

## Vision 2012 — Big Ideas, Great Innovation, 'Grand Slam' Awards

Director John Parrish, MD, recently unveiled a dynamic plan for future growth, and his Vision 2012 promises to speed medical innovation by backing outstanding projects with extra financial support and increased facilitation from senior staff.

"We live in an exciting time, a renaissance period for medical research," said Dr. Parrish. "CIMIT is at the epicenter of this country's great institutions and brilliant minds, and I am determined to increase our efforts to develop these resources to produce better medical solutions."

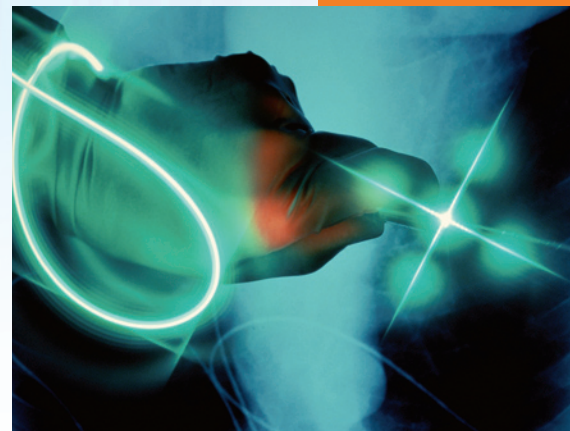
**We live in an exciting time, a renaissance period for medical research.**

The new initiative calls for attracting and rewarding high risk-high gain projects with extra support. CIMIT will identify outstanding proposals, and provide enhanced funding and concentrated facilitation to accelerate success.

"We will be stepping up the pace to find exciting, novel ideas that could result in better medical care," Dr. Parrish said. "We have some of the best clinical and engineering minds in the country right here. CIMIT is a place where they can find each other, build research collaborations and create amazing new devices and techniques."

In general, CIMIT will begin looking for proposals having a two to four-year horizon from "idea to hand-off."

CIMIT will also increase its investment in people, offering expanded career development awards and more fellowships for graduate students. Some awards will be for two years.



Specifically, CIMIT will be seeking out a few proposals for high-level status. These Big Ideas should target an unmet clinical need or have a dual use application, such as meeting both soldier and civilian medical needs.

These big projects would qualify for extra funding, over and above the usual smaller grant awarded annually by CIMIT. A search committee to identify promising ideas will be headed by Tom Brady, MD, director of MGH radiology research and a CIMIT Program Leader.

"We're looking not just to hit home runs but grand slams," said Dr. Parrish. "I know the ideas and talent are out there, and we promise to add a full complement of our facilitation expertise to help these projects succeed."

Vision 2012 calls for more involvement of CIMIT facilitators. Also, greater efforts will be made to develop strategic alliances with foundations, industry and potential investors.

The visionary blueprint, to be finalized in coming months, also calls for creation of a Living Data Repository that would serve as a searchable archive for CIMIT projects past, present and future. ■

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► **Catalyst.** *A catalyst accelerates change. It makes things happen. By helping connect practicing clinicians with engineers, technologists and industry, CIMIT speeds up the pace of discovery. By awarding grants for ideas that others would not fund, CIMIT ignites the drive to move an idea from bench to bedside. By convening national and regional leaders, big ideas lead to breakthrough technologies. For those who are determined to cross the finish line, CIMIT helps advance the process by catalyzing the development of innovative technology for healthcare.*

FEATURE :

## Innovation Congress 2006 Attracts Record Attendance

The CIMIT Innovation Congress drew nearly 500 attendees over the two-day event, and marked the debut of the new Exploratorium created to showcase cutting-edge technologies developed in the research labs of CIMIT member institutions.

"We were pleased with the attendance, and felt that the discussions and technology demonstrations were superb," said Dr. John Parrish, director

Also recognized were donors William E. Braunlich and Warren B. Lammert, who are providing support through the Epilepsy Development Therapy

**"The beauty of CIMIT is that it has kept its eye on the future that is worth seeking."**

of CIMIT. "And we had exceptional keynote speakers who challenged us to do even more."

At the November 6-7 event, the CIMIT Image Guided Therapy team was honored with the fifth annual Edward M. Kennedy Award for Healthcare Innovation.

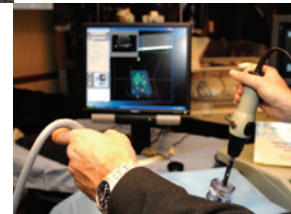
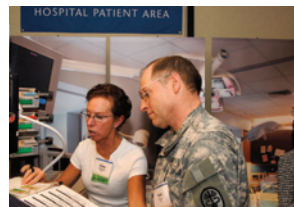
A new MIT/CIMIT Medical Engineering Fellowship of \$50,000 was awarded to Olumuyiwa Ogunnika, an MIT graduate student who grew up in Nigeria before studying at City College of New York.

The CIMIT Award for Outstanding Philanthropy was presented to Henry H. Meyer Jr.

Project for CIMIT's new program in neurotechnology.

A key feature of the conference was the CIMIT Exploratorium, a hands-on approach to investigation and demonstration.

On display were monitoring devices for the emergency department, and life-saving innovations on the battlefield for soldiers in early stages of trauma.



Harvey Fineberg, MD, PhD, president, Institutes of Medicine, and William Brody, MD, PhD president of The Johns Hopkins University delivered keynote addresses.

Concurrent sessions included "Robo-health in the Home," "Surgery Without Scars," "Optical Medicine," "Disaster Preparedness," "Cardiovascular Disease," and "The Role of Point-of-Care Technology in Patient Safety."

A panel discussion titled "Perspectives in Innovation" took up the question of whether blockbuster breakthroughs are still possible.

Panelists John Cullinane, chairman of LiveData Inc., and Ellen Zane, CEO and president of Tufts New England Medical Center, suggested that the technology exists to advance medicine but leaders must recognize and implement new tools.

Panelists said that embracing electronic recordkeeping in hospitals and medical centers would save money while providing better service to patients.

For more information about CIMIT 2006 educational sessions, visit [www.cimit.org](http://www.cimit.org). ■



IN FOCUS:

## CIMIT Facilitation Makes a Difference

CIMIT has always believed in the value of facilitation and now there is data to reflect that its investigators, site miners and researchers appreciate the organization's ability to "make things happen."

A recent CIMIT survey of 100+ investigators reported that close to 80 percent of respondents said they find "high value" in CIMIT's ability to link them with collaborators, direct them to valuable research opportunities, and help them make inter-institutional connections.

"The survey confirms what we have believed for a long time," said director John A. Parrish, MD "Investigators value the networking and professional connections made through CIMIT. We operate in a community of brilliant minds and great research institutions. We will continue our efforts to bring them together."

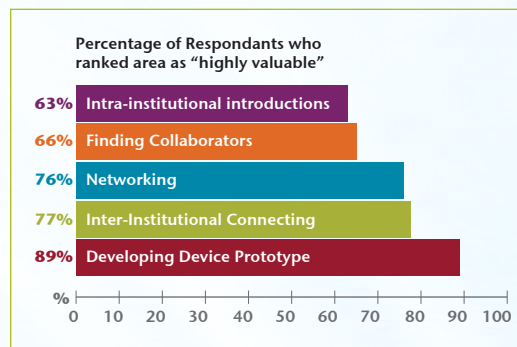
"Facilitation" can mean many things in the CIMIT lexicon.

It can refer to connecting project leaders with others who have complementary skills. Since the CIMIT family includes close to a dozen research institutions, facilitating professional relationships with scientists, clinicians and engineers from different communities has great value.

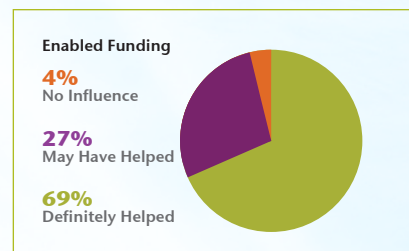
Facilitation can mean linking the research team with appropriate industrial resources. CIMIT has connections with many world-class device makers and IT development companies. Introducing a promising research team to an established industrial institution often accelerates a project. In addition, new businesses are launched during CIMIT collaborations.

**"It is rewarding to see that the survey results show that our project teams and individual researchers appreciate this outreach."**

Facilitation can describe coaching. Many clinicians and technologists lack the full complement of skills necessary to turn a research idea into reality. CIMIT has access to leading business professionals and regulatory experts, often bringing them together to help a project leader and the team overcome a stuck point in a research project.



Top 5 areas of CIMIT Facilitation as rated by survey respondents



7 in 10 investigators who received 2nd/3rd round funding by outside grantors reported the CIMIT award definitely helped in obtaining the grant

And facilitation can mean help with protecting intellectual property or seeking additional funding from external sources. CIMIT is a proponent of "early stage" ideas, but it often helps project teams prepare for situations that might arise during commercialization.

When asked to identify areas of greatest value to their work and careers, survey respondents gave their highest marks to "finding collaborators," "developing inter-institutional connections," and facilitating "intra-institutional introductions."

Other areas that received high marks were providing "access to industry" and "access to other clinical specialists."

"At CIMIT we believe in the power of facilitation," said Dr. Parrish. "Through the CIMIT Forum, and other convenings we connect technologists, clinicians and engineers whose work can benefit from collaboration.

"It is rewarding to see that our project teams and individual researchers appreciate this outreach." ■

## GUEST COLUMN :

# A New Paradigm for Learning

By Michael J. Davidson, MD

### Benefiting from a Career Development Grant

The past two years have been a whirlwind in cross-training. I am pleased to be the Catalyst's first guest columnist and write about a truly unique experience.

In 2004, I applied for a Career Development Award from CIMIT. Through the year-long fellowship, I gained new insight into the value of physician cross-training. I salute the wisdom and leadership of Brigham and Women's Hospital for embracing this new training paradigm for the heart surgeon of the future.

A cardiothoracic surgeon by training, this award gave me the opportunity to cross-train with the cardiologists and endovascular surgeons at BWH. Additionally, I spent a month at the Cleveland Clinic learning the use of branched and fenestrated aortic stent grafts.

The program provided training in relevant percutaneous techniques, including invasive cardiology and basic catheter techniques, coronary and valve interventions, and peripheral vascular interventions including aortic stent grafting.

The grant, underwritten by CIMIT and championed by Dr. Don Baim, provided me with mentoring in interventional cardiology and endovascular surgery.

This experience taught me a very important lesson — that great things are possible by knocking down historical barriers and embracing an interdisciplinary approach to patient care. In this rapidly growing field of catheter-based valve interventions, BWH is a pioneer in this new approach to cardiac care. Our surgeons and cardiologists now work side by side to achieve the best possible outcomes.

And today, we push the envelope even further by collaborating more closely on the development of novel therapies. I believe that the CIMIT-sponsored fellowship was an important first step in enabling this wonderful new approach.

Following the career development fellowship year, I was offered an appointment in the division of cardiac surgery at the Brigham. I am convinced that I was viewed as a strong candidate because of the experience I gained through the CIMIT-sponsored grant.

I continue to be actively engaged in training others in this interdisciplinary collaboration. Even more importantly, our surgeons and cardiologists now have the opportunity to spend time working in each other's environment.

I like to believe that I am giving back what I learned so that our colleagues — cardiologists and surgeons alike — can be more knowledgeable, collaborative and cooperative.

This makes for greater teamwork, more effective medicine and better outcomes for the patients we serve. ■

## COMPANY STORY :

# Radianse Shines After CIMIT Support

By Tamara Nazzal

Technology supported by CIMIT clinicians has emerged as a building block for a small Andover start-up that has been successful in placing its product with Massachusetts General Hospital and almost 30 other medical institutions nationwide.

Radianse Inc. has developed an indoor positioning system (IPS) that keeps track of equipment and people within a given facility using active-RFID and location technology.

Although CIMIT does not provide financial support to companies, it facilitates promising collaborations with investigators to advance patient care. Nat Sims, MD, an anesthesiologist and CIMIT-affiliated researcher at MGH, recognized powerful technology and worked with officials of the company in its nascent days.

"When we started Radianse, Nat Sims was one of the first people that we talked to," said Mike Dempsey, company co-founder and chief technology officer.

"CIMIT was literally the first institution to give us a shot. Through CIMIT, we joined the ORF team as industry collaborators."

CIMIT, through its Industry Liaison Program, assisted Radianse with obtaining its first SBIR. The company has raised about \$2 million in SBIR (Small Business Innovation Research grants) and close to \$17 million in venture funding.

### Intelligent alerts

Together with ORF investigators, Radianse has created additional applications for their technology including "intelligent alerts" that improve patient safety and increase efficiency. Dr. Julian Goldman, an anesthesiologist in the ORF, proved that the Radianse IPS could recognize a time-based association between patient and anesthesiologist in the induction area as the context for "start of anesthesia care."



## IN BRIEF :

### NeuroTechnology

A new program has been launched at CIMIT, with the help of the Epilepsy Therapy Development Project, to tackle neurological diseases like epilepsy. The program will be led by **Steven Schachter, MD**.

### Site Miners

**Joseph Bonventre, MD, PhD**, and **Fred Schoen, MD, PhD**, have been named as the CIMIT Site Miners for Brigham and Women's Hospital. They will act as liaisons between BWH and CIMIT.

### Science Awards

This year's CIMIT Science Awards drew more than 185 pre-proposals. Of these, over 100 were selected for further review and 37 were conditionally approved for award.

### Regulatory Affairs

Watch for weekly updates at [cimit.org](http://cimit.org).

## INSIGHTS :

### By John Parrish

In February, I was privileged to represent our CIMIT community at a one-day "futuring symposium" hosted by the Food and Drug Administration. As one of 15 national leaders in the field of medical devices and technology, I was the voice of CIMIT as we explored areas having breakthrough potential in the next 10 years.

To prepare, we convened our own CIMIT futuring session. I also sought advice and counsel of other Boston area leaders before heading to DC so that the symposium could benefit from the collected wisdom of our community.

I learned not only is the CIMIT consortium very aware of future healthcare needs and technology, but we are actively pushing the leading edge through the many projects and programs we support. Indeed, our teams are exploring novel approaches in every field that was mentioned in our discussions.

Venture capitalists predict a very important new technology will center on spinal prostheses designed to help patients with back pain or slipped discs. They feel that effective therapies in dealing with congestive heart failure will be equally important, as will developments in neurostimulation techniques as it relates to conditions such as epilepsy and depression.

The biotechnology experts said the most active areas in their space will be ex vivo stem cell systems, convergence of devices and pharmaceuticals, spine nucleus replacements and matrix-cell interaction.

The panel predicted the following applications would become "very important" as well: genomics and proteomics; computerized devices and IT systems; portable and mobile devices for point-of-care delivery; home and self-care devices; artificial kidneys; wireless networks of devices, and image-fusion systems.

Also mentioned were electronic patient records; minimally invasive optical technologies; molecular imaging devices; functional imaging, neuron and sensory devices; vulnerable plaque detection; home telemedicine systems; and image guided therapy.

#### Sensor systems will be big

Participants reported considerable activity in both academia and industry to develop sensor systems for home and personal use. In the bioscience space, neurosciences will dominate all other bioscience, the experts said. Vaccines will make a major comeback and miniaturization will impact most devices.

In the military space, panelists suggested that a major technology innovation will be an electronic dog tag, a device with RFID, position sensors, treatment records and more.

For CIMIT and our community, it was a day well spent. I had the chance to spread the good news about CIMIT and the important work currently underway in our institutions. I also made many valuable contacts. These I hope to nurture for future collaborations or alliances. The participants were all high-level medical professionals or individuals who represent foundations and venture capital poised to invest in this space. But mostly I learned that we are very much at the forefront in the domain of devices and procedures. ■



From that discovery, alert applications exploded and are now used to notify staff if a high-risk patient is leaving the unit, if the wrong patient is in the wrong operating room, and even informs the clinical billing system when a procedure begins and ends.

The Radianse system is being used in most operating rooms at MGH. Brigham and Women's Hospital has placed it in several areas. BWH officials documented a return on investment in just over one year's time. ■

FEATURE :

## Abele Gift Advances CIMIT Convening Program

CIMIT has received a pledge of \$367,080 to continue its pioneering work in convening. The convening program is designed to explore new ways for researchers, clinicians and medical groups to meet, network and collaborate more effectively.

The grant comes from John E. Abele on behalf of the Argosy Foundation. Mr. Abele is co-founder of Boston Scientific Corporation. He has been an advisor to CIMIT from its inception.

The gift will be used to foster experimental convening at the CIMIT Forum, to support interactive communications, to expand the reach of the Forum, and to investigate best practices in the evolving field of convening.

One of Mr. Abele's objectives is to help managers and scientists collaborate more effectively through enhanced communication techniques.

"One of my goals (in making the grant) is to create an environment where real candor and insightful contributions are possible," said Mr. Abele. "CIMIT is a multi-disciplinary program with ties to many of the great research institutions.

"We want to use collaborative communication techniques to cross-fertilize promising ideas, and make sure that rhetoric doesn't overwhelm content."

The gift will be made in semi-annual disbursements, concluding in June 2008.

"This is a generous grant that will bring the Forum to a new level," said Lynn Osborn, CIMIT education director. "We are looking to add value to the current format by helping our investigators connect with experts outside their specialties.

John A. Parrish, MD, director of CIMIT, said, "The CIMIT Forum is a serendipitous environment where people who ordinarily would not meet each other, come together because of a shared interest in the topic.

"Whether we convene through the Forum or other novel means yet to be discovered, we are advancing our objective to collaborate. We are grateful to Mr. Abele for his continued support of CIMIT." ■

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Catalyst is a quarterly publication of CIMIT. To contribute news, story ideas or for subscription information, contact [cimitcommunications@partners.org](mailto:cimitcommunications@partners.org).

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CIMIT CALENDAR :

**Partners HealthCare/Ch 7 Health & Fitness Expo**  
June 22-23, 2007

**Medical Device Interoperability Workshop**  
June 25-27, 2007

**NOTES Boston**  
July 13-14, 2007

**New Investigator Orientation**  
September 18, 2007

**Trauma/Casualty Care Conference**  
November 12-13, 2007

**CIMIT Innovation Congress 2007**  
November 13-14, 2007

**CIMIT Forum**  
Every Tuesday @ 4pm

*For more information on these and other events visit [cimit.org](http://cimit.org)*

FUNDING OPPORTUNITIES :

**Career Development** June 18, 2007

**Fast Forward** June 18, 2007

**Working Groups** June 18, 2007

**New Concept** Anytime

*For more information on these and other funding opportunities visit [cimit.org](http://cimit.org)*

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Boston Medical Center  
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Brigham and Women's Hospital\*  
Charles Stark Draper Laboratory\*  
Children's Hospital Boston  
Harvard Medical School  
Massachusetts General Hospital\*  
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