

Supporting Translational Research

What makes CIMIT unique – and effective – is the in-house team of full-time experts who facilitate the complex process of introducing technological innovations into healthcare. This highly experienced, multidisciplinary team provides support and specialized expertise to investigators in intellectual property protection, patents and licensing, technology implementation, small business grant process, regulatory issues, fundraising, commercialization, and much more.

The goal of all CIMIT Facilitators is to leverage the strength of their backgrounds in business, law, intellectual property protection and product development. They also serve as a magnet to attract innovative thinkers and help investigators move novel ideas from bench to bedside. These activities are led by individuals with substantial experience acquired during previous professional positions; skills and insights that make them uniquely suited to address the issues arising along the commercialization pathway.

CIMIT invests heavily in sustaining this powerful, dedicated, facilitative team of experts supporting the clinical and engineering champions who lead its programs and site mine the consortium institutions for novel opportunities to improve patient care through technology. The CIMIT Facilitators are an integral part of the CIMIT mission and form its innovation support infrastructure. These functions exist to enhance its mission to accelerate the pace of innovation by actively facilitating the investigators progress through a highly customized plan, including:

- Connecting project leaders with individuals or teams that offer complementary skills to meet a unique need. These may be people who never would have met under normal circumstances. Strong applications for funding arise from these connections.
- Bringing in appropriate industrial resources, technologies, or prototyping skills at whatever stage they are needed.
- Funding prototype development to prove a concept or to allow animal or human studies. Such prototypes add value and plausibility to any subsequent licensing efforts.
- Guiding and supporting project leaders through the challenges of obtaining needed regulatory approvals and protection of any IP for subsequent licensing.
- Helping obtain follow-on funding for the next phase of work beyond the pilot stage, including potential philanthropy.
- Assisting with business planning, reimbursement analysis, connections with licensees or investors, and other requirements in the launch of a given technology in healthcare.
- Helping solve administrative problems with IP management, contract negotiation, grants administration, regulatory compliance, and more.
- Facilitating connections between investigators and the Department of Defense to explore potential “dual use” capabilities of new technologies
- Educating clinicians about device development and commercialization by sponsoring programs and courses in concert with engineering schools and business schools.

Education & Convening

CIMIT provides a rich, varied environment for the cross-fertilization of ideas and information among leaders and students in medicine, science, engineering and industry. CIMIT Education & Convening is responsible for the CIMIT Forum, courses at MIT and Harvard Business School, the CIMIT Innovation Congress, and various topic-specific symposia.

Mission

To educate and motivate investigators, encourage the exchange of ideas and information, promote collaboration between diverse communities, and provide an arena where interdisciplinary discussion can lead to breakthroughs.

Objectives

- Create an “architecture of participation” environment for CIMIT where “convening entrepreneurs” can experiment across disciplines and institutions
- Design and utilize the CIMIT Forum to assess techniques for stimulating speakers, moderators and audience
- Foster an environment where participants expect to be interactive and challenged
- Engage new audiences
- Harness the wisdom of participants to solve problems, foster innovation and think differently

2007 Accomplishments

- ▶▶ Created a series of podcasts to market the CIMIT Forum
- ▶▶ Managed *Driving Change in Healthcare*, the annual CIMIT Innovation Congress. 650 physicians, engineers, scientists, business executives, government officials and students attended
- ▶▶ Collaborated with the Harvard Business School in a multidisciplinary course, involving students from the schools of Business, Medicine, Arts and Sciences, Engineering, Law, Government and Public Health. Student teams selected six CIMIT projects, assessed and developed plans for translation to commercialization
- ▶▶ Created the CIMIT blog, registering over 3,000 individual viewers and over 800 regular readers
- ▶▶ Supported MIT/CIMIT 2.75 Medical Engineering Course, which produced an award-winning device

Lessons Learned & Plans for the Future

New media presents opportunities to reach new audiences and engage them in new ways with the CIMIT community. Through the CIMIT blog, podcasts and CIMIT-related wiki's, we are beginning to leverage information and ideas presented at the CIMIT Forum. These advances represent an exciting evolution of culture change.

In 2008, we will be experimenting with Adobe® Connect™, a secure, flexible web communication system to develop a series of web-based communication tools for training, web conferencing, and online convening.

Industry Liaison

Industry Liaison Program (ILP)

Industry's gateway to innovation and collaboration is CIMIT's Industry Liaison Program (ILP), a member-based, structured approach connecting industry and the world-class innovators funded or supported by CIMIT. ILP members benefit from customized services to ensure successful collaboration, accelerate the technology development process, and more quickly impact patient care. The ILP is an efficient route to finding the people, places and expertise needed for successful technology development and implementation in healthcare.

Small Business Program (SBP)

Through the Small Business Program, eligible ILP members can leverage CIMIT's rich network and expertise to identify and apply for government funding for product development and commercialization. CIMIT has a proven track record in facilitating applications for funding for Small Business Innovation Research (SBIR) grants from the Department of Defense and NIH. The SBP provides education on the SBIR process, identifies the clinical champion or co-investigator, contributes to the business and commercialization plans and assists with writing grants.

Mission

To support CIMIT mission by building relationships with industry that catalyze collaborations with CIMIT investigators so as to accelerate the technology development and its effective application to patient care.

Objectives

- Focus on industry partnership needs of investigators
- Promote small business technology development
- Establish and manage multi-company collaborative initiatives
- Assist non-medical technology companies with developing healthcare applications
- Establish a pathway for strategic alliances

2007 Accomplishments

- » Hosted more than 150 company visits to explore opportunities for collaboration
- » Sustained more than 40 active member companies, including five new members, industry contributions of cash and in-kind support totaling more than \$250,000
- » Developed the first signed Memorandum of Understanding to collaborate on technology development with an international company
- » Facilitated the application of three small business grants with investigators and small business members, one of which was awarded
- » Showcased more than 70 demonstrations in the CIMIT Exploratorium
- » Facilitated Working Groups for the NICU of the Future Program at Children's Hospital, helping to establish collaboration around light and sound innovation
- » Supported the CIMIT Neurotechnology Program by establishing collaborative relationships with companies in that field
- » Represented CIMIT at a variety of conferences, including AdvaMed, MassMEDIC, Illuminating Engineering Society, TransMed Partnership Forum and American Telemedicine Association

Lessons Learned & Plans for the Future

CIMIT attracts a diverse group of companies, each with unique needs and goals. In response to this changing dynamic, ILP plans to offer more targeted membership benefits for companies seeking specific services from CIMIT. In addition, ILP will continue to support CIMIT investigators by working with program leaders to establish, maintain or expand industry involvement in their programs.

The Small Business Program will host a series of Roundtables during 2008 to educate both the small business and CIMIT Principal Investigator communities about the goals, process and lessons learned from SBIR/STTR grant submissions. During these meetings, we will provide materials related to the proposal submission process as well as a listing of upcoming solicitations that have high potential for collaborative partnership between CIMIT and small businesses.

Development & Fundraising

The key to sustaining CIMIT's innovative investigators is a flow of adequate funding from numerous sources. The Development team works to secure support from a wide variety of constituencies including consortium member institutions, public and private foundations, and philanthropic gifts. This group works with CIMIT's Program Leaders and investigators to identify, cultivate and solicit prospective donors for their specific initiatives. Additionally, CIMIT is continually exploring a variety of revenue-generating opportunities including conferences, symposia and courses that foster relationships with ever-expanding audiences.

Mission

To provide a continuous, increasing stream of diversified funding support through the engagement of consortium member institutions, foundations, industry, small businesses, venture philanthropists, venture capitalists and other individuals for CIMIT core activities and programs to accelerate the impact of technology on patient care.

Objectives

- Achieve a fundraising goal of \$800,000
- Create a graduate student fellowship program at MIT
- Establish relationships with foundations committed to innovation
- Launch a volunteer advisory council with goals of ambassadorship and philanthropy
- Increase membership in CIMIT Friends, our annual giving society
- Inform donors on the impact of their generosity

2007 Accomplishments

- ▶▶ Raised \$849,000; exceeding revenue goal by 6%
- ▶▶ Established MIT/CIMIT Medical Engineering Fellowship program granting one 2-year award
- ▶▶ Successfully secured a \$250,000 gift for the Simulation Program from the VHA Health Foundation
- ▶▶ Opened discussions with Kauffman Foundation
- ▶▶ Expanded our relationships with the venture capital and entrepreneurial communities; hosted the second annual Venture Capital Summit focused on cardiac health

Lessons Learned & Plans for the Future

The Office of Development worked with an external consultant to evaluate CIMIT's readiness to establish a volunteer advisory council and strengthen philanthropic giving. Currently, serious conversations are underway with a prospective chair for our first CIMIT Advisory Council; filling that important position will aid in the recruitment of a group of influential, committed Advisors to assist in reaching our FY08 goal of \$1 million. CIMIT's focus on technology as a component of medical research makes a compelling case not only for philanthropic gifts but also for support from those individuals and groups who seek opportunities to interact with our international network.

Technology Implementation

Technology Implementation is a core resource dedicated to maximizing the deliverable benefits derived from funded translational research projects, programs, and initiatives. By working closely with the technology licensing offices of CIMIT consortium institutions, this team emphasizes intellectual property protection and capabilities developed by CIMIT projects.

Mission

Enhance the CIMIT mission by working individually with each potential and funded investigator to explore the specific impact on patient care anticipated by a particular new technology.

Objectives

- Help the investigators and their institutions create and manage their intellectual assets to maximize the value of their patent portfolio and to share equitably in the commercial success of their discoveries and inventions
- Create and integrate new business and investment models that will deliver these breakthroughs to all patients who need them at the lowest possible cost and the shortest possible time
- Support the technology transfer and licensing functions of each member institution and actively assist in the process of transforming invention disclosures into intellectual assets, and individual patents into powerful patent portfolios
- Identify ideal candidates for public-private partnerships, seek the most appropriate sources of translational support and funding alternatives, design cooperative relationships that will validate the safety and efficacy of the concept, and accelerate the widespread acceptance of new standards for patient care
- Anticipate and address pathway to commercialization issues

2007 Accomplishments

- ▶▶ Reengineered CIMIT's approach to facilitating technology implementation by developing a network of subject matter experts available to our investigators as needed, including consultants, business school students, entrepreneurs, venture mentors, pro bono legal resources, and grant writers
- ▶▶ Identified ten high-priority, high-impact projects for targeted strategic and financial investment
- ▶▶ Facilitated Global Health Program Leader efforts to collaborate with a non-profit design and product development firm to build looks-like, works-like prototypes of a low-cost isolette (infant incubator)

Lessons Learned & Plans for the Future

CIMIT plays a significant role in funding early stage innovations, mentoring Principal Investigators, and providing a pathway for implementing their innovations to improve patient care. Facilitation is at the core of the successful process that CIMIT has established to bridge many of the gaps that exist in the translation process - between clinical and engineering expertise and among academic medical research, government and industry.

Finance & Research Administration

The CIMIT Finance team has primary responsibility to support the executive director in the fiscal management of the consortium. In addition, this team provides support to stakeholders including financial reporting and guidance regarding strategic financial decisions. The Finance team has responsibility for the administration of sponsored funds requested, received and awarded by CIMIT and is the administrative point of contact office for Principal Investigators and staff across the collaborating institutions.

Mission

To support the CIMIT mission through strategic financial planning and management.

Objectives

- Obtain funding through guidance on proposal preparation
- Provide fiscal planning, management and support
- Compliance
- Human Resources

2007 Accomplishments

- ▶▶ A balanced FY07 budget
- ▶▶ Supported the launch of 52 science projects across 8 institutions, facilitated the administration of 15 Career Development and Working Group Awards
- ▶▶ Completed and closed final reports for the CIMIT/DOD Cooperative Agreement I, totaling \$30.93M

Lessons Learned & Plans for the Future

Operational efficiencies enable CIMIT to more expeditiously support new ideas that become funded CIMIT projects. The same efficient systems allow CIMIT to offer a full range of facilitative in-kind assistance to these multidisciplinary collaborations. As part of our ongoing continuous improvement processes, we plan to evaluate the benefit of alternative computer services or programs that are low cost, high efficiency options to current Finance Office operations. In particular we will be looking for ways to leverage technology to support the administration of science proposal, award tracking and other project management options.

In 2008, we plan to seek the assistance of a financial consultant to review current processes and reports, and offer recommendations for process improvement.

Liaison Office & Government Relations

The work of CIMIT is supported by Government agencies, including the Department of Defense. CIMIT is committed to meeting the needs of all its stakeholders. CIMIT is also committed to facilitating and supporting its investigators as they propose new methods of care that require involvement of their home institutions, apply for and receive funds or support from Government agencies, or need to prepare for Governmental review, e.g., for FDA approval.

Mission

To engage and support consortium members, national and international affiliates, and the Federal Government; and to support CIMIT investigators in relation to these entities. To investigate, initiate and nurture new relationships, and assess the value of potential new members, affiliates and other activities with CIMIT member institutions.

Objectives

- Foster and facilitate ongoing relationships with CIMIT consortium members and stakeholders
- Establish and document metrics of success
- Negotiate and evaluate Regulatory Affairs consulting agreement; serve as entry for investigators to regulatory consultation services
- Assist investigators in preparation for briefings and presentations to stakeholders
- Plan/host strategic meetings by interested parties/stakeholder leadership
- Coordinate government interaction/relations of CIMIT
- Plan and host an international seminar on models of innovation

2007 Accomplishments

- ▶▶ Completed agreement with leading Washington law firm, specializing in FDA regulatory issues for pro bono support of CIMIT investigators
- ▶▶ Hosted numerous visits of stakeholder leadership, and other interested national and international parties
- ▶▶ Prepared briefs for stakeholders, including Federal Government, Department of Defense, consortium members, and international foundations
- ▶▶ Planned and executed successful international seminar, *Models of Collaborative Medical Innovation*, facilitated by Harvard Business School
- ▶▶ Provided CIMIT support for Harvard Business School case, entitled Center for Integration of Medicine and Innovative Technology (CIMIT)
- ▶▶ Hosted planning meetings with Health Facilities Planning Agency (Department of Defense/Veterans Administration)

Lessons Learned and Plans for the Future

CIMIT investigators are successful in innovative research and design that does change the delivery of care to the wounded soldier and to society at large. The measures of success are broad and important. International collaborations as well as academic analysis of success in conjunction with Harvard Business School faculty further define present and future value of CIMIT.

Strategic Communications & Marketing

Strategic Communications & Marketing supports CIMIT investigators by increasing visibility of CIMIT and by cultivating support from new audiences, stakeholder leadership, public opinion leaders, media, business, industry, foundations and others. Strategic Communications & Marketing is responsible for all external and internal communications, public relations and www.cimit.org

Mission

To promote awareness and understanding of CIMIT's priorities, programs, people, policies, projects, procedures and accomplishments through effective proactive, reactive and interactive communications via marketing, media/communications and general outreach.

Objectives

- Create and execute an integrated communications plan to increase visibility with both internal and external audiences
- Advise Program Leaders, Site Miners, investigators and staff on marketing strategies that can increase awareness and support fundraising
- Create and execute a strategy for using www.cimit.org effectively
- Seek out and secure opportunities to promote CIMIT locally and nationally
- Lead and execute a proactive media relations strategy

2007 Accomplishments

- ▶ Designed and executed an integrated multimedia, conference marketing campaign. Registered 244 new attendees
- ▶ Established a new model for collecting investigator metrics and evaluating customer satisfaction. Achieved 65% response rate, establishing benchmark data on performance metrics
- ▶ Introduced several new publications including Catalyst (quarterly newsletter), CIMIT Newswire (monthly electronic communication for research community), and Forum Report (weekly recap of CIMIT Forum presentation)
- ▶ Created brand and identity standards to support CIMIT identity and visibility initiatives
- ▶ Achieved increased awareness of CIMIT through media exposure; generating feature articles in Boston Globe, Boston Business Journal, Nature, Indus Business Journal, Mass High Tech, MIT Technology Review, Science Daily, Boston.com, New England Cable News, Fox 25-TV, Chronicle, NPR and others
- ▶ Enhanced search engine optimization features of cimit.org, improved site navigation

Lessons Learned & Plans for the Future

CIMIT is a complex concept to explain to new audiences. CIMIT has substantial goodwill with current audiences. Building awareness and brand value is a long-term strategy.

The Strategic Communications goal is to build a strong brand and promote the vision of CIMIT leaders, individual projects and signature initiatives. This team can advance the CIMIT mission by methodically educating new audiences and expanding awareness with the media so that philanthropy and industry programs can attract and engage new supporters.

Operations

CIMIT's internal operations require effective and efficient administrative support of CIMIT's complex activities. The hiring of administrative staff for ever-changing duties is a challenge. Even though CIMIT is a consortium entity, all administrative activities must comply with MGH and Partners' policies. By sharing tasks and cross-training staff, the operations group is able to fulfill its role on a very lean budget.

Mission

To maintain and enhance the smooth and efficient staff administrative functions in support of CIMIT projects and leadership.

Objectives

- Develop mechanisms for the support staff to increase production, cohesiveness and teamwork
- Increase the efficiency of the team by taking advantage of their talents to specific tasks and needs of the group
- Efficiently manage backfill of employee vacancies and space allocation
- Proactively improve management of non-salary office expenses

2007 Accomplishments

During 2007, the support staff contributed significantly to several high-profile initiatives including the Innovation Congress and the science review process. More emphasis on career development within and outside the CIMIT organization is valued by staff and has greatly reduced turnover. This team supports an ever-increasing volume of projects and special events. Continuing education programs have been introduced to help staff achieve goals.

Lessons Learned & Plans for the Future

CIMIT must continue to provide support, appreciation and education to this team. We must never take for granted this group of truly talented people.

In the year ahead, continued emphasis will be placed on further upgrading of the skill level of staff through training and development as well as effective recruitment for new needs.