University of Massachusetts Boston – Dana-Farber/Harvard Cancer Center
U54 Partnership to Reduce Cancer Health Disparities

Leveraging resources and synergizing activities within the UMass Boston-Dana Farber/ Harvard Cancer Center Partnership to promote PACHE objectives

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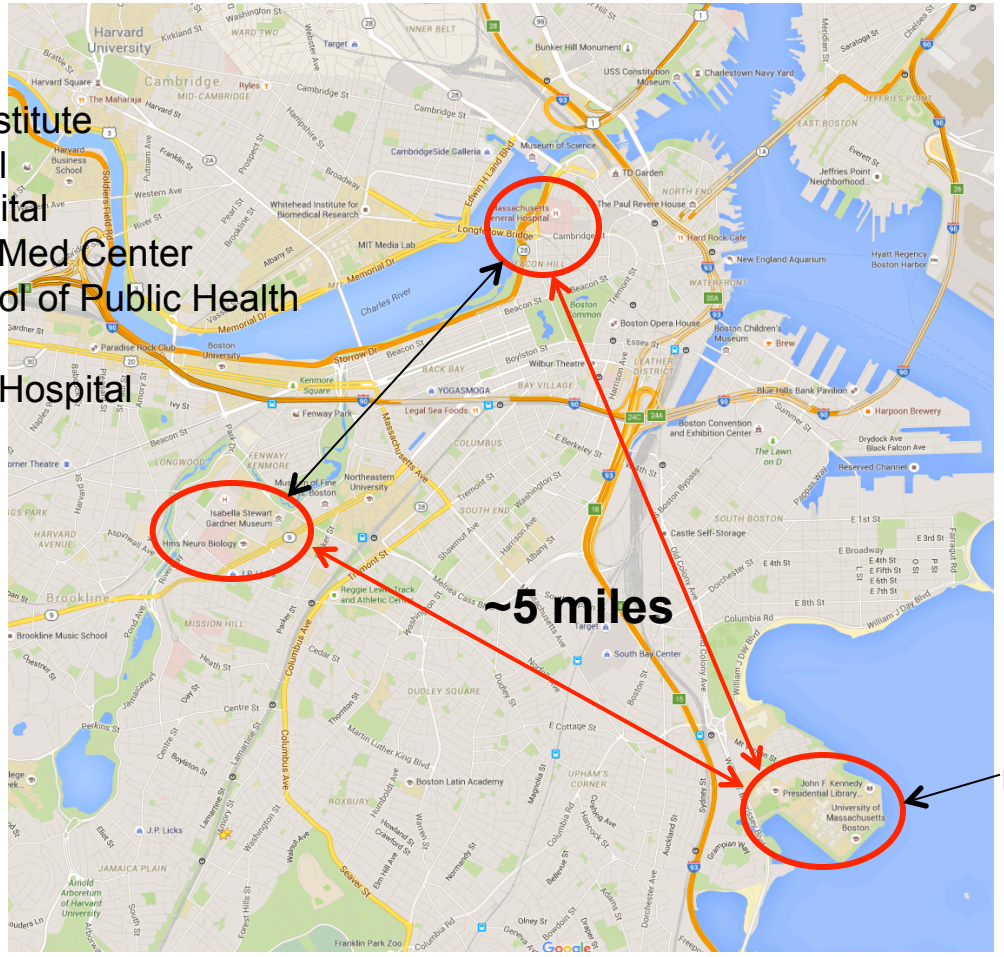
Outline

- Overview of our partnership
- UMass Boston details
- Leveraging resources and planning for the future
  - Infrastructure
  - Research Education at the MSI
    - University-wide
    - Department level
- Synergizing activities between both institutions
  - Example: Research Education

Institutions of the Partnership are in close proximity

DF/HCC

Dana Farber Cancer Institute
Harvard Medical School
Boston Children's Hospital
Beth Israel Deaconess Med Center
Harvard TH Chan School of Public Health
Mass General Hospital
Brigham and Women's Hospital



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UMass Boston-DF/HCC
U54 Partnership since 2003

Specific Objectives:

1. Develop a rigorous, collaborative cancer and disparities-related research program

2. ***Develop a robust and sustainable research program at UMass Boston***

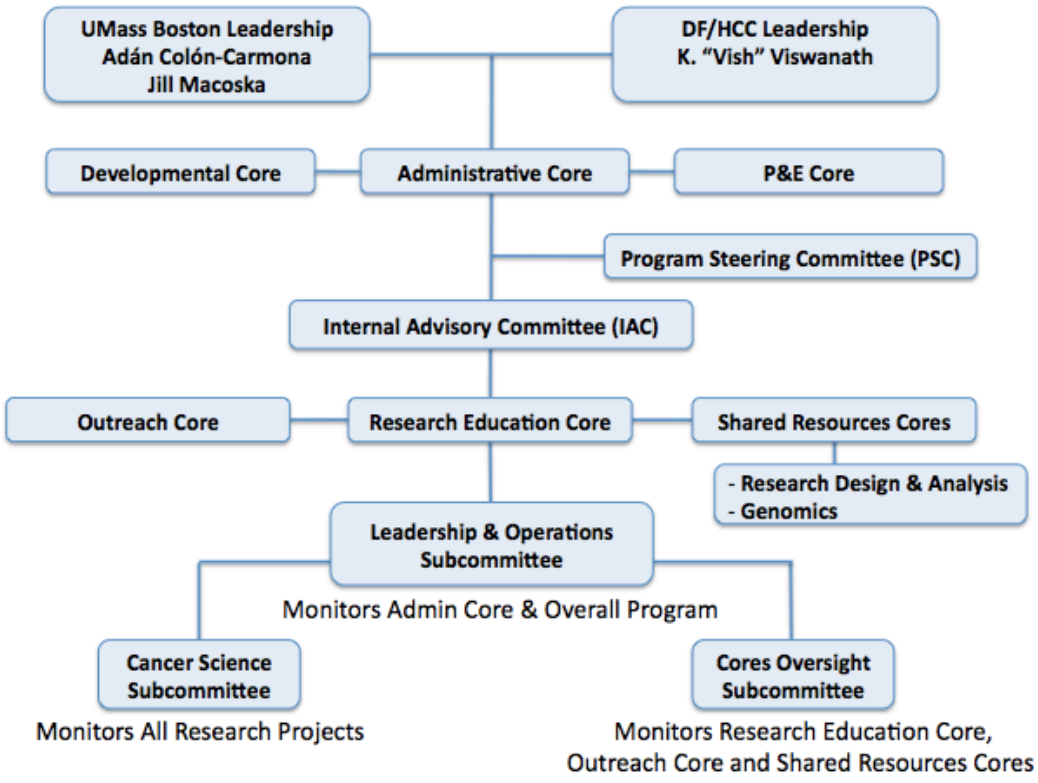
3. Expand the cancer-related training program (specifically at UMass Boston)

4. Develop a robust cancer outreach program

5. Develop a vibrant Partnership that attracts cancer research interests among both existing faculty and new faculty at both institutions

6. Support the career development of early stage investigators (ESIs)

Overview of Partnership structure



University of Massachusetts (UMass) Boston

- UMass Boston is Massachusetts' *public urban* university, with an enrollment of just under 17,000.
- A Carnegie Research II university, UMass Boston is proudly the most diverse public four-year higher education institution in New England, with 52% students of color at the undergraduate level.
- As a US Department of Education Title III institution, 56% of UMass Boston undergraduate students are first-generation college students, 40% report speaking a language other than English at home, and 33% receive Pell grants.
- UMass Boston is one of 32 colleges and universities in the Boston metro area, but is the only 4-year public university.

Leveraging resources and building infrastructure for the future, at UMass Boston

- **Center for Personalized Cancer Therapy (CPCT).** A direct outcome of the Partnership, the newly established CPCT at UMass Boston, is a *joint effort* between the University and DF/HCC founded with the goal of increasing diversity within the Life Sciences workforce in Massachusetts, and funded through a combined **$13.5M capital investment** from the Massachusetts Life Sciences Center (MLSC) and UMass Boston. Dr. Jill Macoska (U54 co-PI) is the Director of the CPCT.

- The new **Office of Minority Health Disparities Research (OMHDR)** at UMass Boston, created last year, has 4 major goals that are synergistic with the U54 Partnership: Strengthening health disparities infrastructure on campus, interdisciplinary education and training (involving multiple colleges), faculty diversity (particularly in STEM), and expanding community engagement. Dr. Jill Macoska is one of the co-Directors.

Leveraging resources and building infrastructure for the future, at the DF/HCC

- **Center for Translational Health Communication Science (CTRAHCS)** under the directorship of Dr. K. “Vish” Viswanath (U54 PI). The focus of the CTRAHCS is to advance the science of translational communication through research, training, and dissemination and implementation activities to address cancer disparities.

- **Lee Kum Sheung Center for Health and Happiness at Harvard T.H Chan School of Public Health (HSPH)** is a newly established Center at the HSPH. The Center will focus on both new research and assembling what is already known about the role of happiness and other components of well-being in relation to physical health. It has a strong outreach component. Dr. K. ‘Vish’ Viswanath (U54 PI) is the co-Director of this center.

UMass Boston-DF/HCC U54 Partnership Research Education Core (REC)

Goal: Train the next generation of cancer/cancer disparities scientists, including a cadre of highly skilled and culturally sensitive investigators from underrepresented backgrounds who can help reduce disparities in cancer

- Since the inception of the Partnership in 2002, 247 students have had cancer-related basic, clinical, population, and nursing research experiences in UMass Boston and DF/HCC labs and research settings.

- Seventy five percent of these students are from underrepresented (UR) backgrounds; 50% are Black, Hispanic, Native American, or Pacific Islander and 55% are 1st generation; 41% are both.

Leveraging funds to train and educate students: Training programs at UMass Boston

The high quality research experiences and mentoring the Partnership brings to the table significantly increased the competitiveness of the university's research education grant applications. Funding for science training has increased from $1,281,305 in 2003 to $10,096,940 in 2015.

Program	Source
Initiative for Maximizing Student Development (IMSD)	NIH
Ronald E. McNair Program	DoEd
Bridges to the Baccalaureate	NIH
Health Equity Scholars	NIH
Louse Stokes Alliance for Minority Participation	NSF
Research Experience for Undergraduates (2)	NSF

Leveraging funds to train and educate students: University commitments and private donations

Strong institutional commitment, an increasing pool of competent mentors, and our success in attracting philanthropic support is enabling the partnership to provide the direct support that underrepresented students need to be able to participate in the REC of the U54 Partnership.
Institutional commitments:

- Together provide $40,000/year ($25,000 UMass Boston and $15,000 DF/HCC) for 8-10 additional undergraduate summer research placements (Total U54 placements this summer= 45)

In addition, UMass Boston has garnered significant support from corporate, foundation, and philanthropists for student research training over the last 3 years, including:

- A $1 million gift for STEM education from Sanofi/Genzyme
- Another $1 million dollar gift from the Ralph and Janice James Family for student success

Leveraging funds to train and educate UMass Boston students at the departmental level: Biology example

Biology Graduate Research Endowment - Supports *graduate students* pursuing advanced degrees in any one of the graduate programs in Biology ($1 million donation)

Biology Professor's Endowment – Supports UMass Boston (*veterans or active duty*) *undergraduate students* pursuing a degree in biology

Nancy Goranson Endowment - Provides financial assistance to Biology *graduate students* for research related activities

Bettina Harrison Endowment - Provides an award to a biology major (*undergraduate*) who combines teaching at the university level with scholarship

Herbert Lipke Fellowship - Fellowship supports a deserving full-time *undergraduate researcher* to reduce the general indebtedness of a student by reducing his/her dependence on loans

Herbert Lipke Memorial Endowment - Annually awards support towards professional travel for *graduate students*

McCone Family Endowment - Provides financial assistance for *undergraduate students* who wish to pursue research projects within the Biology Department

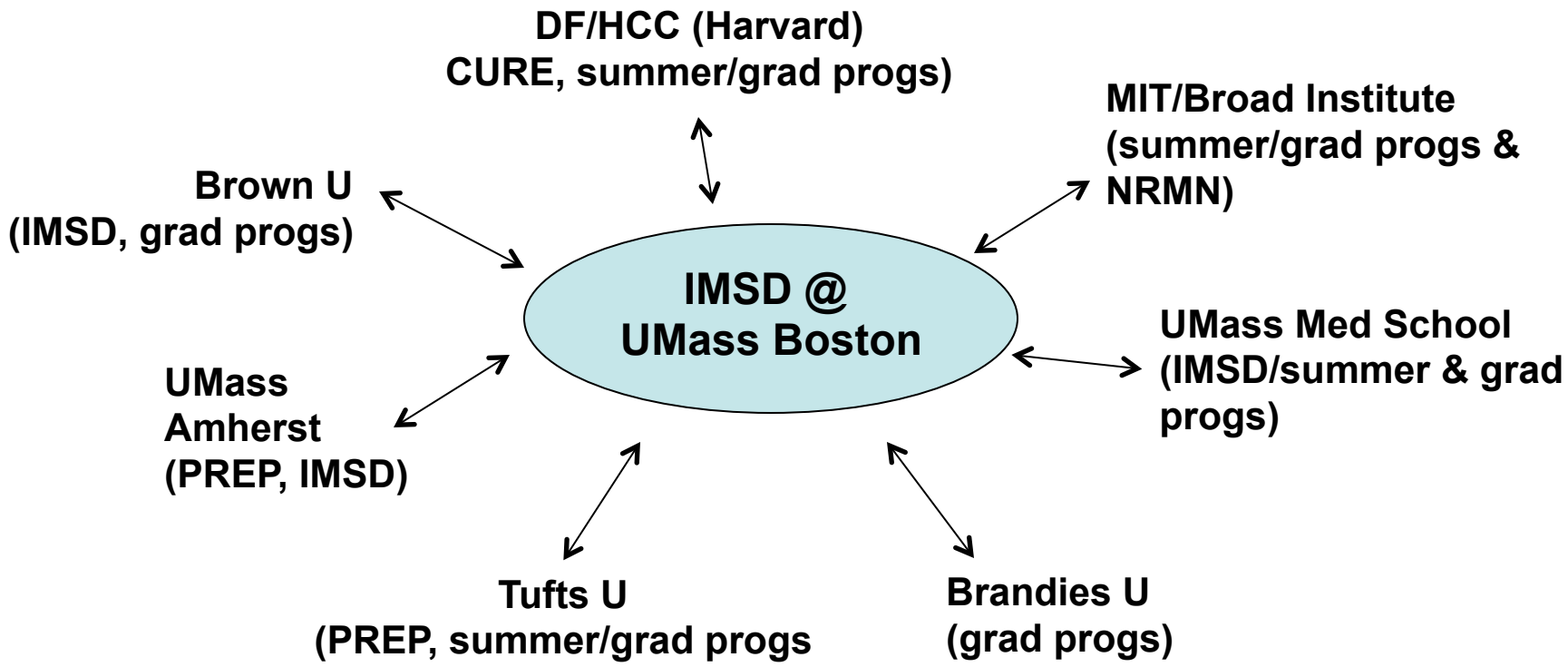
Biology Enhancement Endowment - Supports visits by speakers, scholars and researchers to the *department*

Lipke/Biology Endowment - Brings scientists to campus who interact with *Biology students and faculty*, to provide mentoring workshops mentoring with an emphasis on hands-on teaching

Synergizing Partnership programmatic activities, related to the Research Education Core

- **Co-sponsoring science seminars**: Minority scientists visit campus and interact with our students and faculty (co-funding visits and coordinating interactions with multiple programs, e.g. U54, IMSD, McNair, and individual departments)
- **Scientific symposia such as the Summer Science Symposium**: Forum for undergraduates to present posters (U54, 2 REU programs, Health Equity Scholars, and IMSD Fellows, expecting ~80 students)
- **Professional development**: Workshops on various career pathways, graduate school, and mentoring (U54, IMSD, and NRMN)
- **Courses**, such as “Communicating in Science for Undergraduates”, a National Research Mentoring Network (NRMN) and IMSD-sponsored activity to the U54, in partnership with the Broad Institute. Course is run by Drs. Bruce Birren (Broad), Diedra Wrighting (U54 REC program manager) and Adán Colón-Carmona (UMass Boston).
- **Science Education Day**: A full-day science awareness retreat, with high school students from Boston Public Schools, DF/HCC CURE Program participants, and U54 trainees

Collaborations with regional institutions, the IMSD @ UMass Boston example



Activities: Recruitment, scientific exchange (conferences), mentoring, curriculum development and analysis, and sharing best practices in training

Summary

Since the inception of the Partnership, we have collaboratively leveraged each others' strengths to substantially increase research, outreach and student training efforts in cancer research and to enrich the diversity of trainees pursuing cancer and disparities research careers.

Key points in sustainability:

- Plan strategically for the future in each component of the U54 Partnership, from the Cores to research and education areas.
- Develop Centers/units within the institutions that can enhance and strengthen Partnership's efforts.
- Pursue external funding from multiple sources to supplement, promote and expand Partnership goals.
- Form new partnerships, such as those with other institutions or government agencies, to increase the impact of the U54 Partnership.