilitation experts create a nurturing environment for the focused work of teams of superstar technologists and clinicians, then everybody wins—especially patients of the future."

About Terumo Corporation

Terumo Corporation, headquartered in Tokyo, Japan, is a worldwide developer, manufacturer and marketer of a broad range of medical devices serving healthcare providers in over 150 countries. The company, with annual revenues of $2 billion, is a leader in interventional cardiology and radiology devices, including the Glidewire® hydrophilic coated guidewire. Terumo is building on its expertise in interventional devices to provide products that make possible life-saving, minimally invasive procedures. Terumo— contributing to society through healthcare. For more information, please visit: http://www.terumo.com.

About Massachusetts General Hospital

Massachusetts General Hospital, established in 1811, is the original and largest teaching hospital of Harvard Medical School. The MGH conducts the largest hospital-based research program in the United States, with an annual research budget of more than $400 million and major research centers in AIDS, cardiovascular research, cancer, cutaneous biology, medical imaging, neurodegenerative disorders, photomedicine and transplantation biology. In 1994, MGH and Brigham and Women's Hospital joined to form Partners HealthCare, an integrated health care delivery system comprising the two academic medical centers, specialty and community hospitals, a network of physician groups, and nonacute and home health services.