



BIOHOUSTON

Building the Life Science Future



Our Energy.  
It sets us apart.

"...this city of Houston, this State of Texas, this country of the United States was not built by those who waited and rested and wished to look behind them."

President John F. Kennedy  
Rice University, September 12, 1962

# Houston's History: Big Ideas. Big Accomplishments.



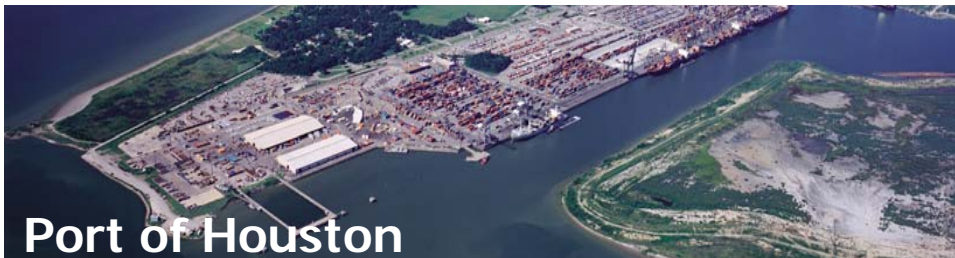
## NASA

- Built Johnson Space Center in 1962
- 16,000 people focused on high technology



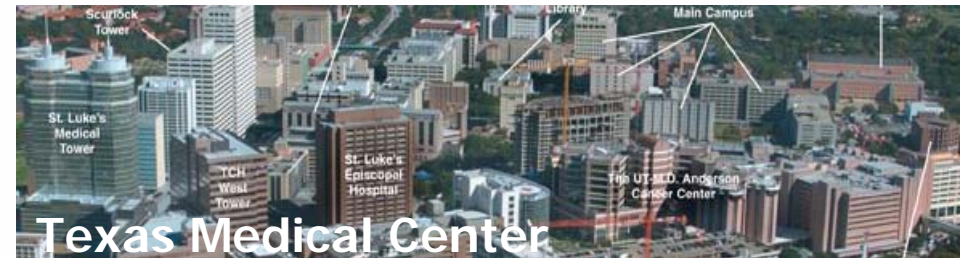
## Energy

- Created "Energy Capital of the World"
- \$15 billion petrochemical facility
- 5,000+ energy companies



## Port of Houston

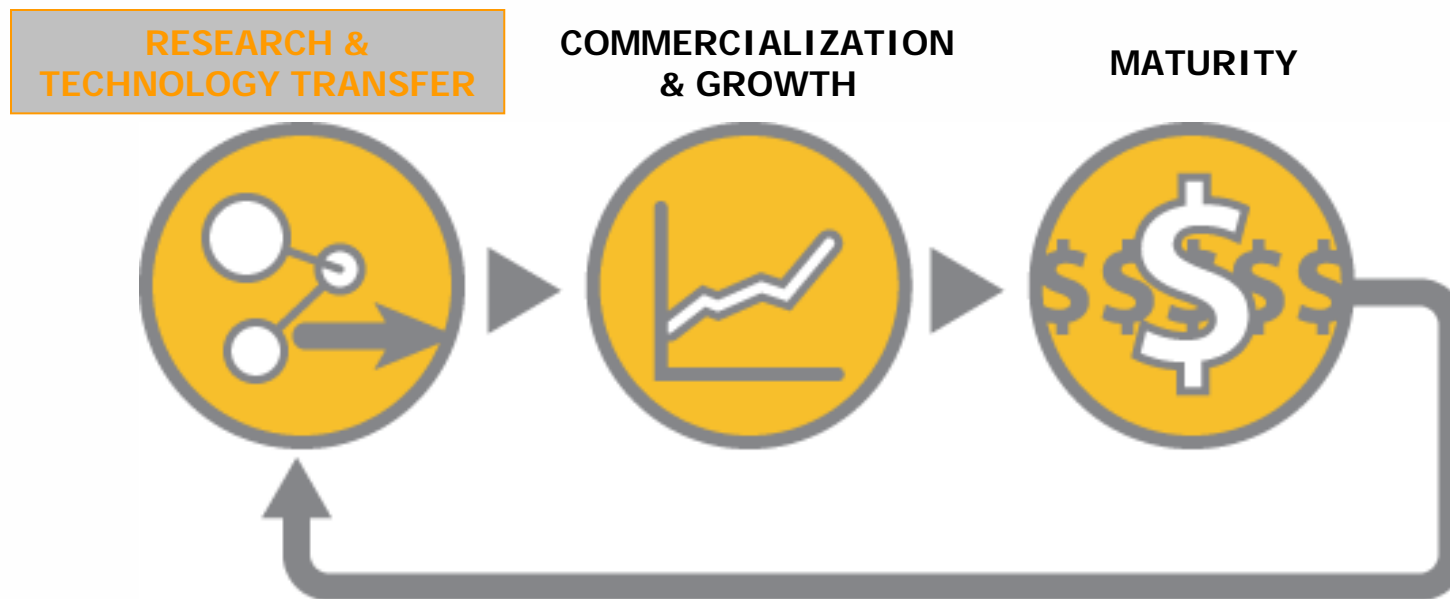
- Initiated in 1910
- Dredged 50 mile channel to Gulf of Mexico
- 3<sup>rd</sup> largest U.S. port



## Texas Medical Center

- 65,300+ employees
- 4,000 physicians
- 5,000 & faculty
- 42+ institutions in 26MM ft<sup>2</sup>
- 5.2 million patients annually

## Houston: Poised for Big in Biotech



Proven pathway from research to market

## Research and Knowledge Creation

- World Class Institutions
- Research and Scientific Leadership
- Investment in Research
- Returns in Research Investment



*People, places and proven track record to fuel innovation*



# World Class Research Institutions

Leading Medical Institutions in the U.S.

Institution	Rank
The University of Texas M. D. Anderson Cancer Center	#1 in Oncology #5 in Gynecology #10 in Urology #10 in Ear, Nose and Throat #10 in Rehabilitation
Texas Children’s Hospital	#1 in Pediatric Research funding-NIH #4 in Pediatrics
UT Health Science Center School of Public Health	#1 in Health Education
Texas Heart Institute	#9 in Cardiology and Cardiac Surgery

Source: U.S. News and World Report, 2004 and NIH database



# World Class Research Institutions

Leading Medical Institutions in the U.S.

Institution	Rank
Baylor College of Medicine	#1 in Pediatric Research funding-NIH #11 in NIH Awards to Med Schools-NIH #13 Research Intensive Medical Schools
University of Texas Medical Branch	1 of 2 Infectious Disease and Biodefense National Laboratories 1 of 6 Regional Centers of Excellence for Biodefense #19 in NIH Awards to Med Schools-NIH
Methodist Hospital	#10 in Neurology and Neuro Surgery #17 in Cardiology and Cardiac Surgery
University of Houston	#2 in Health Law

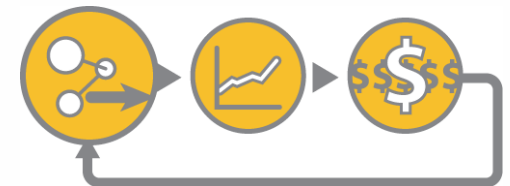
Source: U.S. News and World Report, 2004 and NIH database



## Research Leadership

- **Vanguards**
  - First multiple organ transplant
  - First identification of  $C_{60}$
- **Nationally Recognized**
  - Three Nobel laureates
  - 16 members of the National Academy of Sciences
  - 2 Presidential Advisors
  - Hundreds of members of other national academies
- **Next Generation Leadership**
  - #2 in higher education degrees in bioscience
  - #3 for university expenditures in biosciences
  - 22,000+ biomedical students in the Texas Medical Center

Source: Battelle Memorial Institute and the State Science and Technology Institute study



## An Investment in Research

Investment of over \$1.4 billion annually in research in the biotechnology and medical cluster in the Houston Region

**Baylor College of Medicine**

**Memorial Hermann Hospital**

**Methodist Health Care System**

**Rice University**

**St. Luke's Episcopal Health System, home of the Texas Heart Institute**

**Texas A&M University System**

**Texas Children's Hospital**

**Texas Southern University**

**Texas State Technical College**

**The University of Texas M. D. Anderson Cancer Center**

**The University of Texas Medical Branch**

**The University of Texas Health Science Center at Houston**

**University of Houston**



## Research Realized\*

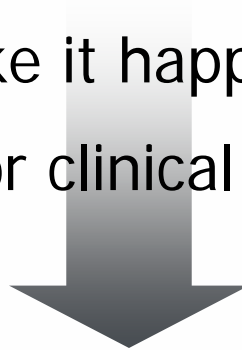
8	Technology Transfer Offices
581	Invention Disclosures
482	Patent Applications
86	Patents Issued
209	License and Option Agreements Signed
<b>19</b>	<b>New Companies Formed</b>

\*2003



## Technology Transfer

- Collaborative attitude between public and private entities
- Entrepreneurial energy to fuel process
- Infrastructure to make it happen
- Large patient base for clinical trials



***Streamlined process for validating products***



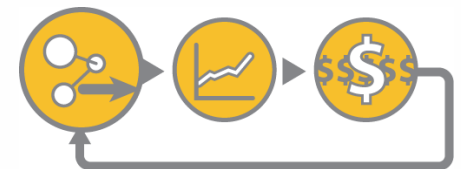
# Science and Entrepreneurial Crossroads

## Pioneer spirit







- Houston-based companies are pioneering innovative new approaches
  - MicroMed's miniaturized heart pump
  - Tanox's monoclonal antibody for asthma
  - C Sixty's fullerenes for neurodegenerative disease
  - Nanospectra's nanoshells for cancer treatment
  - Introgen's nanoparticle therapy for cancer

## Collaborative attitude

- Collaborations in proton therapy and imaging
  - M. D. Anderson, UTHSC, GE Imaging, and other TMC institutions
- Gulf Coast Consortia
- TexGen
  - UTHSC, Baylor, Texas Heart and M. D. Anderson
- Joint MD/MBA graduate program
  - Baylor, Rice, University of Houston



## Successful Entrepreneurial Companies

<p><b>Lexicon Genetics</b></p> 	<p><b>Encysive</b></p> 	<p><b>Introgen</b></p> 
<p><b>Tanox</b></p> 	<p><b>Cyberonics</b></p> 	<p><b>MicroMed</b></p> 



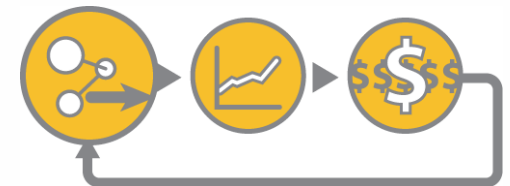
## Capital for Innovation

- New \$200MM Texas Emerging Technology Fund
- Strong local venture investors
- Venture investing increased 250% in 2004



## Efficient Clinical Trials

- Texas Medical Center, UTMB & Texas A&M
  - 6.1+ million annual patient visits
    - *Ethnically diverse international population*
    - *Extraordinary spectrum of illnesses and therapeutic areas*
      - Rapid clinical trial recruitment
      - Personalized medicine research enabled
- Expertise and experience
  - Deep pool of thought leaders in virtually every therapeutic area
  - Long experience with designing and conducting compliant clinical trials
  - Mature clinical trials infrastructure



## Houston: Poised for Big in Biotech

RESEARCH &  
TECHNOLOGY TRANSFER

COMMERCIALIZATION  
& GROWTH

MATURITY



Proven pathway from research to market

## Commercialization & Growth

- 50 years of infrastructure investment
  - Healthcare facilities
  - Research institutions
  - Educational resources
- Existing community of commercially successful biotech businesses



***Foundation for immediate development of specialty research and technological commercialization opportunities***



## Strong Infrastructure

- Texas Medical Center
  - Largest medical center in the world; 42+ member institutions
  - \$2.1 billion spent for additions to facilities from 2002-2004
  - 800+ acres; 100+ permanent buildings
  - Ground broken for The University of Texas Research Park
- Texas A&M University-College Station
  - Ranked 11<sup>th</sup> by NSF for total research and development expenditures
  - 5,200+ acres, including a 324-acre research park
  - 2.5M+ square feet of research space
- University of Texas Medical Branch-Galveston
  - Ranked 19<sup>th</sup> of 121 medical schools in NIH funding
  - 84 acres; 77 major buildings
  - 385k+ square feet of research space
  - *Massive research and commercialization assets*



## Support for the Biotech Business Community

- Business leadership
  - CEOs of two of the most successful IPOs in biotech industry
- Educational excellence
  - Rice University / Baylor College of Medicine joint MBA/MD programs
- Lower cost of research and office facilities
  - Rental rates are 10 – 30 percent less the San Francisco and Boston areas
- Business-friendly tax structure



# Medical and Scientific Success in Houston

## FDA Approves Xolair, Biotechnology Breakthrough for Asthma

06/20/2003

First Humanized Antibody for Asthma Targets IgE, an Underlying Cause of the Disease

## Encysive Pharmaceuticals Announces Topline Data From Stride-2 Pivotal Trial in PAH

2/14/2005

Achieves Statistical Significance Over Placebo With Favorable Safety Profile

## Nanoshells detect and destroy cancer cells

04/15/2005

Rice researchers have developed a new approach to fighting cancer that aims to both detect and destroy cancerous cells using the same targeted nanoshells.

## Color-blind' method opens new doors in DNA sequencing

03/29/2005

A "color-blind" method of fluorescence detection developed by researchers at Baylor College of Medicine (BCM) and Rice University could take DNA sequencing to the patient's bedside or the doctor's office.

## Lexicon, Organon to work together on drug development

05/17/2005

Lexicon announces collaboration with Organon, the human health care unit of Dutch pharmaceutical giant Akzo Nobel, to jointly discover, develop and commercialize new biotherapeutics.



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Proven pathway from research to market

## Maturity

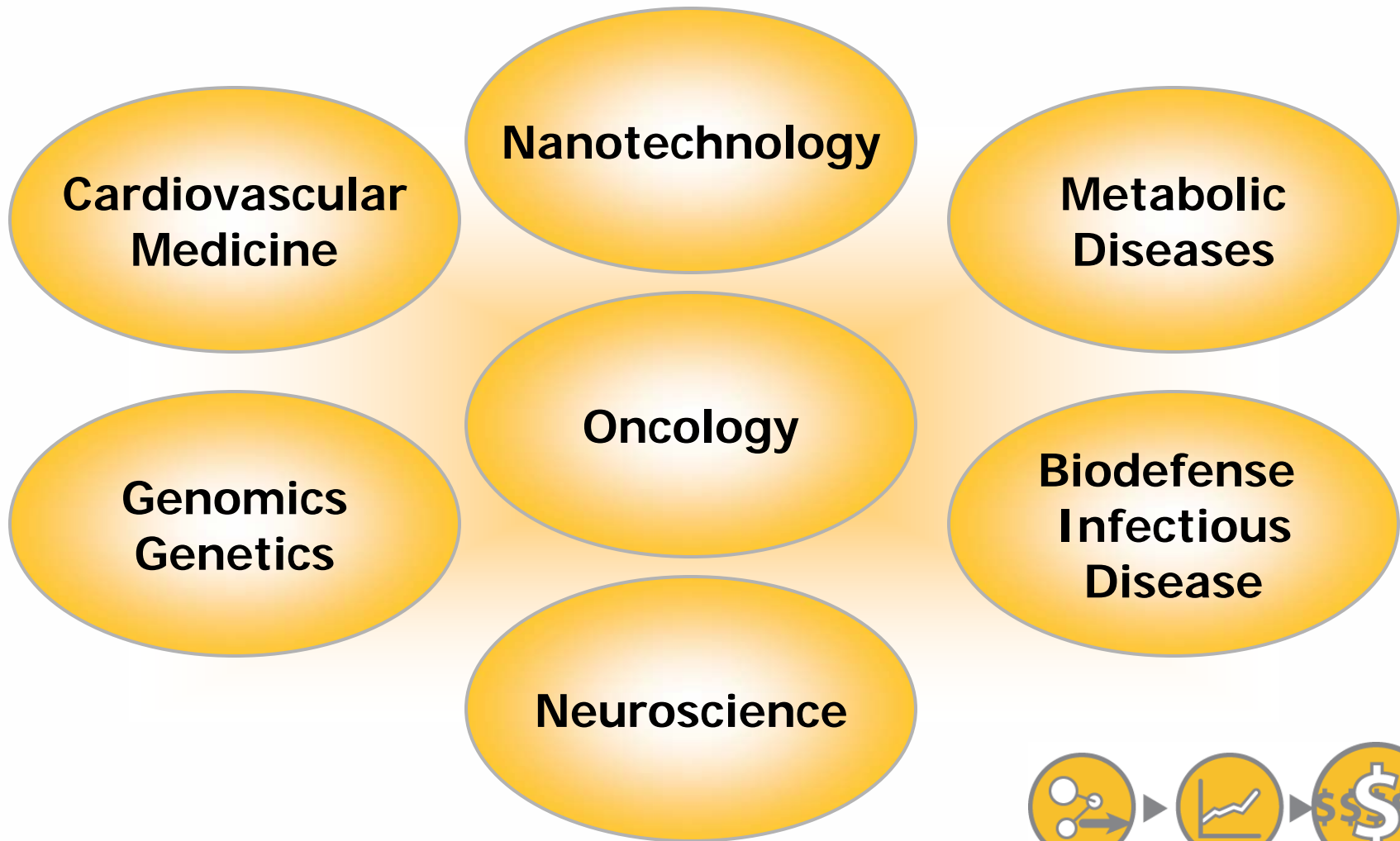
- World class scientists and research facilities keeping the pipeline full
- Increased interest in investment and business partnership opportunities
- Continued commercial success



*Big ideas that preface big achievements*



## Big Ideas for Tomorrow



## BioHouston

Founded in 2001 by Houston-region academic/research institutions to develop Houston as a world-class center in the life sciences industry

THE UNIVERSITY OF TEXAS  
MD ANDERSON  
CANCER CENTER

BCM  
Baylor College of Medicine

RICE UNIVERSITY

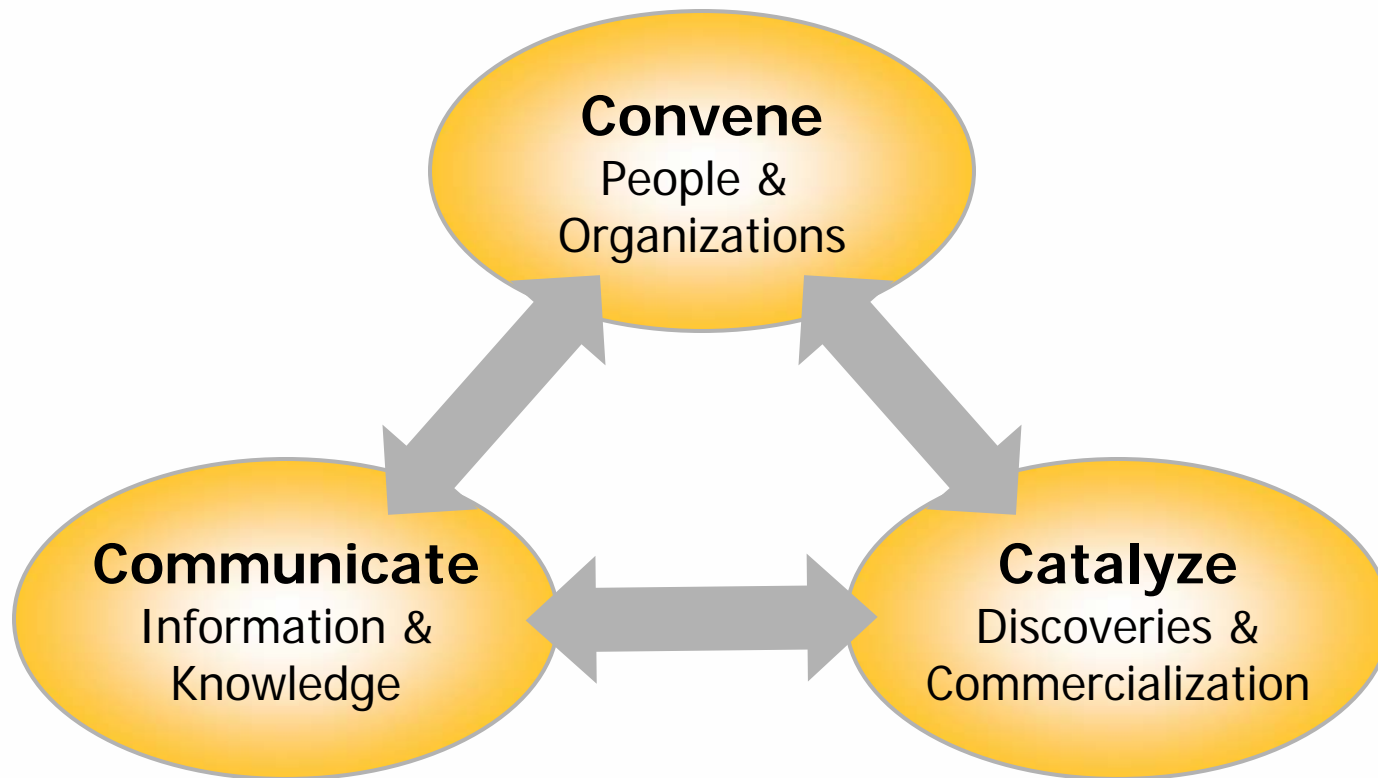
Texas  
A&M  
UNIVERSITY

UTMB  
The University of Texas Medical Branch

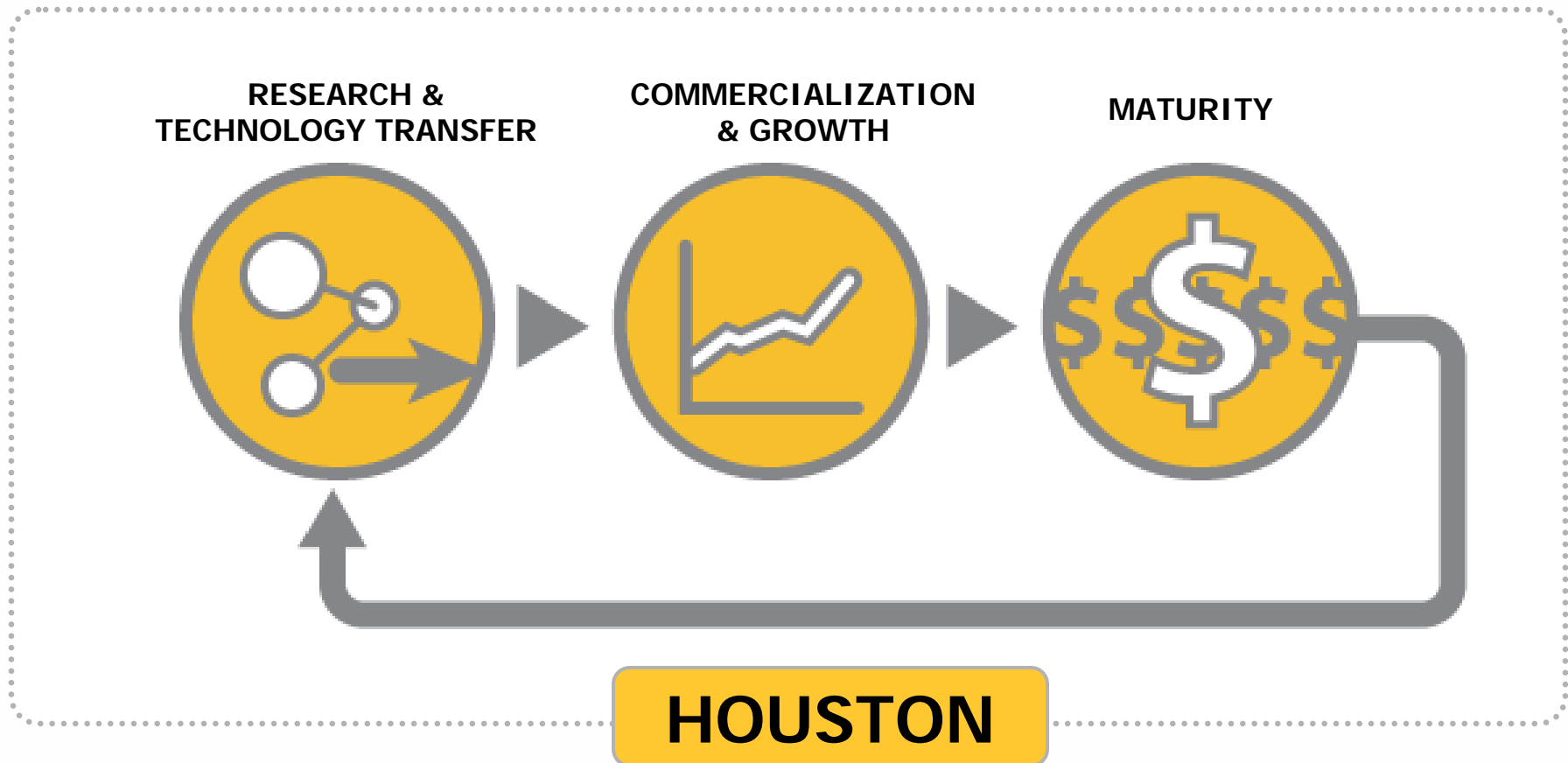


# Leading Cluster Growth

Portal to Houston opportunities



# Proven Pathway from Research to Market



# HOUSTON

- The place to make your mark
- The place to realize your dreams
- The place to be entrepreneurial

The place to succeed  
**Houston Style**  
with drive and *ENERGY* – at a pace  
unmatched anywhere else

Big Ideas. Big Opportunities.  
Right Place. Right Time.

We are building the life science future...  
**Houston Style**



BIOHOUSTON

Building the Life Science Future



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