

UMass Life Sciences Task Force 2008

1

Origins of the UMass Life Sciences Task Force



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Rationale for 2008 Planning Process

2

Charged with crafting university-wide aspirant vision in the life sciences and promoting inter-campus collaboration

UMass System uniquely and strategically positioned to fuel and anchor the life sciences innovation economy across all regions in the state

Key stakeholders within UMass recognized the importance of fostering collaborating, leveraging complementary expertise and optimizing use of resources

With the Governor's emergent life sciences initiative and tremendous advances in life sciences research, UMass needed to take advantage of the "Life Sciences Moment"



UMass Life Sciences Task Force 2008

3

With a coordinated Life Sciences Strategic Plan in place, the University experienced an impressive five year period of growth in life sciences-related education, research and innovation



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Results from the 2008 Plan

4

Mission-related Recommendations

- **Talent:** Grow STEM workforce for Massachusetts' innovation economy
- **Research:** Take advantage of existing and emerging life sciences R&D strengths
- **Innovation:** Catalyze life sciences innovation across all regions of the state

Mission-related Results

- **Talent:** UMass grads with life/health sciences degrees increased from 1,621 in 2007 to 2,758 in 2013
- **Research:** Life sciences research expenditures increased from \$247M in 2008 to \$329M in 2013; while annual licensing revenue averaged \$45.5M
- **Innovation:** UMass is a key participant in more than 15 new life sciences-related centers around the state

UMass Is Driving the Regional Innovation Economy

5

UMass System

Mass Green High Performance Computing Center (Holyoke)

- Center for Clinical and Translational Science
- Mass Tech Transfer Center

UMass Amherst

- Institute for Applied Life Sciences
- Innovation Institute
- Pioneer Valley Life Sciences Institute (Springfield)
- STEM Diversity Institute

UMass Lowell

- Mass Medical Device Development Center (M2D2)
- Bio-Manufacturing Center
- Emerging Technologies and Innovation Center

UMass Amherst

UMass Lowell

UMass Worcester

UMass Boston

UMass Boston

- Integrated Science Building
- Center for Personalized Cancer Therapy
- Venture Development Center

UMass Medical School

- Ambulatory Care Center
- Albert Sherman Center
- Biotech Park
- MassBiologics (Boston)
- MassBiologics SouthCoast (Fall River)

UMass Dartmouth

UMass Dartmouth

- Advanced Technology and Manufacturing Center
- Center for Scientific Computing and Visualization



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Applauding the University's Strategic Investment in the Life Sciences Over the Previous 5-Year Period

6

Excerpt from Mass Bio's "Impact 2020" Report

- ***“UMass’ support of the life sciences through talent development and strategic investments is a prime example of a highly motivated institution with vast resources, committed to helping the state of Massachusetts remain a leader in the field.”***



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Results from the 2008 Plan

7

Implementation-related Recommendations

- **Establish UMass Center for Clinical & Translational Science**
- **Establish life sciences-specific seed funding**
- **Develop new collaborations and partnerships**
- **Pursue strategic capital investments**

Implementation-related Results

- **UMass secured a highly coveted 5-year CTSA award from NIH in July 2010; UMCCTS is now home to more than 900 faculty members across the system**
- **Life Sciences Moment Fund created; has supported 22 inter-campus research projects totaling \$3.1M**
- **UMCCTS; UMII; M2D2; MGHPCC; Pfizer's Center for Therapeutic Innovation; Bio-manufacturing Roundtable**
- **From 2007 to 2013, \$1.2B has been committed across the 5 campuses in life sciences and related facilities (with over \$250M having been invested by the MLSC)**



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

UMass Life Sciences Task Force 2014

8

**Reconvening the Life Sciences Task Force
to Develop a Successor Strategic Plan in
the Life Sciences**

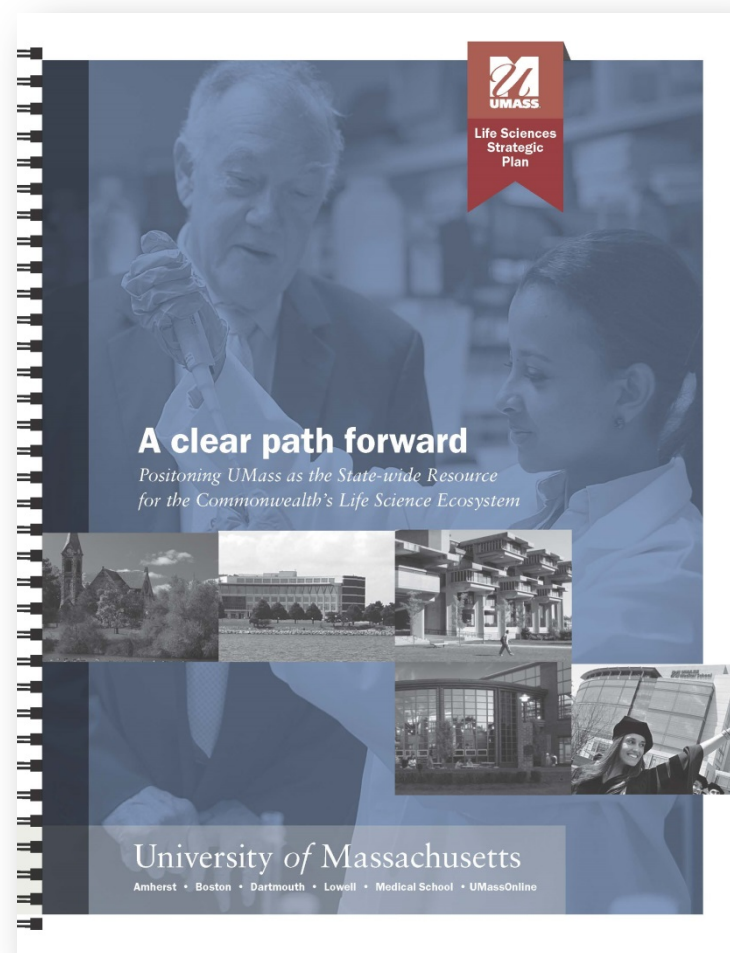


University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Positioning UMass as the State-wide Resource for the Commonwealth's Life Sciences Ecosystem

9



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Life Sciences Task Force 2014 - Rationale

10

Major changes in the economy, health care and R&D funding have markedly changed the landscape for academic institutions, hospitals, government and industry

Now is the time to build on the momentum generated from the first LSTF process and create a framework that continues to strengthen inter-campus collaboration and also promotes and sustains external collaboration

UMass wishes to use the LSTF process to increase its impact on the life sciences ecosystem in Massachusetts

The trend toward Convergence

The significant role the University played in helping to implement the vision of the MA Life Sciences Initiative, demonstrates the importance of having a coordinated and targeted planning document that is aligned with state government and key external stakeholders



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Convergence*

* National Research Council. **Convergence: Facilitating Transdisciplinary Integration of Life Sciences, Physical Sciences, Engineering, and Beyond.** Washington, DC: The National Academies Press, 2014

11

An approach to problem-solving that cuts across disciplinary boundaries

Integrates knowledge, tools and ways of thinking from life and health sciences, physical, mathematical and computational sciences, engineering disciplines and beyond



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Through Collaboration and Strategic Alignment, Can the System Be Greater than the Sum of its Parts?

12

Moving from
this...



To this...



LSTF 2014: Membership

13

Leadership Group	Amherst	Boston	Dartmouth	Lowell	Medical School	System Office
Michael F. Collins, MD (Chair)	Mike Malone, PhD	Andrew Grosovsky, PhD	Tesfay Meressi, PhD	Julie Chen, PhD	Terry Flotte, MD	Tom Chmura
Mike Malone, PhD (Amherst)	Steve Goodwin, PhD	Jill Macoska, PhD	Paul Vigeant, MPA	Steve McCarthy, PhD	Katherine Luzuriaga, MD	John Cunningham, PhD
Andrew Grosovsky, PhD (Boston)	Annette Wysocki, PhD	Zong-Guo Xia, PhD	James Fain, PhD	Mingdi Yan, PhD	Mark Klempner, MD	
Paul Vigeant (Dartmouth)	Marjorie Aelion, PhD	Adán Colón-Carmona, PhD	Erin Bromage, PhD	Mark Hines, PhD	Catarina Kiefe, MD, PhD	
Julie Chen, PhD (Lowell)	Tim Anderson, PhD	Laura Hayman, PhD	Catherine Neto, PhD	Susan Braunhut, PhD	Gyongyi Szabo, MD, PhD	
Terry Flotte, MD (Worcester)	Jim Capistran, PhD	Anahid Kulwicki, PhD	Mohammad Karim, PhD			
Tom Chmura (System)	Loren Walker	John Ciccarelli	Louis Goodman, PhD			
Nate Hafer, PhD (staff)						
Brendan Chisholm (staff)						



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Building on the Momentum of the Initial Planning Process

14

LSTF 2008

Creating a culture of collaboration within the UMass System



LSTF 2014

Leveraging that culture of collaboration to position the UMass System for sustained and impactful external engagement



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

In order to create a new strategic direction focused on external engagement, the LSTF process included frequent interaction with key industry stakeholders

15

Medical Devices (organized by Mass MEDIC) – w/ Philips, Smith & Nephew, J&J and Medtronic

R&D (organized by MassBio) – w/ Vertex, Cubist, Genzyme, Novartis, Capsugel and J&J

Talent (sponsored by MassBio) – w/ Genzyme, Parexel, Millenium/Takeda

Entrepreneurship – w/ Allied Minds, Hygeia Therapeutics, Launchpad Ventures, Mass Medical Angels

Bio IT – w/ Novartis and Clinical Future

Health IT – w/ Everyfit, Castling Group, Home Team Therapy, Reebok, RxApps, Smart Scheduling

Bio-manufacturing – w/ AbbVie, Millipore, Organogenesis, Pfizer, Thermo Fisher and Merrimack Pharma



Industry Feedback Helping to Shape the LSTF Process

LSTF 2014: Strategic Goals

16

Talent

- **Develop a talent ecosystem that encourages interconnectedness among all stakeholders, ensures the highest educational quality at all levels and enables UMass graduates to find success in the state's innovation economy.**

Research

- **Foster an innovative, collaborative and complementary research enterprise that will enhance the breadth, depth and impact of the University's R&D efforts.**

External Engagement & Innovation

- **Position the UMass campuses as hubs for industry engagement, technological innovation and regional development that drive the Commonwealth's innovation ecosystem across all regions of the state.**



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Talent Strategic Objectives

17

Develop a talent ecosystem that encourages interconnectedness among all stakeholders, ensures the highest educational quality at all levels and enables UMass graduates to find success in the state's innovation economy.

- Strengthen job-ready skills, experiential learning opportunities, internship programs and co-ops
- In partnership with industry stakeholders, develop academic programs (i.e. regulatory affairs) that meet the life sciences sector's future workforce needs
- Establish the "Commonwealth Fellows" Program to support doctoral students and associates
- Create term-limited endowed professorships for junior faculty
- Establish the "Presidential Scholars Innovation Fund" to support faculty research efforts and innovation
- Develop and invest in a system-wide student success strategy for undergraduate students in STEM degree programs

Research Strategic Objectives

18

Foster an innovative, collaborative and complementary research enterprise that will enhance the breadth, depth, scope and impact of the University's R&D efforts.

- Support the renewal of the University-wide CTSA grant award
- Expand existing research pilot programs
- Coordinate faculty recruitment and research investments in areas of strategic importance
- Reinvigorate the Commonwealth's R&D Matching Grant Programs
- Establish a support fund for large-scale grant proposals
- Establish a system-wide Research Cores Coordinating Committee & the Core Capital Renewal Fund
- Strengthen system-wide mechanisms that promote faculty networks

External Engagement & Innovation Strategic Objectives

19

Position the UMass campuses as hubs for industry engagement, technological innovation and regional development that drive the Commonwealth's innovation ecosystem across all regions of the state.

- **Create a 5-campus network of life science regional innovation centers**
- **Launch a coordinated public information and outreach initiative that communicates and accelerates the University's impact on the Commonwealth's innovation economy**
- **Enhance and expand campus-based entrepreneurship and commercialization activities**
- **Create a Life Sciences Investment Fund to support innovative and multi-campus research initiatives**

Reciprocal Value Proposition

20

University's Value to External Partners

UMass students will be the future workforce for the Commonwealth's Innovation Economy

UMass Research Enterprise will help to advance the state's global leadership position in life sciences

UMass campuses will serve as a hub for state-wide and regional innovation

Industry's Value to the University

Helping UMass tell its tremendous story

Working with UMass to develop robust internship programs and academic programs linked to industry needs

Advocating for programs and initiatives that benefit UMass (i.e. MLSC)

Facilitating the University's emergence as the go-to institution for industry engagement in Massachusetts



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Industry's Support for the University's Strategic Direction

21

“Medical devices companies have had an effective partnership with UMass over the years thru the Mass Medical Development Device Center -- M2D2 -- and are truly excited about the prospect for expanding our partnership into new strategic areas important to our industry such as "regulatory affairs”

Tom Sommer, Mass MEDIC

“While Massachusetts' life sciences companies have long-standing ties with UMass, we very much appreciate the University's increased emphasis on engagement with industry. The analysis in MassBio's recent Impact 2020 strategic report makes it very clear that the future of the Commonwealth's cluster centers on even closer collaboration between industry, academia and government. We look forward to greatly expanding links with UMass, especially in strategic areas such as life sciences IT.”

Bob Coughlin, Mass Biotech Council

UMass Life Sciences Task Force 2014

22

Implementation Plan/Process



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

LSTF Implementation Steering Committee

23

Michael F. Collins, MD, Senior Vice President for Health Sciences & Chancellor (chair)

Terry Flotte, MD, Executive Deputy Chancellor, Provost, Chief Research Officer and Dean, School of Medicine

Michael Malone, PhD, Vice Chancellor for Research and Engagement, UMA

Tom Chmura, Vice President for Economic Development, UMass System

Julie Chen, PhD, Vice Provost for Research, UML

Tesfay Meressi, PhD, Associate Provost for Graduate Studies, UMD

Andrew Grosovsky, PhD, Dean, College of Sciences and Mathematics, UMB

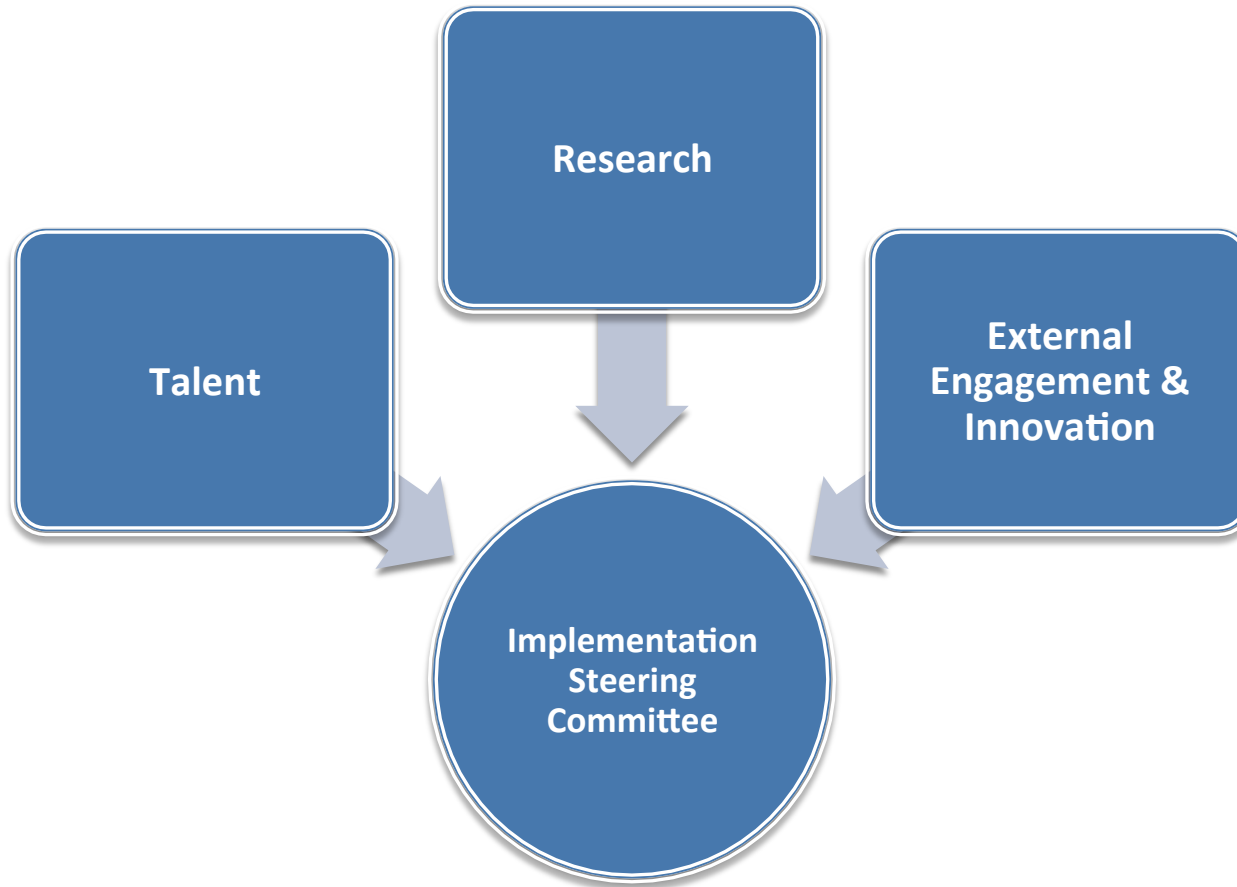


University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

LSTF Implementation Work Groups

24



Implementation Work Groups – Membership

25

Talent

Andrew Grosovsky, PhD, UMB (Co-chair)

Tesfay Meressi, PhD, UMD (Co-chair)

Elizabeth Dumont, PhD, UMA

Susan Braunhut, PhD, UML

Luanne Thorndyke, MD, UMMS

John Cunningham, PhD, System Office

Research

Terry Flotte, MD, UMMS (Co-Chair)

Julie Chen, PhD, UML (Co-chair)

Louis Goodman, PhD, UMD

Peter Reinhard, PhD, UMA

Zong-Gao Xia, PhD, UMB

Engagement & Innovation

Michael Malone, PhD, UMA (Co-Chair)

Tom Chmura, System Office (Co-chair)

John Ciccarelli, UMB

Ramprasad Balasubramanian, PhD, UMD

Nate Hafer, PhD, UMMS

Jennifer Berryman, UMMS

Steve McCarthy, PhD, UML

Abi Barrow, PhD, System Office




University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline

Implementation – Next Steps

26

Each Implementation Work Group to meet to begin mapping out multi-year objectives, setting initial priorities, establishing metrics and identifying key stakeholders



Steering Committee to develop work plan for first year in consultation with work groups



Roll-out and communication of final report to campus constituencies and external stakeholders to be coordinated