

**“Training Core:
Building a Comprehensive Training
Program”**

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Presentation Outline

- Overview of the UMass Boston-DF/HCC Partnership Training Core
- Tracking system to measure training outcomes for the partnership

The Training Core Team

Core Directors

Joan Becker, University of Massachusetts Boston

Karen Burns White, Dana-Farber/Harvard Cancer Center

Training Core Manager

Erin Rainone

(The work of the Training Core is also actively guided by the PIs and Internal Advisory Committees)

Core Significance

- Reducing the unequal burden of cancer for ethnic and racial groups depends largely on having **a cadre of culturally sensitive, well informed investigators from underrepresented minority backgrounds.**
- The Training Core **integrates and strengthens training activities and outcomes across all parts of the Partnership,** and at all levels of training.
- The services provided by the Training Core are ensuring that the **students participating in U54-related research experiences receive high quality mentoring, develop specialized skills, and have access to career development opportunities** they will need to successfully pursue cancer and cancer disparities research careers.

Objectives & Specific Aims

Core Objectives

- Increase the number of UMass Boston students, especially from underrepresented backgrounds, who are interested in pursuing careers in biomedical science, research, cancer, and/or cancer-health disparities.
- Increase the number of students who attain graduate degrees in these fields (track by degree—master's, professional, doctorate, post-doctorate) and who successfully pursue careers in these fields.
- Increase the number of students who engage in scholarly activities, including participation in research conferences, poster and oral presentations, and publications.

Objectives & Specific Aims

Specific Aims

- Increase the number of UMass Boston students participating in U54-related training activities over five years by 65% over U56 levels (88 students) for a total of 130 students.
- Involve students in hands-on research experiences in the broad areas of cancer and enhance their understanding of the research process and cancer/cancer disparities, their critical thinking and communication skills, and their ability to do independent research.
- Socialize trainees to the community of science.
- Enhance the mentoring skills of UMB and DF/HCC investigators who are providing research experiences for UMass Boston trainees.
- Develop a system for tracking student progress and assessing the impact on students' interest in and preparation for cancer/cancer disparities research careers.

Core Structure & Operations

Audience	Services
Investigators	<ul style="list-style-type: none">▪ Student Recruitment▪ Cancer and Disparities Research▪ Training and Career Development▪ Student Tracking and Outcomes
Faculty, Post-Doctoral Fellows & Graduate Students	<ul style="list-style-type: none">▪ Mentor Training▪ Postdoctoral Nursing Training Program***▪ Postdoctoral Teaching Experience
Undergraduate Students	<ul style="list-style-type: none">▪ Mentored Research Internships (Learning Contracts)▪ Research Skills Workshops▪ Career Development▪ Participation in Scholarly Activities▪ Annual Research Showcase▪ U54 Partnership Education Day

Core Integration

The Training Core (TC) works collaboratively and synergistically with other U54 Cores, specifically the Survey and Statistical Methods Core (SSMC) and Outreach Core (OC). Examples:

Survey and Tracking System--with the SSMC

- Co-designed and periodically revise the in-take and annual surveys.
- Co-designed new tracking database and identified reporting needs; SSMC programmed the new system and converted the data from the old system.
- SSMC provides regular data on survey responses during the completion period so TC can follow up with non-responders.

Student Training

- Work with the OC to identify student trainees to work on outreach projects and to then develop workshops and experiences that prepare them to be effective community health educators and population science researchers.
- Supporting student placement within the SSM Core to gain experience in survey development and programming.

Some Accomplishments (2013-14)

Training Core Services and Metrics Summer 2013- Spring 2014 Exceeded Most Targets

Service	Metric	Target	Actual
Student Recruitment and Placement	Recruitment sessions	10-15/year	4*/year
	Students in research experiences	26/year	45/year (58% URM)
Research Training and Career Development	Mentor training workshops	2/year; 25 participants total	2/year, 51 mentors total
	Student research skills workshops	3/year; 30 students total	4/year, 71 students total
	Career speakers	4/year; 60 students total	4/year, 93 students total
	Conference participation	4 students per year	6 students
	Research Showcase	20 students/year	22 students/year

*Additional recruitment sessions were deemed unnecessary as the sessions held and PI referrals yielded far more students than available funding can support.

Garnered \$136,000 in institutional and external funding for student training for this past year; \$145,000 committed through December 2014.

Some Accomplishments (2013-14)

Use of Core Services 3/15/13 - 3/15/14				
Project	Recruit & Place	Career Speakers	Scholarly Activity	Tracking
PP1: CY/JR/JT	√	√	√	√
PP2: WZ/JB	√	√	√	√
PP3: JM/EP	√	√	√	√
P1: HP/JM/LR	√	√	√	√
P2: AV/SA-T	√	√	√	√
P3: NG/PY/WZ	√	√	√	√
P4: PRP/GG	√	√	√	√
P5: JA/MIT	√	√	√	√
CURE/ET CURE	√	√	√	√
Community Health Educators – Suppl.	√	√	√	√
*PP3: RA/GA	√			√
*PP4: MB/TB/ARS	√			√
*PP5:RK/PPP	√			√
<i>*Projects that began 9/01/2013</i>				

Tracking Outcomes: Data Sources

- **Application/Profile Sheet.** Demographic and educational information
- **Intake and Annual Survey.** Educational plans, research and career interests, educational progress, work experience, and scholarly activities.
- **UMass Boston Student Information System (WISER).** Verify student enrollment at the university, academic progress, and degree completion.
- **National Student Clearinghouse (NSC).** Enrollment and degree completion information.

Tracking Outcomes

2013 Annual Follow-up Survey was sent (Nov 2013) to the 202 current and past participants in the tracking system and closed in February 2014.

(Surveys were not sent to the new students who were taking intake surveys nor three U-56 participants from the 2012 survey who asked not to be contacted.)

The survey response rate was high at 75% and exceeded the goal of 60%.

Survey Response Rates			
	# Survey Sent	Response Rate	N
CURE	60	72%	43
U-56 Pilots	64	66%	42
U-54 Projects	78	88%	69
Total	202	75%	151

Tracking Outcomes

Since 2003, 220 UMass Boston students have engaged in mentored research experiences

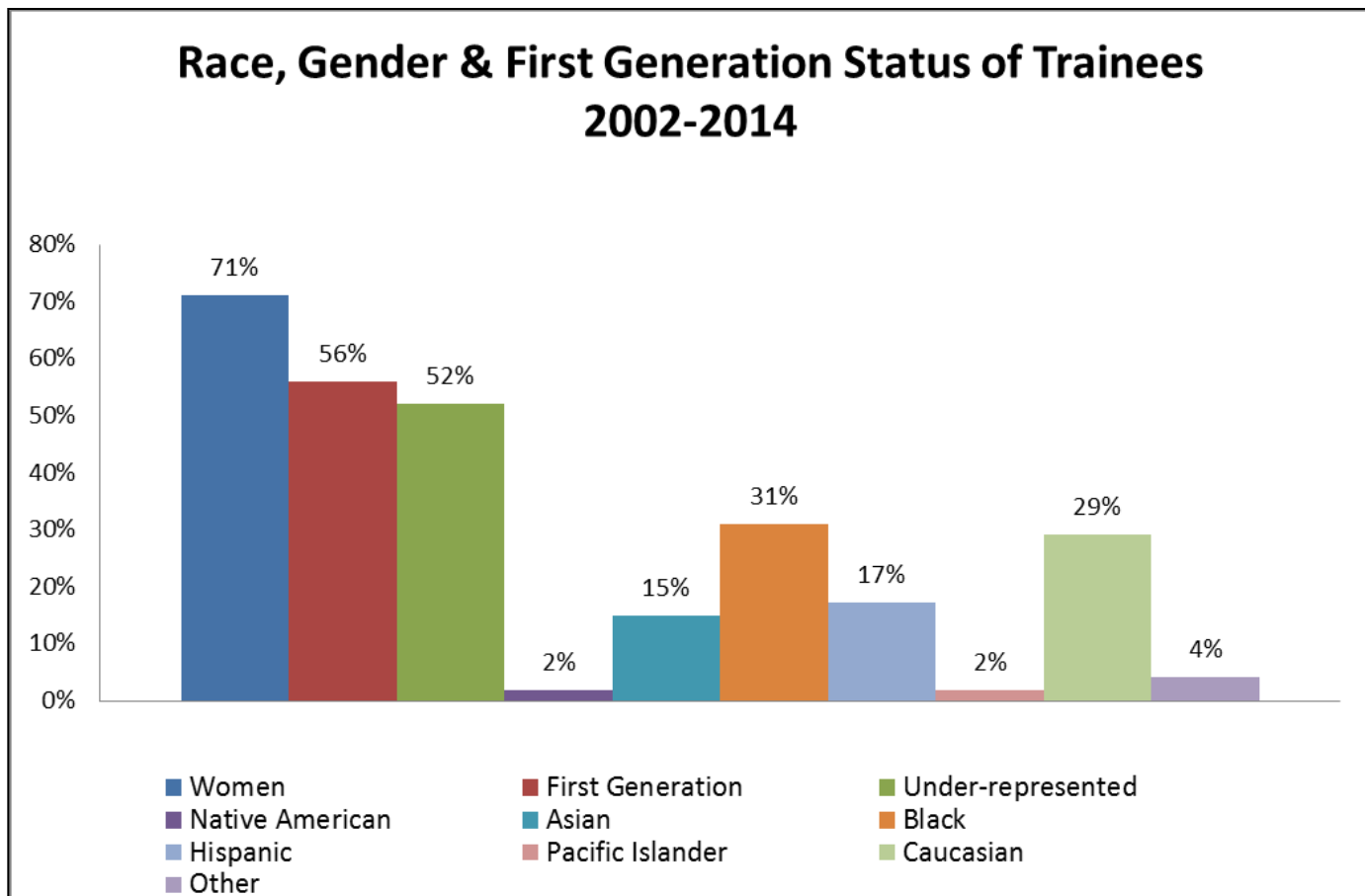
Number of UMass Boston Students Served by Level*					
	Undergrad	PostBac	Graduate	PostDoc	Total
CURE (2003-2014)	60	0	0	0	60
U-56 (2005-2010)	48	0	19	0	67
U-54 (2010-2014)	68	1	20	4	93
Total	176	1	39	4	220

*all trainees as of March 2014

Number of Students by Research Area		
	Number	Percentage
Basic Science	100	45%
Population Science	68	31%
Nursing	35	16%
Clinical	15	7%
Other	2	1%
Total	220	100%

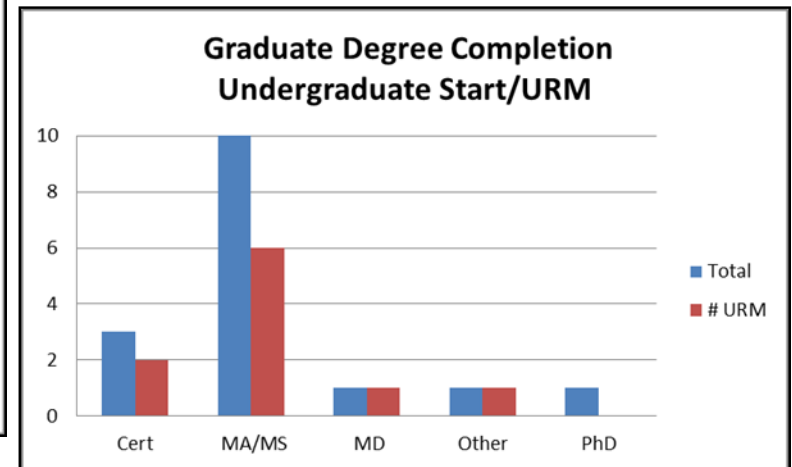
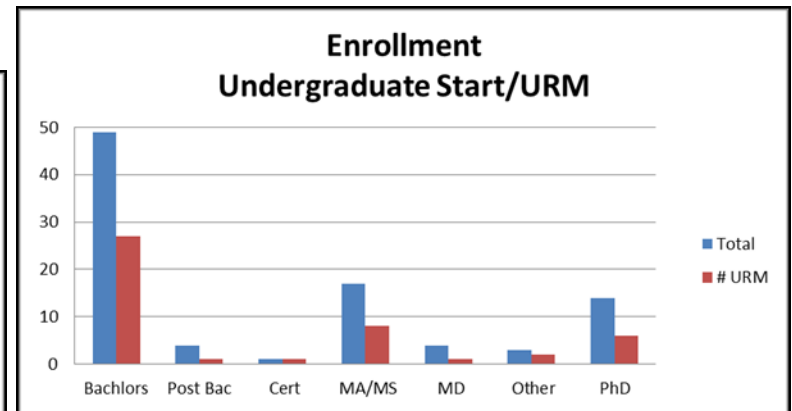
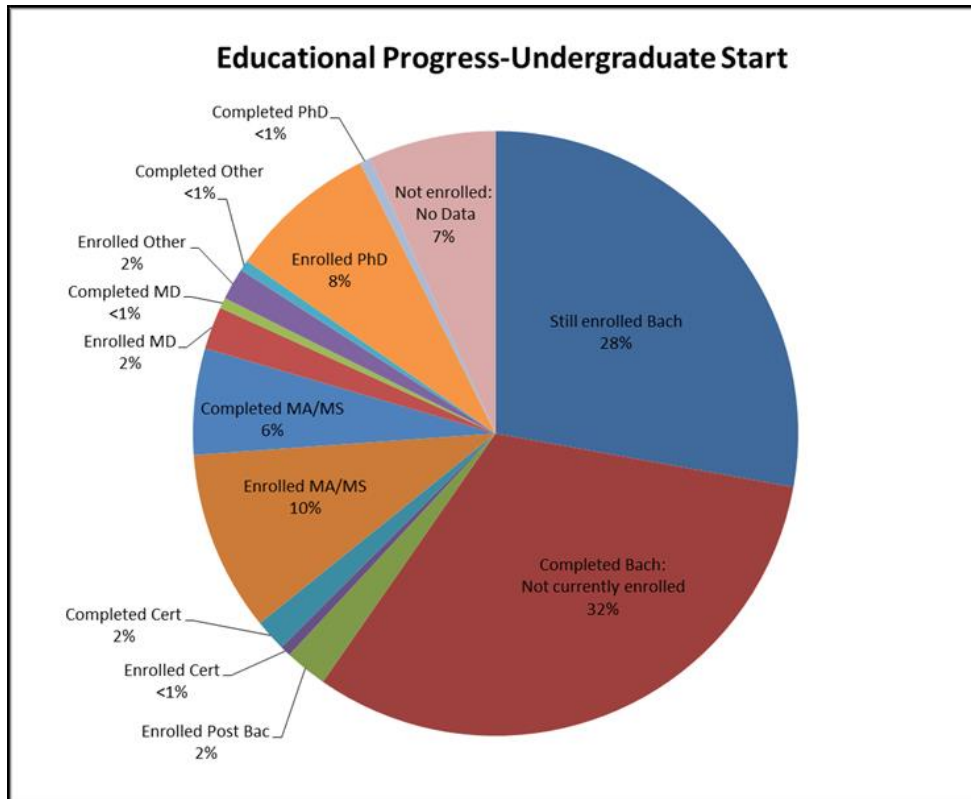
Tracking Outcomes

The partnership is providing important access to biomedical and cancer-related research for racially diverse students, women, and first generation college students.



Tracking Outcomes-Undergrad Forward

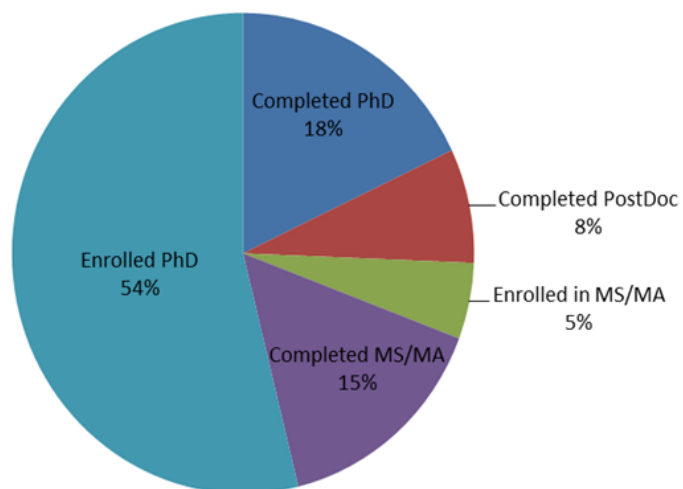
Students participating in mentored research experiences through the U-56/U-54 projects and CURE are completing bachelor's degrees and pursuing graduate degrees; they are earning master's degrees and are beginning to earn PhDs.



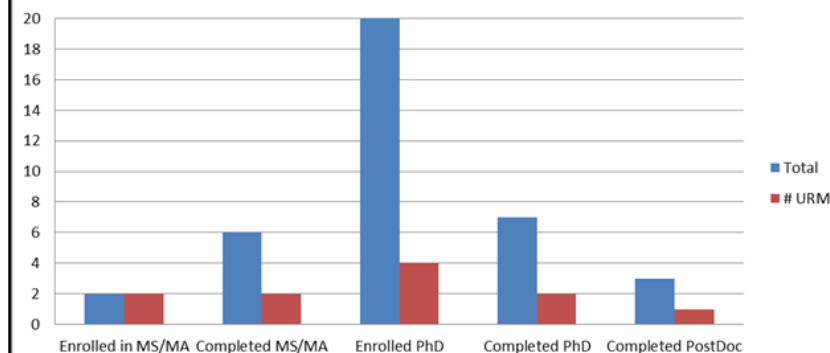
Tracking Outcomes- Grad Forward

Students participating in mentored research experiences through the U-56/U-54 projects and CURE are completing bachelor's degrees and pursuing graduate degrees; they are earning master's degrees and are beginning to earn PhDs.

Educational Progress- Graduate Start



Degree Completion/Enrollment Graduate Start/URM



Tracking Outcomes- Examples

Trainees participating in mentored research experiences through the U-56/U-54 projects and CURE are completing bachelor's degrees and pursuing graduate degrees; they are also pursuing science related careers.

U56 Position Title	Location
Resident Physician	Rhode Island Hospital
Assistant Professor	Georgia Regents University
Dean	Simmons College- Nursing
RN	BIDMC VNA Care Network
VP Nursing and Clinical Services	Dana-Farber Cancer Institute
Administator Director	Mass. General Hospital

U-54 Position Title	Location
Outreach Worker	North End Waterfront Health
Clinic Manager	Whittier Health Center
Lab Technician	Genetic Services Inc. Brigham and Womens Hospital
Research Assistant	Boston University UMass Medical School Northeastern University Providence College

CURE Position Title	Location
Research Associate	Agios Pharmaceutical
Registered Nurse	Brigham and Womens Hospital (4) Codman Square BayRidge Hospital South Shore Hosptial
Science Teacher	Boston Public Schools
Laboratory Technician	Unilever Brigham and Womens Hospital
Chemical Technician	Polestar Technologies
Research Technician	Dana-Farber Cancer Institute Mass. General Hospital University of Rhode Island Moderna Therapeutics Massachusetts Institute of Technology

Tracking Outcomes- Synergistic

- In 2013, trainee survey respondents reported participation in 48 **unique** conferences compared 53 in 2012 and 29 in 2009. The average number of conferences attended by a U-56 student is 2.5, while U-54 and CURE students are similar at 1.5 and 1.9 respectively.
- Trainees reported co-authoring 54 publications (up from 35 in 2012 and 16 reported in 2009).
- Trainees reported receiving 94 scholarships, awards, and fellowships (up from 71 in 2012 and 28 reported in 2009).

Training Core- Future Plans

- Work with PI's to increase the participation of underrepresented students in partnership-sponsored research.
- Continue to ensure trainees have research experiences that include exposure to both UMass Boston and DF/HCC research settings.
- Continue to put systems in place to identify and serve DF/HCC trainees who are directly involved in the U54 research projects.
- Revise the current Intake Survey to match both the new Annual Survey and Tracking Database.
- Preparing manuscript on training outcomes for submission to ASCB's CBE Life Sciences Education.
- Continue to increase external funding for summer/semester internships, research conferences and other scholarly activity.