Yale Center for Biomedical and Interventional Technology (CBIT)

Infrastructure for Biomedical Commercialization

http://cbit.yale.edu || cbit@yale.edu
Catalyze biomedical commercialization at Yale through education, opportunity creation and support
CBIT Functions

1. Build network to identify unmet clinical needs
2. Catalyze team formation and education across schools
3. Support for value analysis, regulatory and business planning
4. Provide seed grants and connections to external investors
CBIT Nucleating Project – 50 to Date

- Initial candidate projects across clinical and engineering departments
  - MR-US Fusion for Targeted Biopsy
  - Biofeedback for lower-extremity rehabilitation
  - Wireless Power Transmission
  - Tumor-homing nanoparticles for cancer ID and therapy
  - Nanowire BioFETS for pathogen detection
Peter Schulam, MD, PhD  
CBIT Founder  
Chair Urology

Mark Saltzman, PhD  
CBIT Founder  
Chair Biomedical Engineering

Chris Loose, PhD  
Executive Director  
Asst Professor Adjunct Urology  
Lecturer Biomedical Engineering

Jean Zheng, PhD  
Engineering Director  
Lecturer Biomedical Engineering
CBIT Advisory Panel

Mike Caty, MD, MMM
Pediatric Surgery

Seth Feuerstein, MD, JD
Psychiatry

Howie Foreman, MD, MBA
Diagnostic Radiology

Kyle Jensen, PhD
SOM

Marty Klein, PhD
Public Health

Max Laurans, MD, MBA
Neurosurgery

Laura Niklason, MD, PhD
Biomedical Engineering and Anesthesiology

Kurt Roberts, MD, FACS
Gastrointestinal Surgery

Erika Smith
YEI

Vince Wilczynski, PhD
SEAS

Joe Zinter, PhD
CEID
CIMIT Overview
Consortia of hospitals, universities and labs

Accelerating healthcare innovation and commercialization

Supporting investigators and fostering collaboration
Members and Affiliates

- Massachusetts General Hospital
- Brigham and Women's Hospital
- Beth Israel Deaconess Medical Center
- Boston University
- Boston Medical Center
- MIT
- Newton-Wellesley Hospital
- VA Boston
- A Center at Harvard Medical School
- Draper Laboratory
- Partners Healthcare
- Boston Children's Hospital
- MIMI
- Agency for Science, Technology and Research
- Eastern Health Alliance
- Northeastern University

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The “CIMIT Model”

**Find**
- Request for Proposals
- Site Miners and Program Leaders
- Faculty and Administrators
- Conferences
- Academic courses

**Facilitate**
- Provides active cross-functional mentoring
- Convenes clinicians, scientists, engineers, entrepreneurs, industry
- Assists with grant writing
- Identifies additional funding sources and collaborators

**Fund**
- Young Investigator Awards ($50K)
- Innovation Grants ($100K)
- Accelerator Awards ($100 – $400K)

**Exit**
- Formation of a NewCo
- License to BigCo
- External funding (institutional, grants, etc.)
- Adoption into clinical practice
Infrastructure

Academic Team

Team of accomplished academicians assists investigators with research and grant submissions

Accelerator Team

Team of successful entrepreneurs guides project teams towards commercialization-oriented exits

CoLab

Cloud-based software manages and measures innovation – grant processes and collaboration
Infrastructure for Multiple Consortia

B-BIC  NIH

NEPDC  New England Pediatric Device Consortium

Boston Children's Hospital  mimit

Agency for Science, Technology and Research  Institute for Pediatric Innovation
Clinical Impact Survey: Projects supported from 1998-2014, with MGH making up about 2/3\textsuperscript{rd}s of the portfolio

**ROI**
- $1.2B in funding for CIMIT supported projects
  - $105 in funding from CIMIT to institutions (~70% to projects)
  - $1.1B in follow-on funding from projects (~80% response rate)
    - $500M in follow-on funding at institution
    - $600M in commercial funding
- $30M in funding to CIMIT from members (40:1 multiplier in total)

**Commercial Success**
- 60 NewCo’s or commercial licenses
- 460 issued U.S. patents, with foreign counterparts in addition

**Academic Excellence**
- 2,300 peer-reviewed publications
- 30% of PIs reporting a major impact on the career of one or more team member

**Clinical Impact**
- 17% of project have led to clinical use (70% are still active)
Funding amplification of CIMIT supported projects

Commercial Investment in Projects

Follow-on Funding to Projects

~$50M CIMIT Project Funding

Initial Project Funding Year

Cumulative Funding Amount - $M


$- $200 $400 $600 $800 $1,000 $1,200