

Forum on the Governor's Life Sciences Initiative

***Global Leader in Medicine and Science:
“Growing Ideas to Products - Creating Cures and Jobs”***

June 21, 2007

Charles Hotel

Cambridge, MA



EXECUTIVE OFFICE OF
HOUSING AND ECONOMIC DEVELOPMENT

MASSACHUSETTS LIFE SCIENCES CENTER

Massachusetts **LIFE SCIENCES** Collaborative

Agenda

Welcome and Introductions

Governor's Life Sciences Initiative and Current Progress

Objectives and Format of Breakout Sessions

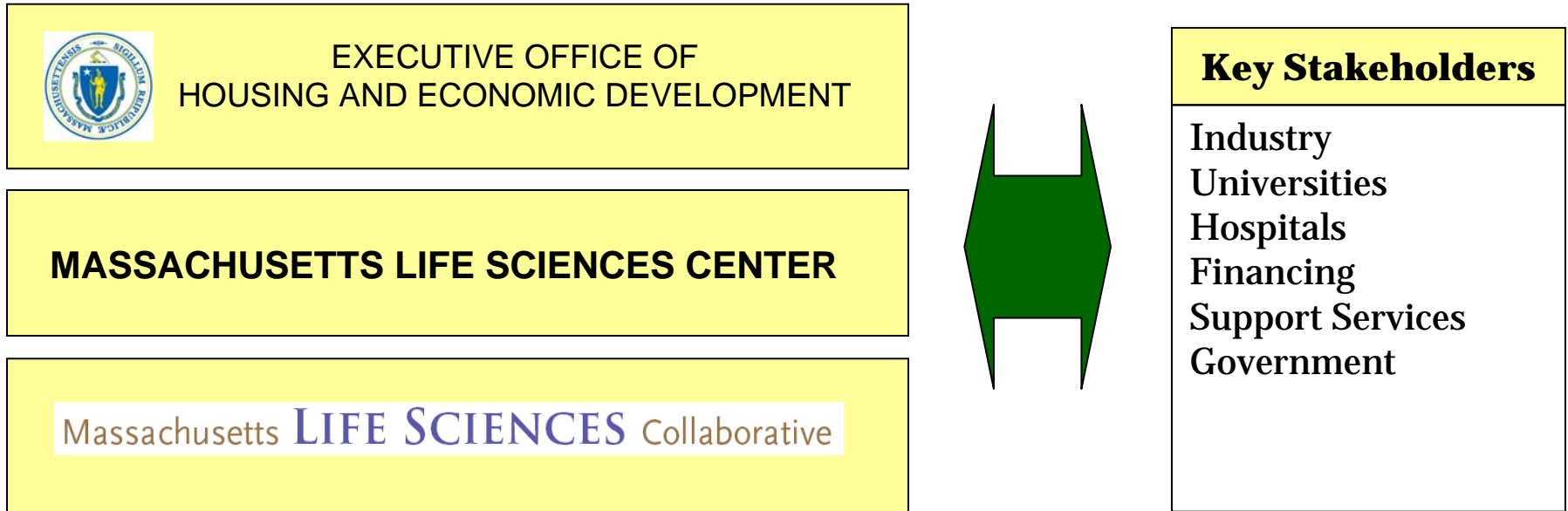
Remarks

Breakout Sessions

Session Reports

Wrap-up and Next Steps

Overview of Life Sciences Forum



- Provide venue to discuss key elements of Governor's Life Sciences Initiative
- Gather input to incorporate into various programs
- Push forward continuous dialogue with stakeholders regarding this Initiative

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Governor's Life Sciences Initiative Builds on Existing Strengths

- Vibrant research and learning environment with our universities, public and private, academic medical centers, and research facilities
- National per capita leader in grant awards from the National Institutes of Health (NIH)
- Robust entrepreneurial tradition and a vibrant Life Sciences cluster with nearly 1 out of 7 jobs being in the life sciences
- National per capita leader in business grant awards
 - Small Business Administration for the Small Business Innovation Program (SBIR)
 - Small Business Technology Transfer Program (STTR)

Addresses Key Challenges

Fierce Competitive Environment

- Flat NIH funding makes other states that have invested in funding research and development more competitive
- Federal stem cell prohibition resulted in massive activity at the state level that has resulted in efforts to attract Massachusetts researchers and companies
- California, New York, New Jersey and other states have committed to major investments in the life sciences
- The United Kingdom, Ireland, China and Singapore have developed coordinated strategies to attract researchers and companies
 - H-1B visa shortage means many of the world's best and brightest will go elsewhere

Identified Goals of this Initiative

- **Public/Private partnerships around Funding and Investment Strategies**
 - Create new jobs
 - Spur innovative research
 - Strengthen investments in higher education and workforce training
- **Targeted investments at each stage of the development and commercialization cycle that result in robust job creation**
- **Regional Innovation Centers that attract researchers and companies and grow cures and jobs**
- **Life Saving Medical Therapies & Enhanced Standard of Living throughout the Commonwealth**

Governor's \$1B Life Sciences Initiative

The Five Point Plan: “Enhancing and Supporting the Development Cycle”

- 1. Funding: A real investment in the future: \$1 Billion over ten years**
- 2. Planning: A Comprehensive strategy**
- 3. Research: Promoting ideas and innovation**
- 4. Development: Building the innovation infrastructure**
- 5. Commercialization: A healthy economy and skilled workforce**



Launched at BIO 2007

1 Funding: A real investment in the future: \$1 Billion over ten years in Public \$

- \$500 million in capital funds toward public higher education and other facilities and equipment to be used in collaboration with the life sciences industry
- \$250 million on research grants, fellowships, and sector-wide workforce training initiatives
- \$250 million in tax benefits, targeted toward job creation
- \$250 million in private sector matching funds for capital, research grants, fellowships, training etc.

2 Planning: A Comprehensive strategy

- A reformed & strengthened Massachusetts Life Sciences Center
- The Center will have a new mission, focused on medicine and science – not politics or ideology
- The Commonwealth will work closely with Industry, Private Higher Education, Academic Medical Centers and the Mass Life Science Collaborative

3 Research: Promoting ideas and innovation

- Life Science Fellowship Grants “Gap Funding” to promote new cures and retain researchers in Massachusetts
- NIH gap funding grants to bridge researchers prior to receipt of NIH grant
- Stem Cell research funding to overcome federal prohibitions and leverage existing global strength
- RNAi funding to build upon the promising work of UMass Nobel laureate, Dr. Craig Mello

4

Development: Building the innovation infrastructure

- Strengthen Life Science research in Higher Education Institutions and Academic Medical Centers through collaboration and funding partnerships
- Create the Massachusetts Stem cell bank, the largest repository of stem cell lines in the world
- Create Massachusetts Life Sciences “Innovation Centers,” regional facilities to enable research collaborations and entrepreneurship models that defray costs by sharing
- Fund the purchase of equipment and instrumentation, to be used by public and private entities

5 Commercialization: A healthy economy and skilled workforce

- Grant funding in areas like devices, and drug development, where the collaboration is intended to translate Massachusetts discoveries into health applications manufactured in Massachusetts
- Funding to build unique innovation strengths of Massachusetts' small businesses and non-profits
- Tax Incentives specific to job creation and manufacturing of products invented or developed here
- Workforce training support targeted to specific skills required within the life sciences sector

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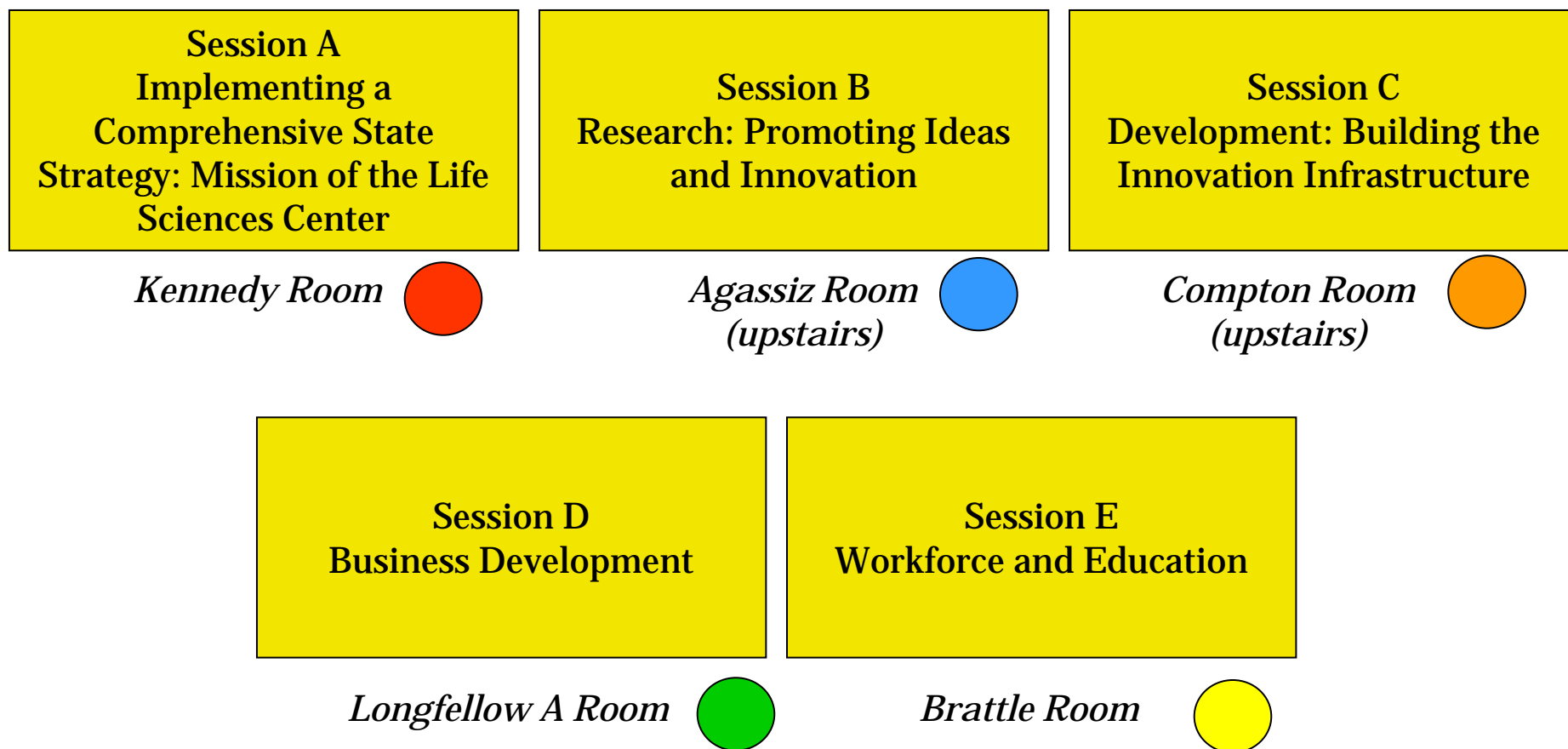
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Life Sciences Forum Break-out Sessions

Sessions Based on Five Point Plan



Break-out Session Format and Objectives



Focus on elements of the Governor's Life Sciences Initiative as it pertains to the research enterprise and innovation value chain

- Present the “givens” of the Initiative in this area
- Discuss opportunities and challenges regarding these elements of the Initiative
- Determine 3-5 key actions and priorities

After break-out sessions, key findings to be reported to entire group.

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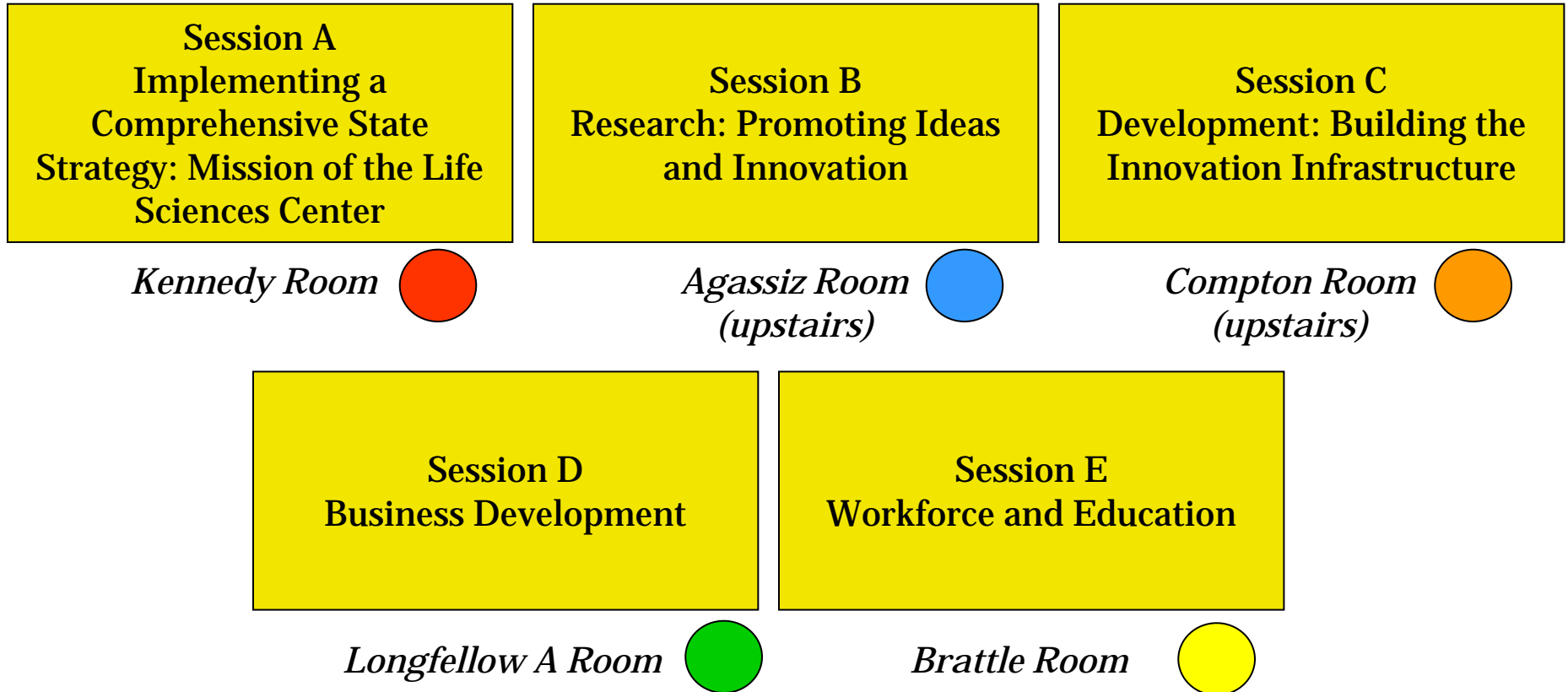
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Life Sciences Forum Break-out Sessions

10AM – 11:30AM



General session will re-commence at 11:45AM in Kennedy Room

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Session Report Formats

- Present report template (5-7 minutes)
 - Needs and opportunities
 - Ways to address through Governor's Initiative
 - Immediate actions and priorities
- General discussion (8-10 minutes)

- **Since we have limited time, chairs will need to stay within 15 minutes**

Reports from Breakout Session E

Workforce and Education

Needs and opportunities	Ways to Address through Governor's Initiative	Immediate Actions and Priorities
<p>*Labor demand and supply bottlenecks_</p> <p>IT, Engineering, Bachelor's Bio, Tech</p> <p>*Career education in life science</p> <p>* Teacher quality and instruction</p> <p>* Integrating WF/Econ Dev strategies</p>	<p>Build on existing capacity of state's regional vocational system and post secondary system—both public and private</p> <p>Connecting IT/Eng to life science specialties</p> <p>Expand supply of math science teachers through new pathways to teacher cert</p> <p>Prof development for teachers linked to internships in biotech industries</p> <p>Introducing life science careers in El/Sec schoo</p>	<p>*Keep MCAS standards rigorous</p> <p>Increase math requirement to 4 years at secondary</p> <p>Increase teacher externship opportunities</p> <p>Build strong math teacher pipeline</p> <p>Connect students to industry</p>

Reports from Breakout Session D

Business Development

Needs and opportunities	Ways to Address through Governor's Initiative	Immediate Actions and Priorities
xxx	xxx	xxx
See Following Slides		

Business Development

- Need
 - Don't Take our Lead in Life Sciences for Granted
 - Bring in New Companies
 - Keep Existing Companies
- Opportunity
 - Enhance our competitiveness now and forever
- How
 - \$250 Million Tax Incentives
 - Industry
 - Cities and Towns
 - \$250 Million Research Grants
 - \$250 Million Matching Funds

Priorities for Tax Incentives

- **1 Job creation**
 - Short and long term
- **2 Life science industry sustainability**
 - Direct industry
 - Service providers

Tax Incentive Recommendations

- **1 Tax credit refund program**
 - Specified per company financial cap
- **2 Broaden sales and tax use exemptions**
 - Extend to bricks and mortar
 - Easier for R&D companies to access
- **3 Eliminate Massachusetts throwback tax**

Priorities for Research Grants

- 1 Encourage research innovation in Massachusetts
- 2 Facilitate movement from Research to Development
- 3 Fill funding gap
 - Post start up *but* Pre Venture Capital or IPO
- 4 Expand workforce available to life sciences

Research Grant Recommendations

- 1 Relocation and retention grants
- 2 Scale up grants
 - Manufacturing
 - Clinical validation
- 3 Life science curriculum grants
 - Workforce development
- 4 Clinical candidate development grants
- 5 Create Massachusetts specific SBIR-like grants

Immediate Actions and Priorities

- Include Major Recommendations in July Filings
- Convene Area Experts to clarify recommendations
- Define Life Sciences sector companies
 - Eligibility
- *“The Massachusetts Magnificent”*

Reports from Breakout Session C

Development: Building Innovation Infrastructure

Needs and opportunities	Ways to Address through Governor's Initiative	Immediate Actions and Priorities
<ul style="list-style-type: none"> • Sensitivity to differing developmental stages – regional differences of ecosystems in 1) Eastern MA and 2) Central, and 3) South Coast & Western Regions • Better job convening industry and academia – overcome cultural gap – “co-localize” • Less need for focus on most basic research • Access to shared facilities and shared banks of resources – tissues, equipment 	<ul style="list-style-type: none"> • Ensure a clear regional locus first • Competitive review awards process by industry, VCs, academics <ul style="list-style-type: none"> – Strong academic core – Medical/clinical – Prospect of business & commercialization – Private-sector matching – Science and business • Limit bureaucracy, don't put IP at risk in collaboration • Focus on equipment and capability as opposed to only physical “space” 	<p>For innovation Centers</p> <ul style="list-style-type: none"> • Facility where there isn't yet, may be virtual or physical • Critical equipment, people and services shared • Translational research, via a healthy competitive process to test viability • Money spent to become intellectual locus • Local governments proof of capability and resources

Report from Breakout Session B

Research: Promoting Ideas and Innovation

Needs and opportunities	Ways to Address through Governor's Initiative	Immediate Actions and Priorities
<p>Models for Partnership between Public/Private industry</p> <p>Need to keep young talent in research in the Commonwealth</p> <p>Gap funding: innovative high risk, lab => preclinical trials</p> <p>Promoting research that supports the end goals of the Life Sciences Initiative</p> <p>Opportunity to develop a research structure, process and infrastructure</p> <p>Incent corporations to support academic research</p>	<p>Matching funds; collaboration around space, equipment</p> <p>Fellowship funding, support interdisciplinary research, transition of non-life scientists to translational science</p> <p>Multi-year stability and continuity</p> <p>Public/private matching of funding</p> <p>Be sure we have all disciplines of science funded (bioinformatics, biophysics, computer science, nanotechnology)</p> <p>Governance structure of the entity needs to be non-biased, scientifically based and transparent</p>	<p>Young talent – fellowship and gap funding</p> <p>Stem cell bank – not just bricks and mortar, but the research support and getting together around the idea that people need to be trained, there needs to be a two-way street around the flow of information, uniform administration, governance and consideration of ethics/IP</p> <p>Recommendation not to piggyback on the NIH process, but to design a decision-making process that is unique to the needs of the Commonwealth</p> <p>Capture learnings for implementation of this initiative in MA</p> <p>The legislation should not put these ideas into statute; the priority is to get the right governing body and leadership for this initiative</p>

Report from Breakout Session A

Implementing State Strategy

Needs and Opportunities	Ways to Address through Governor's Initiative	Immediate Actions and Priorities
<p>Strong Leadership -CEO vs. Executive Director</p> <p>Board Governance/Processes -diversity -not too unwieldy -ability to adapt/nimbleness -expertise/ competencies</p> <p>Critical Importance of Measurable Outcomes</p> <p>Capitalizing on Available Expertise and Assets</p>	<p>Clarity of mission/vision -manage public expectations</p> <p>Sustainability/Continuity -funding -leadership</p> <p>Metrics -job creation/job retention -multiplier effects -leverage of 3rd party funds -leverage of relationships</p>	<p>Adoption of legislation to affect changes in governance</p> <p>Population of leadership on board and executive staff positions</p> <p>Develop strategic plan for implementation of Governor's initiative</p>

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Next Steps

- Minutes to be distributed and video posted on web-site
- Legislation to be filed next month
- Subsets of group to meet in the months ahead to provide further input and direction
 - Efforts to be combined with convening of Life Sciences Collaborative Strategic Task Forces
 - Next Massachusetts Life Sciences Collaborative Meeting on July 25

Thank you for your participation



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