Boston Health Equity & community-Aligned Learning Health System (Boston HEALHS)

**October 28, 2024**

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What is a Learning Health System?

AHRQ defines a learning health system as a health system in which internal data and experience are systematically integrated with external evidence, and that knowledge is put into practice. As a result, patients get higher quality, safer, more efficient care, and health care delivery organizations become better places to work.

Learning Health Systems—

- Have leaders who are committed to a culture of continuous learning and improvement.

- Systematically gather and apply evidence in real-time to guide care.

- Employ IT methods to share new evidence with clinicians to improve decision-making.

- Promote the inclusion of patients as vital members of the learning team.

- Capture and analyze data and care experiences to improve care.

- Continually assess outcomes refine processes and training to create a feedback cycle for learning and improvement.

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# Learning Health Systems Science Competencies
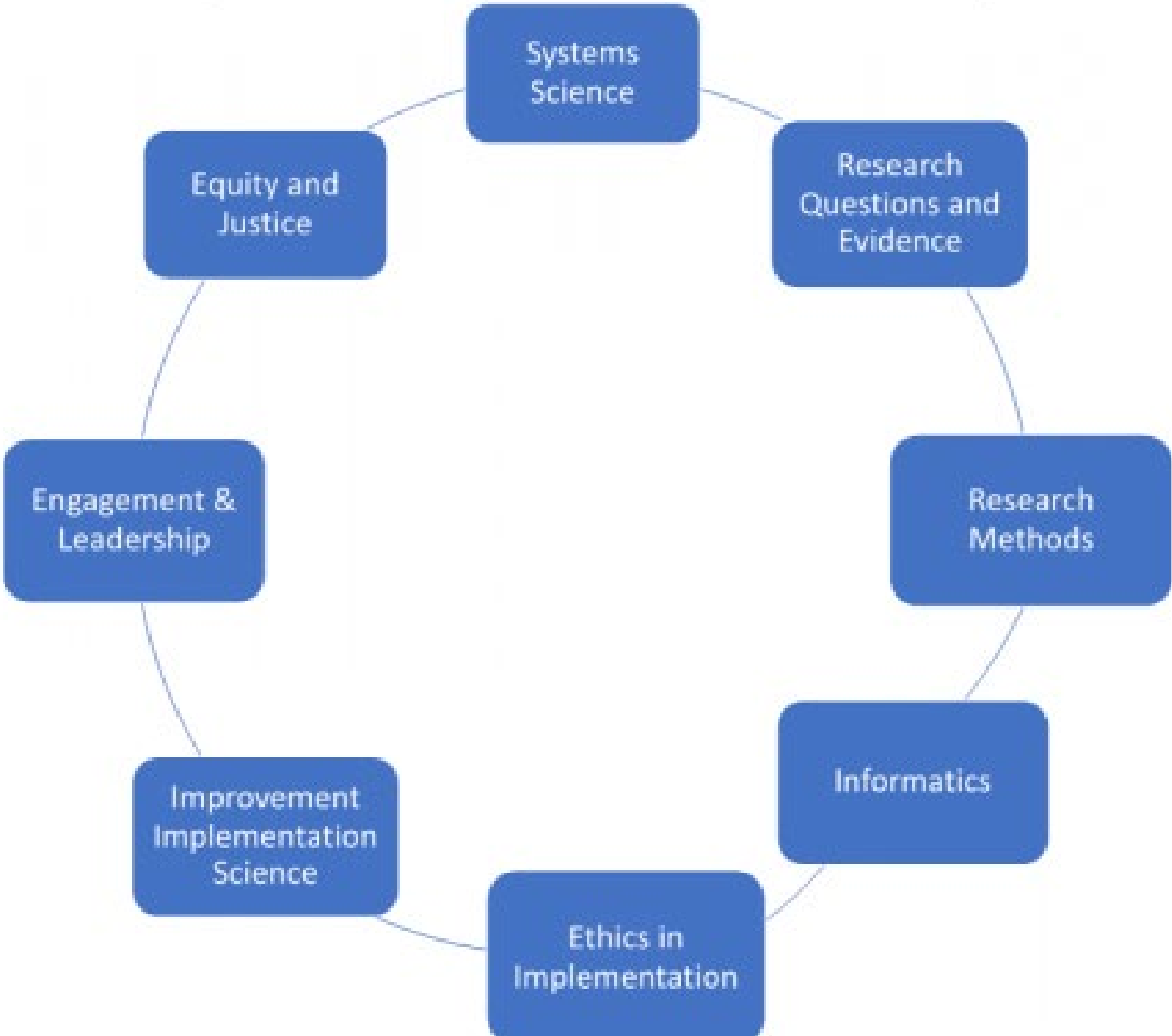
Boston HEALHS Overview

- Funded by AHRQ-PCORI as a 5-year grant under the P30 Research Program Projects and Centers grant mechanism

- A multidisciplinary approach to shared resources and facilities for research and training by a team of investigators from different disciplines who focus on a common research problem.

- Programs are expected to:
  - Prepare clinician and research scientists for independent research careers in Patient Centered Outcomes Research (PCOR)/Comparative Effectiveness Research (CER)
  - Equip them to advance the field through their training and scholarship as the next generation of Learning Health System Scientists
  - Support PCOR/CER within their institution and ensure the dissemination, implementation, and use of research findings.

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Program Structure
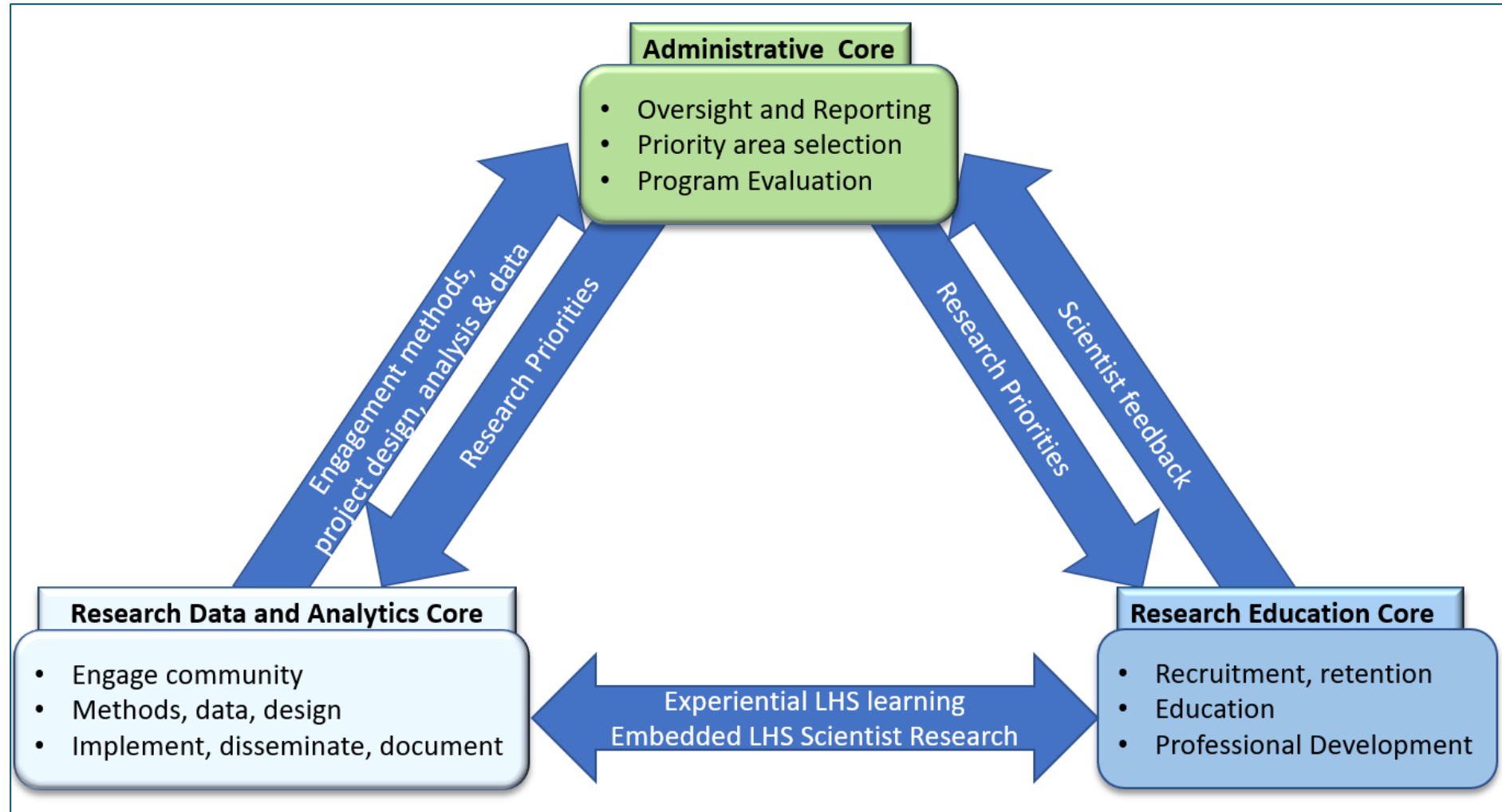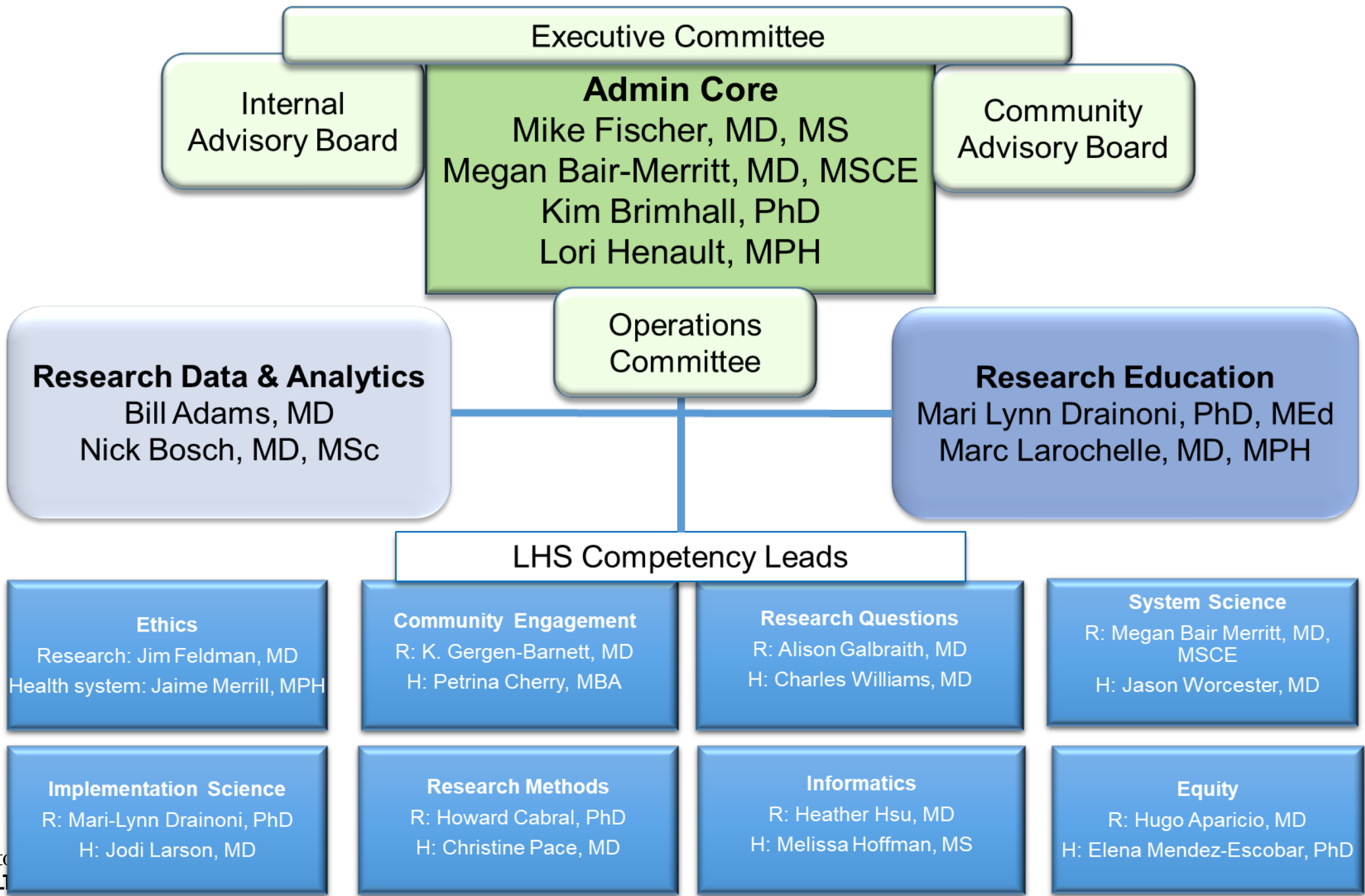
Research Education Core (REC)

Led by Mari-Lynn Drainoni and Marc Larochelle

Goal: Recruit diverse early and mid-career faculty and guide them through a two-year program to prepare them for a career as independently funded LHS scientists in a safety net setting.

Recruitment:
- Two early and mid-career faculty per year
- Strategies grounded in DEIA principles
- Alignment with identified Health System and Community Priorities

Mentorship Team:

Oversight Mentor (REC Lead)

Research Mentor(s)

Health System Mentor

LHS Curriculum
- Develop Individual Development Plans
- Experiential learning and didactic offerings covering 8 LHS Domains
- Professional Development

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2024 – 2026 Scholars

Amy Yule, MD is an expert in the assessment and treatment of adolescents and young adults with co-occurring substance use disorders and psychiatric disorders. She is also a physician scientist and her research is focused on the investigation of risk factors for adolescent onset substance use disorders, risk factors associated with risky behaviors in youth with substance use disorders such as overdose, and treatment interventions for youth with substance use disorders and co-occurring psychiatric illness.

LHS Project: Effectiveness of a risk-score based complex care management program compared to usual care among patients with substance use disorder: a mixed methods study

Naima Joseph MD, MPH is a board-certified obstetrician gynecologist with subspecialty expertise in Maternal and Fetal Medicine. Her career and research focus centers on health systems approaches to achieving equity and quality in maternity care, reduction of severe maternal morbidity, and reduction of perinatal infectious burden in socially vulnerable populations. As a high-risk pregnancy expert, Dr. Joseph cares for patients with complex conditions such as diabetes, hypertension, congenital cardiac disease, and fetal anomalies.

LHS Project: Implementation and Effectiveness of a Remote Blood Pressure Monitoring Program for Hypertensive Disorders of Pregnancy: An observational target trial emulation
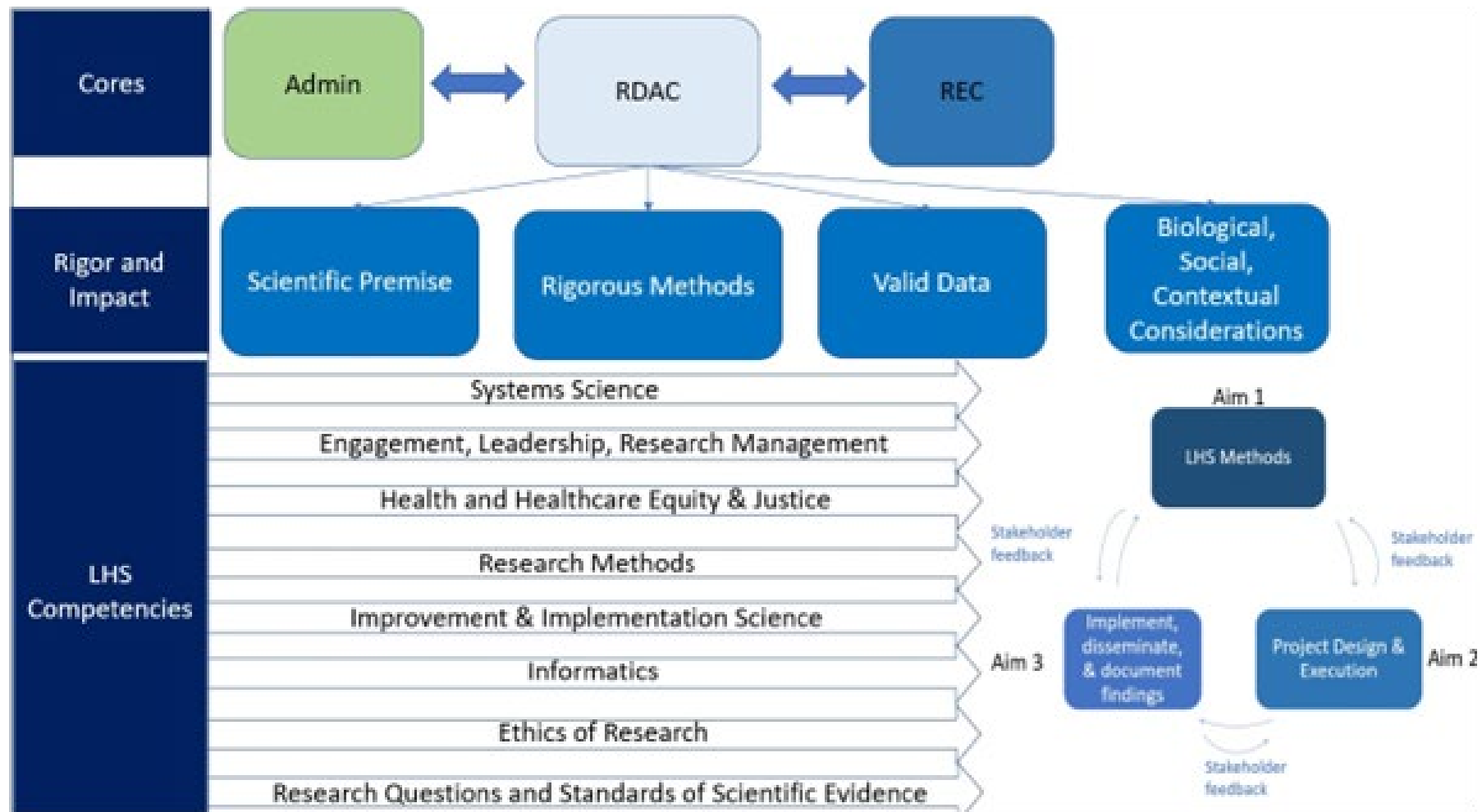
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Research Data and Analytics Core (RDAC)

Goal: ensure effective community engagement, rigorous research methods, robust data infrastructures, and efficient implementation and dissemination of findings.

➢ Led by Bill Adams and Nick Bosch
➢ Develop and apply state-of-the-art methods and data for community-engaged participatory research, patient centered outcomes research, and embedded comparative effectiveness.
➢ Support the design and execution of LHS scientists' PCOR/CER research projects, coordinating and consulting to ensure continuous stakeholder input.
➢ Innovate equitable implementation of evidence-informed practices and dissemination of LHS findings.

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Research Data and Analytics Core (RDAC)

BMC Colon Cancer FIT testing Quality Improvement Clinical Trial

**Panel Discussion**

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Colon Cancer

- Third most common cause of cancer
- Second most deadly cancer
- Identifying cancer early improves survival

Estimated New Cases in 2024	152,810
% of All New Cancer Cases	7.6%

Estimated Deaths in 2024	53,010
% of All Cancer Deaths	8.7%

5-Year Relative Survival

65.0%

2014–2020

Rate Per 100,000 Persons vs Year (1992–2022)

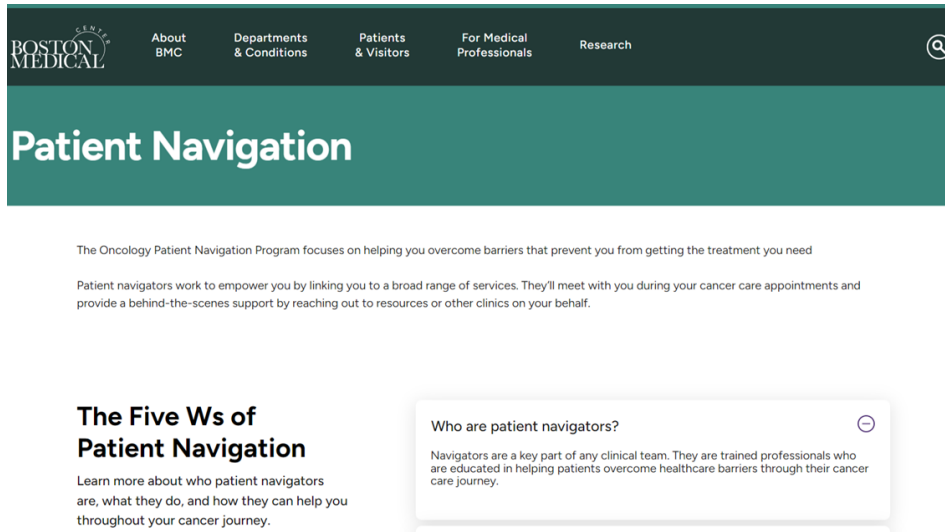Legend: Rate of New Cases, Death Rate

NCI
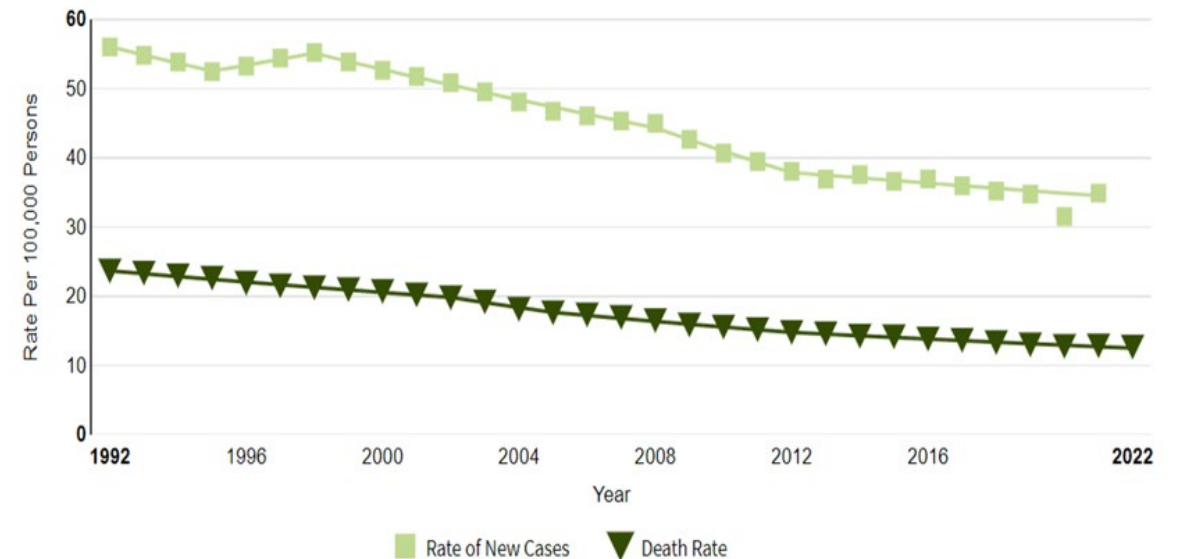
Colon cancer screening

- Colonoscopy
- FBT: fecal blood tests; FIT: fecal immunochemical test

How do we improve overall and equitable screening ?

Questions to answer

Do evidence-based interventions that work elsewhere work at BMC?

How can we implement and adapt interventions to more effectively work at BMC?

How do we know if our adaptations work?

Can our experiences be used to help other institutions?

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FIT test not returned

Randomization

Phone-based AI text reminder

Patient navigation

Patient navigation

Phone-based AI text reminder
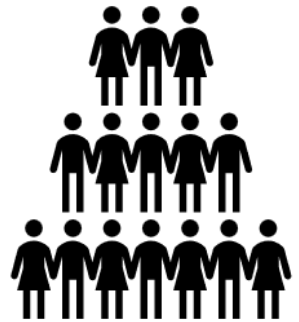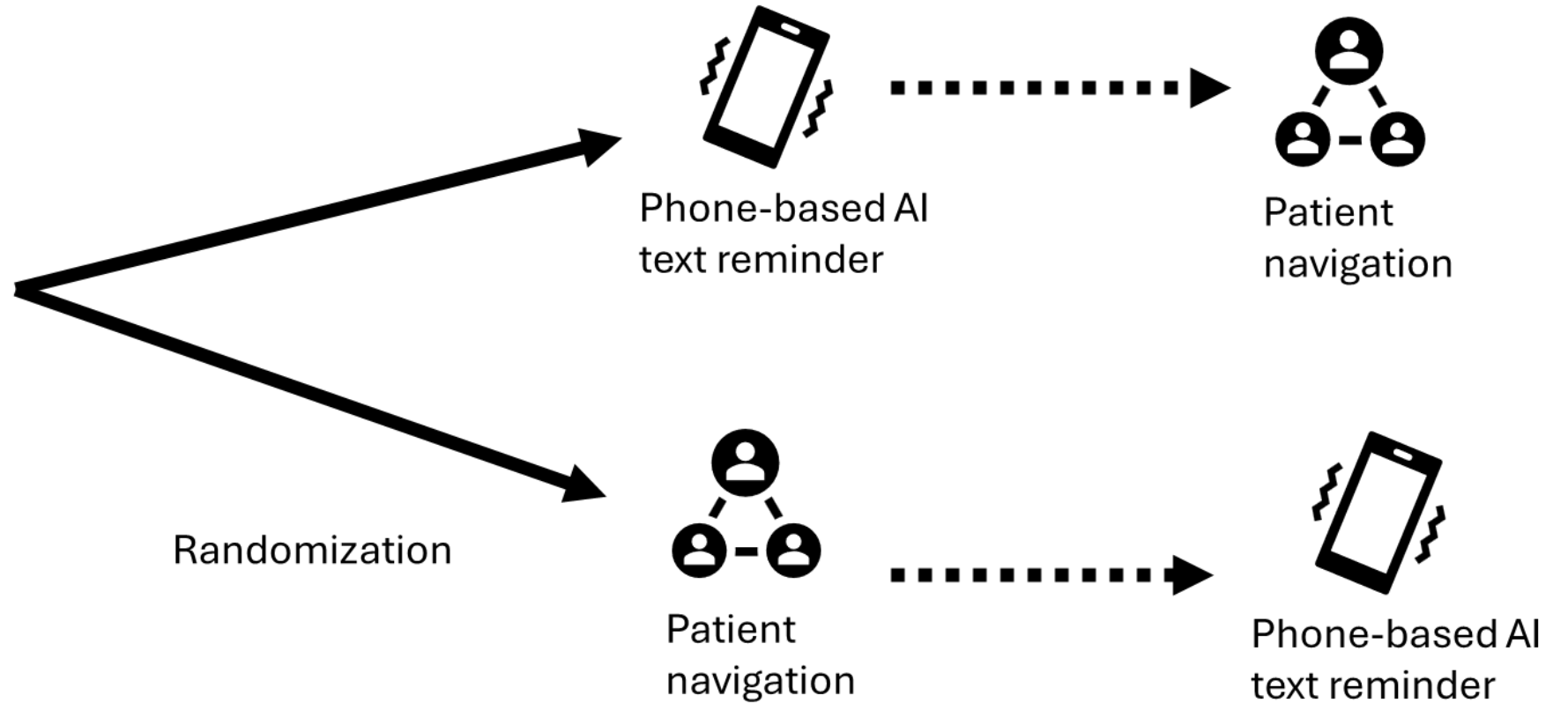
PANEL DISCUSSION

Kirsten Austad – CIIS, Co-Director

Tabitha Cherilus – Director, Cancer Equity

Nick Cordella – Medical Director, Quality and Patient Safety

Emily Jansen – Quality Manager, Quality and Patient Safety

Christine Pace – Medical Director, Population Health Services

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What is Boston HEALHS training program?

- Funds two researchers per year for five years (10 researchers total)
- Competitive application process
- Scholars will take courses and receive mentoring to learn more about learning health systems
- Research projects will be driven by community priorities, addressing topics that are important to patients, members of community groups that interface with BMC, and hospital leaders

- Learn more at: https://www.bmc.org/boston-health-equity-community-aligned-learning-health-system-healhs

Who is eligible to apply?

- BUMC Clinician- or non-clinician scientists (e.g., MD, PhD, PharmD, or similar degree) with a strong interest in a research career that involves LHS work in safety net settings

- Assistant or early Associate Professors who have previously completed research-focused fellowships or similar research training (e.g., masters-level training in epidemiology, health services research, etc.)

- We anticipate that most applicants will be at early career stages but will consider mid-career applicants seeking to refocus their professional activities towards embedded LHS research.

- DEIA experiences, goals, and priorities

- Department/Section's commitment to and investment in the applicant's research career development

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What does the program provide?

- 50% FTE up to NIH cap

- Funding to travel to one conference

- project supplies and resources to complete their LHS research projects

- Publication fees

- Mentorship of the HEAHLS Research Education Core Co-Directors (Drs. Mari-Lynn Drainoni and Marc LaRochelle)

- Research and Health System mentors selected based on both project and career goals

Scholar Selection 2025

- Applications will open January 6, 2025

- Due by January 31, 2025

- Seeking suggestions for research topic areas
  - Include these on your evaluation form for today's talk

Please complete an evaluation form for today's talk

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Seminar Series

Next seminar:
Monday December 16, 2024
12:00pm

Implementation Science vs LHS vs QI: What is the difference?

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Other Funded LHS Centers

Title	Institution
PEDSnet Scholars: A National Pediatric Learning Health System Embedded Scientist Training and Research Program	CHILDREN'S HOSP OF PHILADELPHIA
Michigan Embedded LHS Scientist Training and Research (MEL-STaR) Center	UNIVERSITY OF MICHIGAN AT ANN ARBOR
Patient-Oriented Research and Training to Accelerate Learning (Penn PORTAL)	UNIVERSITY OF PENNSYLVANIA
Boston Health Equity & community-Aligned Learning Health System (Boston-HEALHS)	BOSTON MEDICAL CENTER
Washington Learning Health System Embedded Scientist Training and Research Center (WA LHS E-STAR Center)	KAISER FOUNDATION RESEARCH INSTITUTE
Massachusetts Institute for Equity-Focused Learning Health System Science (MIELHSS)	BETH ISRAEL DEACONESS MEDICAL CENTER
Southwest Safety Net Embedded Scientist Training and Research (SSNE-STaR) Center	ARIZONA STATE UNIVERSITY-TEMPE CAMPUS
Realizing Accelerated Progress, Investigation, Implementation, and Dissemination in Learning Health Systems (RAPID-LHS) Center	VANDERBILT UNIVERSITY MEDICAL CENTER
Columbia-Cornell-Einstein EQUIP+ Center for Learning Health System Science	COLUMBIA UNIVERSITY HEALTH SCIENCES
Dartmouth Learning Health System (LHS) Embedded Scientist Training and Research (E-STaR) Center	DARTMOUTH COLLEGE
Learning Health System Embedded Scientist Training and Research Center	UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Promoting Embedded Research in a Learning Health System	JOHNS HOPKINS UNIVERSITY
Learning Health System Embedded Scientist Training and Research (LHS E-STaR) of the North (LEaRN)	UNIVERSITY OF MINNESOTA
Learning Health systems training to improve Disability and chronic condition care (LeaHD)	BROWN UNIVERSITY
UCSD Center for Learning Health Systems Science	UNIVERSITY OF CALIFORNIA, SAN DIEGO
Learning Health System Scientist Training and Research in New Jersey (LHS STAR NJ)	RUTGERS BIOMEDICAL AND HEALTH SCIENCES

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