



# Investor Day

October 28, 2013



The matters discussed in this presentation include forward looking statements which are subject to various risks, uncertainties, and other factors that could cause actual results to differ materially from the results anticipated. Such risks and uncertainties include but are not limited to the success of BioTime in developing new stem cell products and technologies; results of clinical trials of BioTime products; the ability of BioTime and its licensees to obtain additional FDA and foreign regulatory approval to market BioTime products; competition from products manufactured and sold or being developed by other companies; the price of and demand for BioTime products; and the ability of BioTime to raise the capital needed to finance its current and planned operations. Any statements that are not historical fact (including, but not limited to statements that contain words such as "will," "believes," "plans," "anticipates," "expects," "estimates") should also be considered to be forward-looking statements. Forward-looking statements involve risks and uncertainties, including, without limitation, risks inherent in the development and/or commercialization of potential products, uncertainty in the results of clinical trials or regulatory approvals, need and ability to obtain future capital, and maintenance of intellectual property rights. As actual results may differ materially from the results anticipated in these forward-looking statements they should be evaluated together with the many uncertainties that affect the business of BioTime and its subsidiaries, particularly those mentioned in the cautionary statements found in BioTime's Securities and Exchange Commission filings. BioTime disclaims any intent or obligation to update these forward-looking statements.

# The Vision

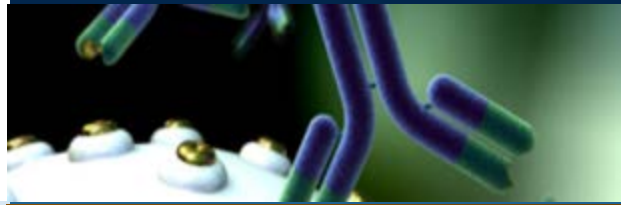
Enable novel regenerative therapies for some of the largest unsolved problems in medicine

## Recombinant DNA Technology



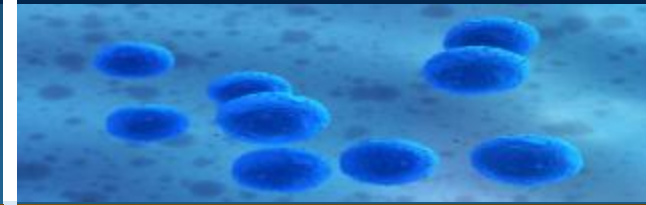
- 1974 – Gene cloning technology developed
- 1976 - Moratorium on rDNA research initiated led to established guidelines on rDNA research
- 1989 – First \$B product EPO
- Today, products from the use of rDNA technology are ubiquitous
- >140 clinical trials
- Current Global Market \$75 B

## Monoclonal Antibodies



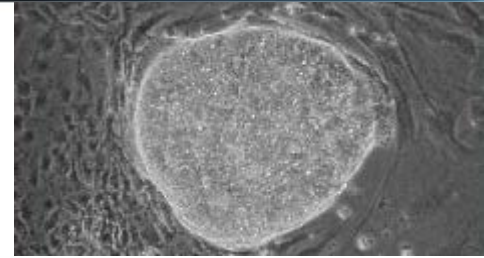
- 1975 - Hybridoma technology developed
- 1997- First \$B Product Rituximab
- Advances in Mab Engineering
- Today, eight of the 20 best-selling biotechnology drugs in therapeutic monoclonal antibodies
- > 200 clinical trials
- Current Global Market \$44 B

## Regenerative Medicine



- 1998 – Embryonic Stem Cells allowing for the first time in the history of medicine the manufacture of all human cellular components
- 2001 – U.S. Federal funding restriction (reversed in 2009)
- 2010 – 1<sup>st</sup> hES Clinical trial
- Future – 1<sup>st</sup> \$B product

## Two Defining Characteristics of hESCs



### Pluripotency

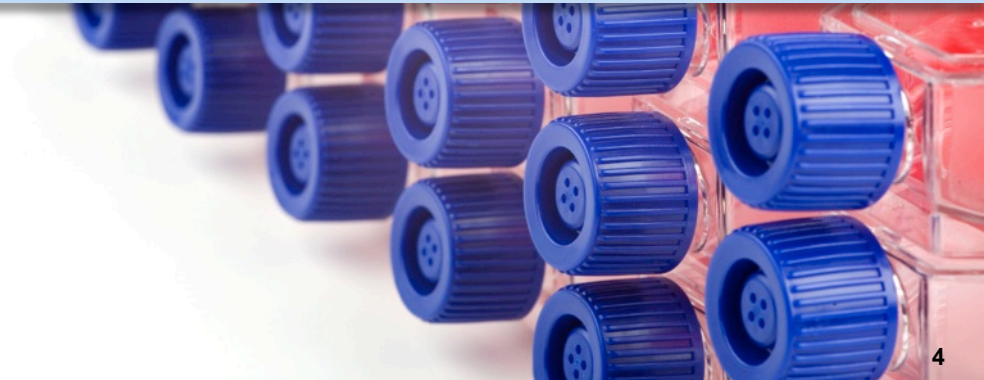
Any functional cell type can be produced  
Permanently functional replacement cells

**Not Possible With  
“Tissue Sourced”  
Stem Cells**

### Indefinite Replicative Capacity

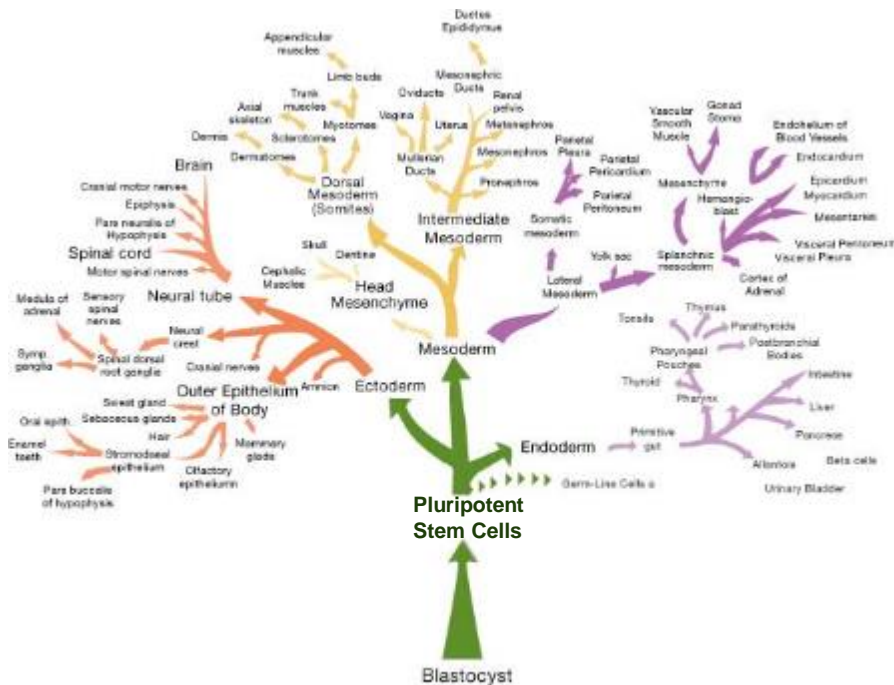
Scalable batch production

**Not Possible With  
“Tissue Sourced”  
Stem Cells**

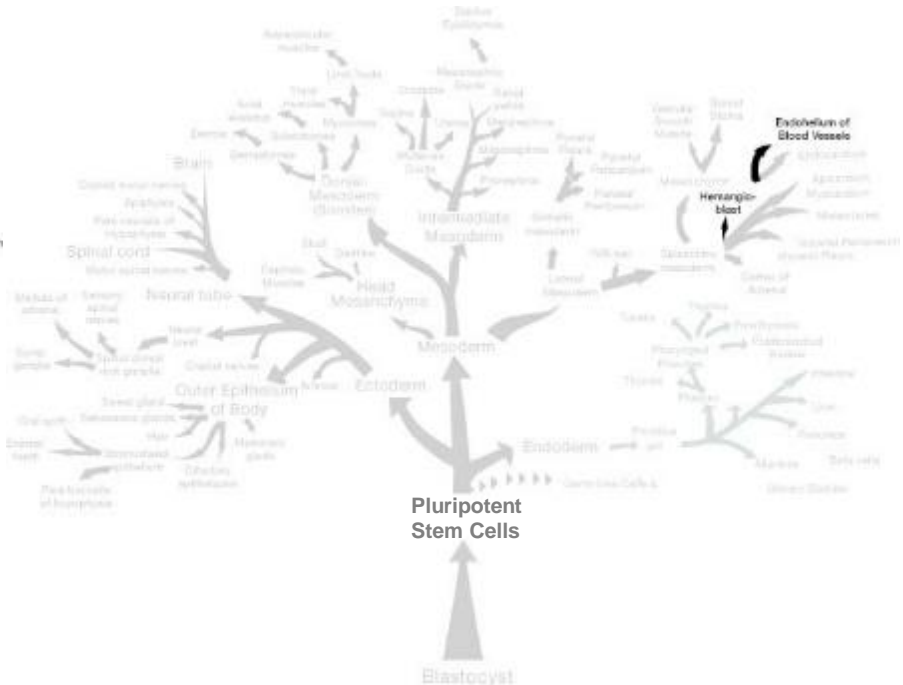


# Pluripotent vs. Adult Stem Cells

Pluripotent stem cells allow for the first time in history the capacity of medicine to produce all human cell types



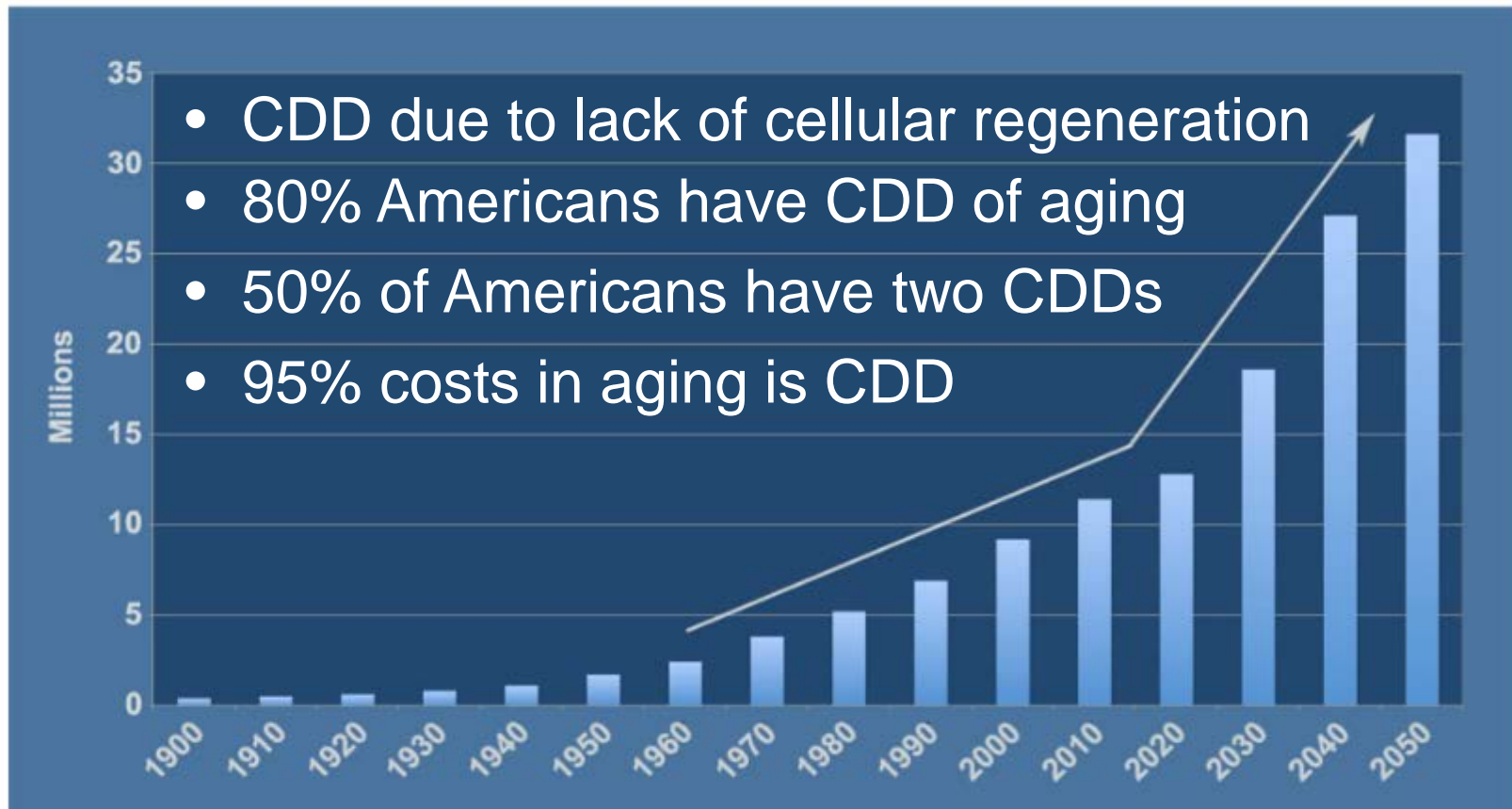
**Pluripotent Stem Cells**



**Adult Stem Cells**

# The Mission

A global tsunami of health care costs from ineffectiveness of drugs to treat chronic degenerative disease (CDD)



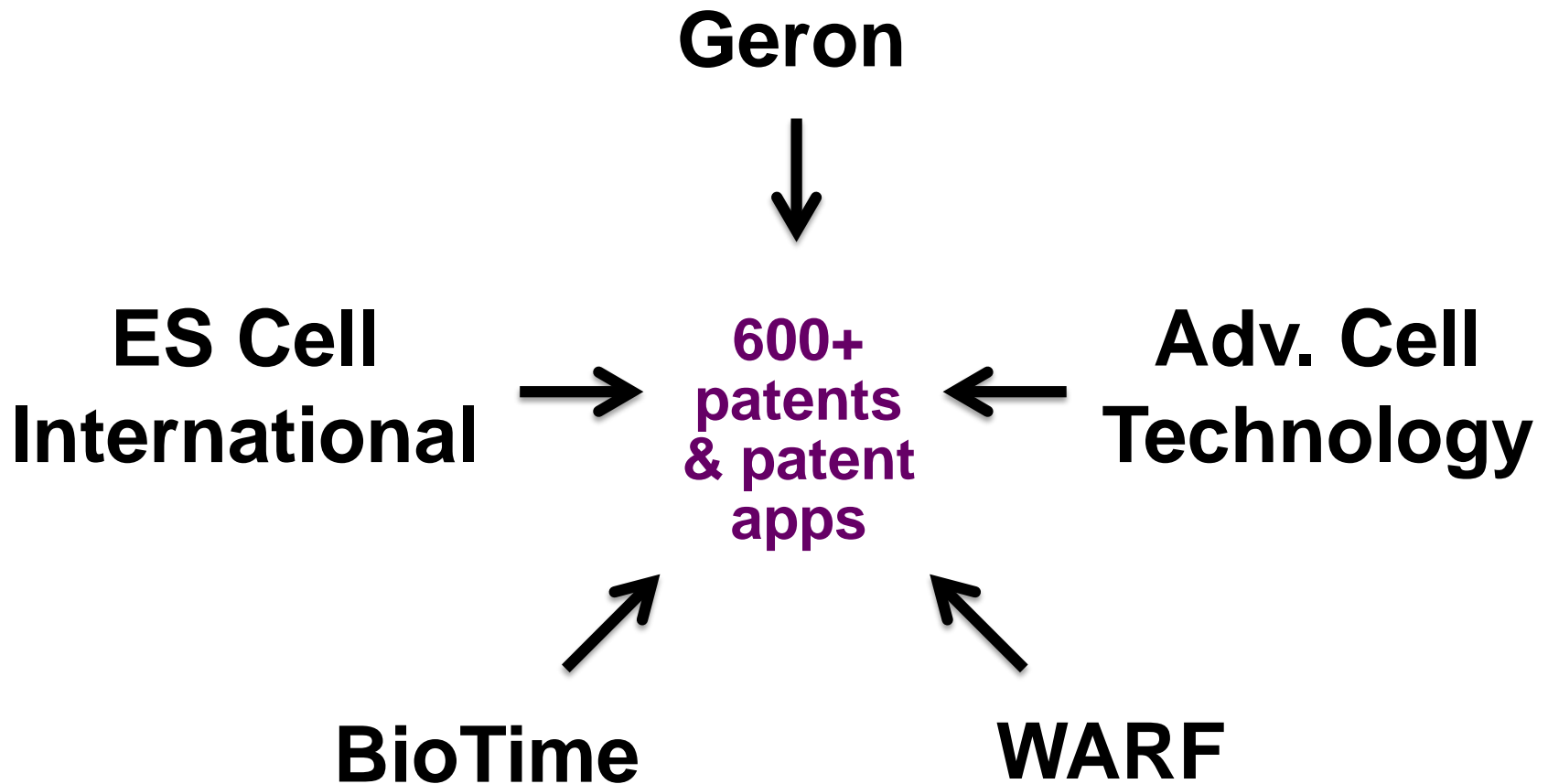
Source of data on projected growth of US population: US Census Bureau

To lead in the application of pluripotent stem cell technology for regenerative therapeutic applications in age-related degenerative disease.

- Become the technology leader in pluripotency



## *The Technology Leader*



- Become the technology leader in pluripotency
- Identify leading applications in age-related degenerative disease where:
  - The addition of cells would be therapeutic
  - Less concern for transplant rejection
  - Large unmet need

<b>Indication</b>	<b>Potential Economic Impact (US)</b>
Cardiovascular Disease	\$316 Billion
Non-Healing Wounds	\$35 Billion
Alzheimer's Disease	\$200 Billion
Parkinson's Disease	\$23 Billion
Musculoskeletal	\$850 Billion
Diabetes	\$200 Billion
Ocular	\$50 Billion

# The BioTime Family of Companies



# OPC1: hESC-Derived Oligodendrocyte Progenitor Cells

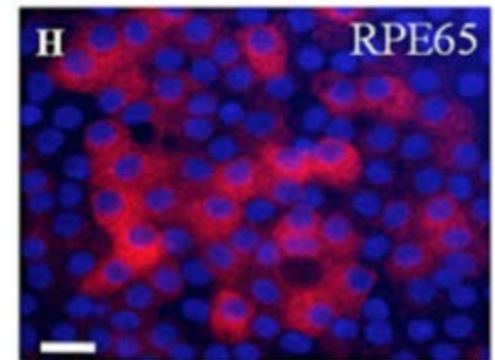
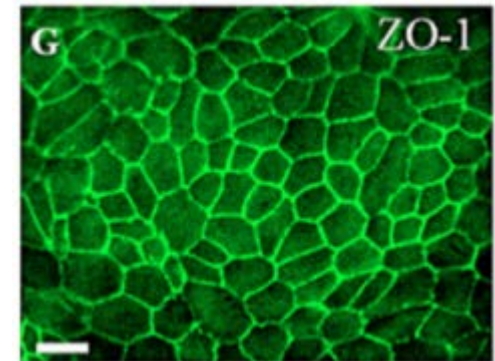


- Safe and feasible in world's first clinical trial of human embryonic stem cell-derived therapy
- Poised to continue with P1/P2a study
- Follow-on opportunities in MS, Stroke, other neurodegenerative diseases

Current treatment market estimated > \$10B



- 7.3 million have early stage dry AMD in US
- Any effective treatment expected to achieve blockbuster sales
- OpRegen<sup>®</sup> – Suspension of retinal pigment epithelial (RPE) cells for dry age-related macular degeneration (AMD)
- OpRegen<sup>®</sup> Plus – Matrix bound RPE cells for dry AMD
- Partnered with TEVA



- Become the technology leader in pluripotency
- Identify leading applications in age-related degenerative disease where:
  - The addition of cells would be therapeutic
  - Less concern for transplant rejection
  - Large unmet need
- Balance of near-term yet strategic products

## HyStem Matrices







- More than 14 Million page views from more than 3,000 institutions world-wide, including academia, research hospitals, patent offices, and leading biotech and pharma
- 2.25 million unique visitors in the past 12 months
- GeneCards® consistently leads in top positions for gene search results in Google

# ESI – Cell Based Research Products that are Translatable to the Clinic

Research

Clinic



PureStem Progenitors,  
*more appropriate  
for therapy*

cGMP Embryonic  
Stem Cells



HyStem's cGMP  
Hydrogels



mRNA-based cellular  
reprogramming products  
*without clinically problematic  
integrating genetic materials*



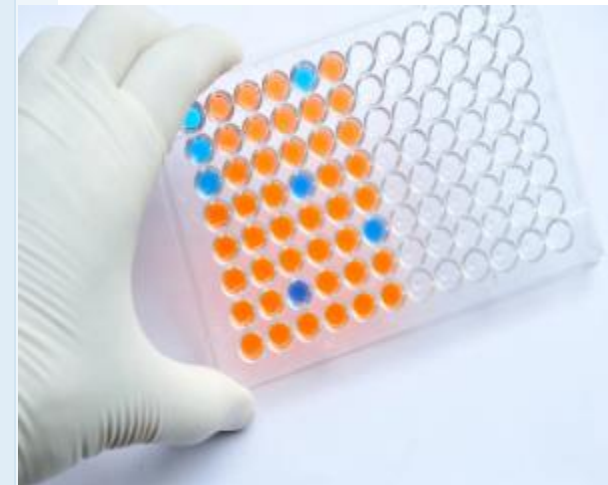
mRNA-sequencing technology  
coupled with web-based data  
display and e-commerce  
technologies

## A low cost diagnostic to be tested in the recurrence population for breast cancer



### PanC-Dx™ Breast

- Designed to detect pan-cancer as well as tumor-specific markers with superior sensitivity, specificity and positive predictive value
- Requires only a simple, easily interpreted, low-cost antibody-based blood test used as a complement to and/or replacement for current screens
- Positive test would identify patients at risk allowing for the initiation of imaging, biopsy, pathology
- On track for testing to begin by EOY 2013



# BioTime Companies Product Development Pipeline

## Therapeutics

Platform	Pre-Clinical	Design control / IND enabling	Clinical development			Regulatory Pathway
			Safety	Efficacy	Pivotal	
<b>HyStem<sup>®</sup> Renevia</b>	Injectable for the treatment of lipoatrophies					CE Mark as a medical device
<b>HyStem<sup>®</sup> Reglyde</b>	Protection following surgery		N/A	N/A	N/A	510 (k) device
<b>HyStem<sup>®</sup> Premvia</b>	Management of ulcers, burns, etc		N/A	N/A	N/A	510 (k) device
<b>OPC-1</b>	Spinal cord injury					BLA/MAA
<b>OpRegen</b>	Age Related Macular Degeneration		2014			BLA/MAA
<b>VAC-1</b>	Cancer vaccine – anti-telomerase					BLA/MAA

## Diagnostics

Indication	Research	Development	Clinical Validation	Commercialization
<b>Breast</b>	Recurrence Setting		Initiation by YE2013	
<b>Bladder</b>	Recurrence Setting		Initiation by YE2013	
<b>Lung</b>	High Risk Screening			

- Diversified, lower-cost, lower-risk strategy
- Not a bet on a single clinical program
- Multiple, growing revenue streams currently
- Five clinical phase programs by Q4 2013
- Focus on low-cost, low-risk, near-term programs
- Partnering strategy for select high-cost potential blockbusters
- Subsidiaries often invite outside investors, corporate partners
- Capitalize on lack of generic or biosimilar pathways

# Agenda

02:45-03:15 PM	Asterias Biotherapeutics	Thomas Okarma, CEO
03:15-03:35 PM	ES Cell Intl/BioTime Asia	Jeffrey Janus, CEO
03:35-03:55 PM	BioTime HyStem Update	William Tew, CCO
03:55-04:15 PM	Cell Cure Neurosciences	Charles Irving, CEO
04:15-04:30 PM	Coffee Break	
04:30-04:45 PM	Featured Speaker	Eric Shadt, Icahn School Med.
04:45-05:10 PM	LifeMap Sciences	David Warshawsky, CEO
05:10-05:35 PM	OncoCyte Corp.	Joseph Wagner, CEO
05:35-05:50 PM	ReCyte Therapeutics	David Larocca, VP R&D
05:50-06:10 PM	OrthoCyte Corp.	Francois Binette, VP R & BD
06:05-06:20 PM	Financial Overview	Robert Peabody, CFO
06:20-06:30 PM	Closing Remarks	Michael West, CEO
06:30-07:30 PM	Cocktails & hors d'oeuvres	