

CIMIT – Johnson & Johnson Young Clinician Research Recipient: Daniel S. Kohane, MD, PhD, Massachusetts General Hospital, Seeks to Improve Care for Infants on Breathing Tubes

Boston, Mass., May 1, 2006 -- It was announced today by John A. Parrish, MD, director of CIMIT, that Daniel S. Kohane, MD, PhD, Massachusetts General Hospital, will be among the first of the new CIMIT-Johnson & Johnson Young Clinician Research recipients. The funding was made possible through Johnson & Johnson's Corporate Office of Science and Technology (COSAT).

Dr. Kohane, a staff intensivist in the Pediatric Intensive Care Unit at MGH and an assistant professor in pediatrics at Harvard Medical School, is proposing to develop controlled release technology to prevent problems with airway constriction in infants who have had breathing tubes.

"Premature babies and other children who suffer injury to the airway from breathing tubes or other causes often require repeated procedures to repair the damage," said Dr. Kohane. "Our principal hypothesis is that providing sustained high local drug levels will be therapeutic and minimize systemic side effects of some drugs commonly used in these conditions. The devices we are proposing to develop would apply various forms of controlled release technology to these problems. They could be administered by minimally invasive methods or be placed directly in the site at the time of surgery."

Dr. Kohane, who received his MD and PhD from Boston University School of Medicine, is a Visiting Scientist at the Langer Laboratory, in the Department of Chemical Engineering at MIT.

Wide Application Potential

One ultimate goal for Dr. Kohane is the development of drug-eluting stents or endotracheal tubes that would release drugs to treat or perhaps even prevent the problem. The technology would also be applicable to a range of clinical problems that are encountered in the OR and ICUs, where focal drug delivery is desired, such as papillomatosis, post-extubation stidor, croup, bacterial infections, and many others.

Preventing future problems

Jay Schnitzer, MD, CIMIT Liaison to MGH noted: "Tracheal stenosis occurs in 1-8 percent of neonates after prolonged intubation. And 70 percent of pediatric tracheal surgeries are for tracheal stenosis. After surgery there is a high rate of restenosis resulting in repeat procedures. Dr. Kohane's contribution will help many affected children including those who also commonly require prolonged tracheal drainage tubes. For these children there are the attendant risks of further tracheal scarring, infection, pneumonia and developmental delay due to the inability to speak."

Dr. Parrish States Award Goal

"With this award, we were looking to attract innovative clinicians in the Boston area, passionate about patient care and willing to dedicate part of their time for translational research," said Dr. Parrish. "It is our mission to accelerate the work of physicians who stay awake at night thinking about how to solve complex medical problems using minimally invasive technology."

Dr. Parrish noted: "I am pleased that Dr. Kohane was selected for his work. It will have a lasting impact on pediatric care, and it has broader application possibilities."

CIMIT: Overcoming Barriers to Innovation

CIMIT is a Boston-based research consortium of the major teaching hospitals and engineering schools dedicated to advancing the standard of patient care through collaboration and development of novel technologies and therapies.

Each year CIMIT selects some 40 new research projects from multidisciplinary teams to receive science awards ranging from \$25,000 to \$250,000. There are 150 active projects from more than 300 awarded to date. Additionally there have been 400 peer-reviewed publications. CIMIT-supported projects have led to the formation of 170 invention disclosures, 80 patent applications, and 30 options and license agreements. Ten small businesses have been created or strategically impacted by CIMIT technology. With enabled funding of more than \$120 million, CIMIT has significantly impacted the standard of care.

As part of CIMIT's Award Program, its Office of Technology Development and its Industry Liaison Program help investigators overcome hurdles in business, law, intellectual property protection, and product development. This team of experts enables investigators to rapidly move ideas from bench to bedside.

About Massachusetts General Hospital

Massachusetts General Hospital, a founding member of CIMIT, was established in 1811. It is the original and largest teaching hospital of Harvard Medical School. MGH conducts the largest hospital-based research program in the United States, with an annual research budget of more than \$450 million.

