KAPAL
Korean-American Professional Association in Life Sciences
한미생명과학인협회

바이오헬스 미국 3대 클러스터 (메릴랜드, 매사츄세츠, 캘리포니아) 특장점 소개

Sang Tae Park

CEO

COREE LLC, *a Hanmi company*

COREE Ofmom Hanmi

U.S. cluster rankings

Rank	Cluster	Weighted score
1	Greater Boston Area	89.2
2	San Francisco Bay Area	81.6
3	San Diego Metro Area	71.6
4	Raleigh-Durham Metro Area	64.3
5	Suburban Maryland/Metro DC	52.5
6	Seattle Metro Area	49.9
7	New Jersey	48.2
8	Philadelphia Metro Area	47.2
9	Chicago Metro Area	43.5
10	Los Angeles/Orange County	41.1
11	Denver Metro Area	38.8
12	Houston	35.7
13	New York City	34.1
14	Minneapolis–St. Paul Metro Area	30.8
15	Westchester County	27.4
16	Long Island	23.7

Life sciences employment concentration:
Weight: **20.0%**
Measured as the percent of industry employment against total metro private employment. (BLS, 2017)
Life sciences venture capital funding:
Weight: **15.0%**
Funding from 2018 (Crunchbase)
Total lab supply:
Weight: **15.0%**
Life sciences employment growth:
Weight: **10.0%**
Life sciences establishments concentration:
Weight: **10.0%**
Measured as the percent of industry establishments against total metro private establishments. (BLS, 2017)
Life sciences National Institutes of Health funding:
Weight: **10.0 %**
National Institutes of Health, 2018
Market occupancy rate:
Weight: **10.0%**
Average asking rent (NNN):
Weight: **10.0%**

무엇을 고려해야 할까?

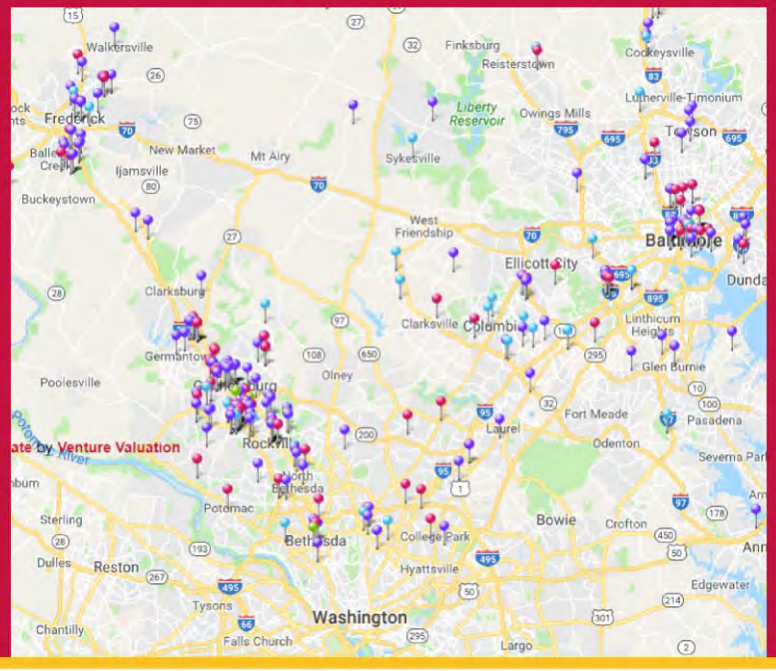
- **고용 (인력의 확보)**
  - 매우 중요. 한국기업의 경우는 한국커뮤니티도 고려해야 함
- **벤처 캐피탈 투자**
  - 상대적으로 덜 중요.(한국기업의 진출시 해외 자본 고려 비율 낮음)
- **Supply**
  - 미국 특성상, 각종 supply의 빠른 확보는 중요
- **설립 용이성/지원**
  - 얼마나 많은 회사들이 설립되는가?
  - 주정부나 카운티의 지원이 좋은가? 회사에 유리한 세금 및 법적 지원은 있는가?
- **펀딩과 협업**
  - NIH 등 미국의 정부 및 nonprofit 펀딩: 한국회사들이 잘 고려하지 않고 어려움
- **마켓**
  - 제품이나 서비스의 제공을 위한 여건도 매우 중요
- **임대 및 운영 비용**
  - 기본 운영비도 회사의 유지에 매우 중요한 부분
- **생활 비용**
  - 해외 파견이나 현지 고용 모두, 지역의 생활 비용은 중요한 부분

Maryland
OPEN FOR BUSINESS

Maryland's Biotechnology Sector 2020

Great Employment of scientists/engineers

Industry Clusters



$15.31B in Economic Activity

#1 % of professional and technical workers

#1 PhD concentration in biological, mathematical and health fields

#1 concentration of employed doctoral scientists and engineers

$1.3B in Federal Procurement

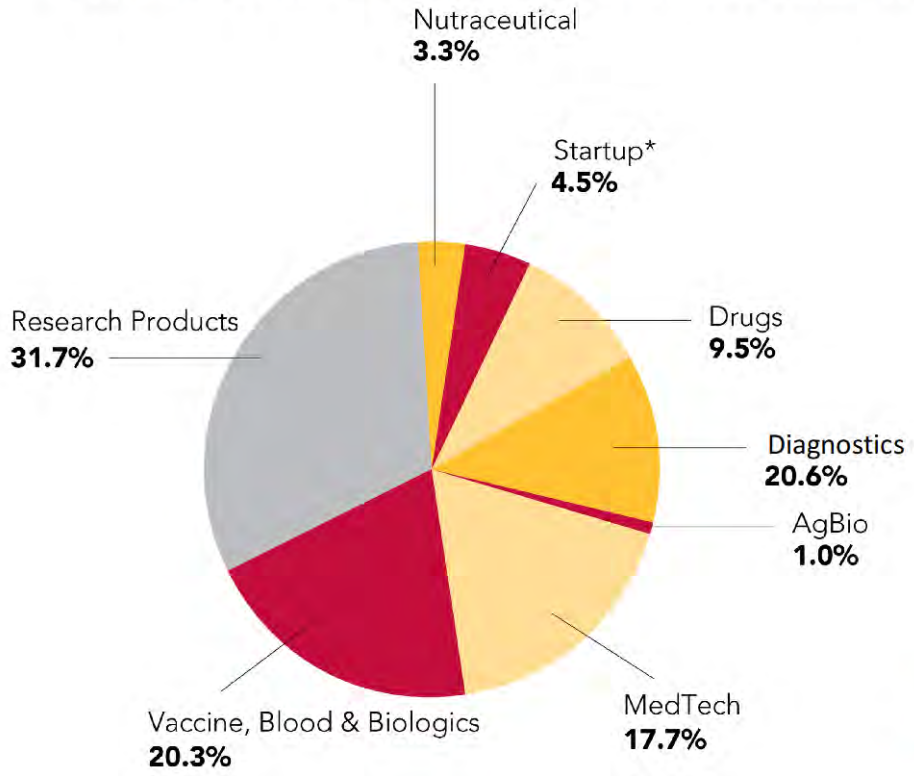
Relationship with Korea ?

Maryland & Korea

- Historic commitment to Korea-U.S.
  - First Korean-American First Lady
  - Sister State with Gyeongnam-do and Jeollanam-do. Delegations from Chungcheongbuk-do.
- Our Services
  - Help Korea companies to establish operations and access key networks
  - Assist Maryland businesses to expand to Korea
- Maryland's Korean community is strong:
  - 1 in 7 Marylanders born overseas - very strong Asian community
  - Howard County - Korean Way
  - Greater DC region partnerships

Balanced Industry Structure

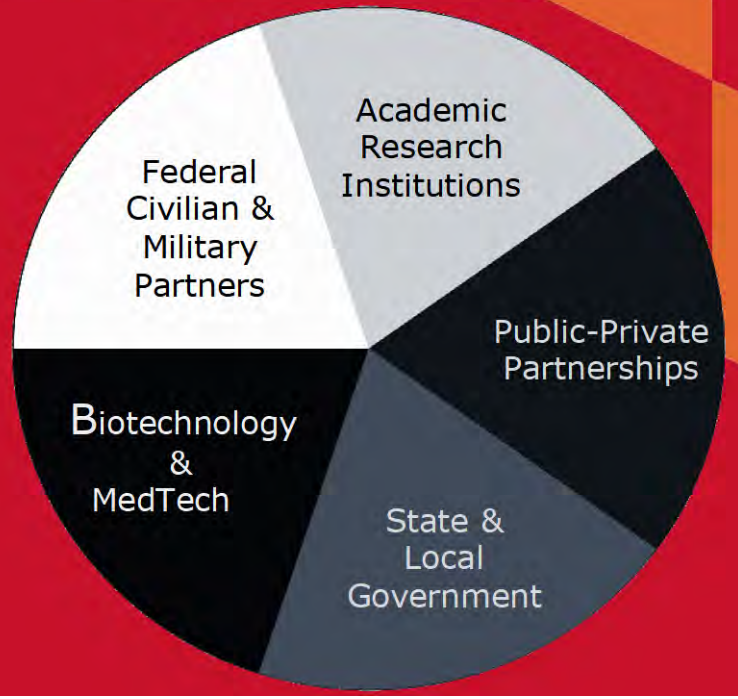
BioHealth Companies in Maryland



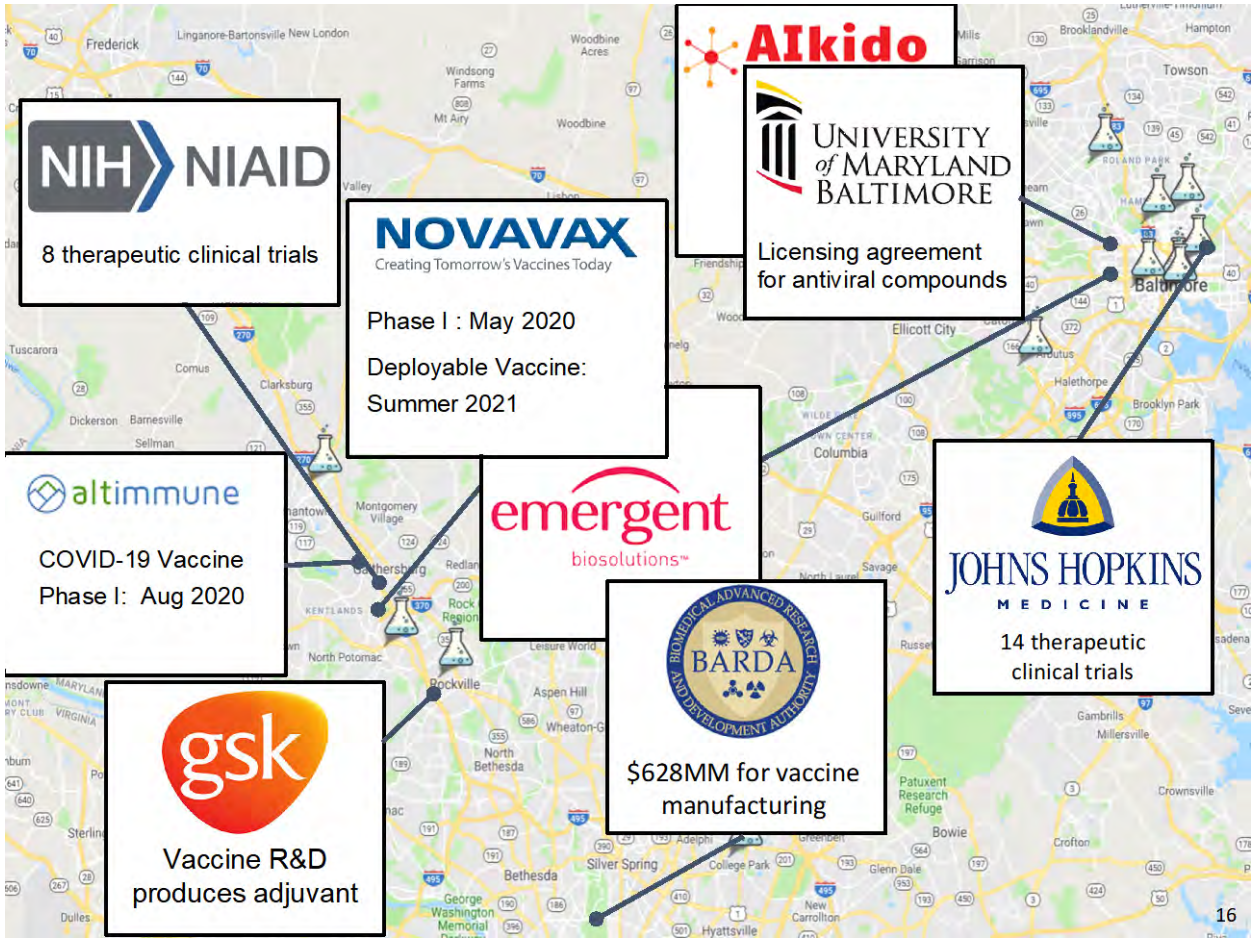
Maryland
DEPARTMENT OF COMMERCE

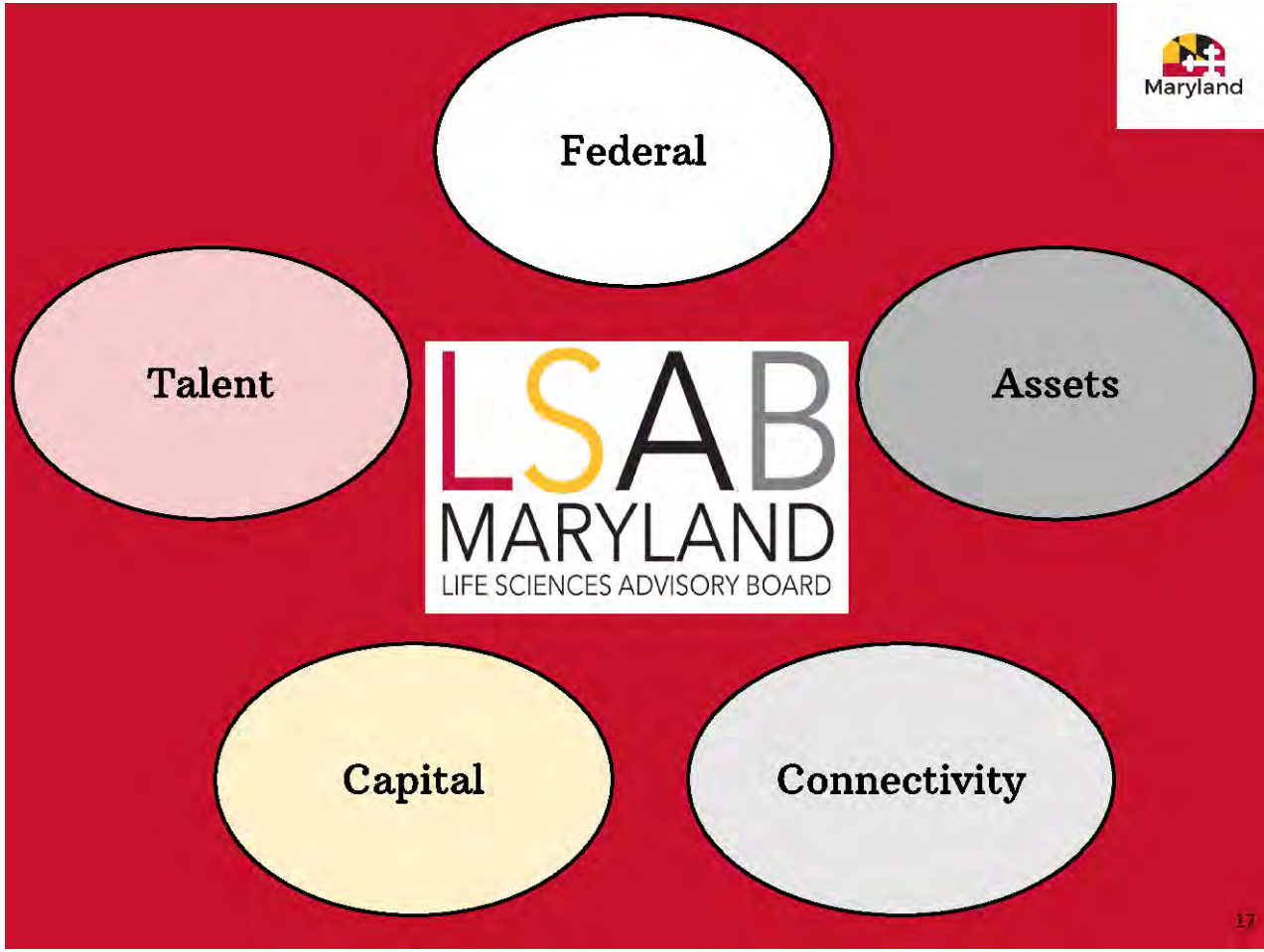
The BioHealth Industry

Maryland



Research, Regulatory, Federal Connectivity





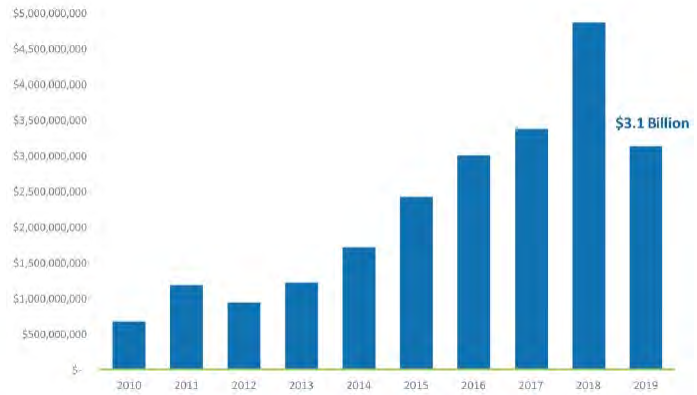
Massachusetts Ecosystem

Industry Growth

Who We've Recruited to MA

- 꾸준한 투자와 높은 IPO 성공률
- 대형 제약회사와의 M&A (다양한 exit 기회)
- 투자자들의 많은 경험과 기술 이해도

Venture Capital Investment



Venture capital investment in Massachusetts biopharma companies was **$3.1 billion** in 2019.

In the first two quarters of 2020, Massachusetts biopharma companies raised **$2.1 billion.**

Massachusetts IPOs 2020 (Q1&2)

There have been 7 IPOs from Massachusetts biotech companies in the first half of 2020, raising an average of $187 million.

33% of all US-based biotech IPOs in the first half of 2020 were from Massachusetts companies.

forma THERAPEUTICS	$278 MM
BLACK DIAMOND THERAPEUTICS	$231 MM
AKOUOS	$212 MM
Beam THERAPEUTICS	$207 MM
generation bio	$200 MM
KEROS THERAPEUTICS	$100 MM
imara	$75 MM

Note: Figures refer to " offer amounts" (investment secured) at time of IPO. Source: Nasdaq.com

Massachusetts IPOs 2020 (Q3&4)

There have been 13 IPOs from Massachusetts biotech companies in the second half of 2020 (through October), raising an average of $182 million.

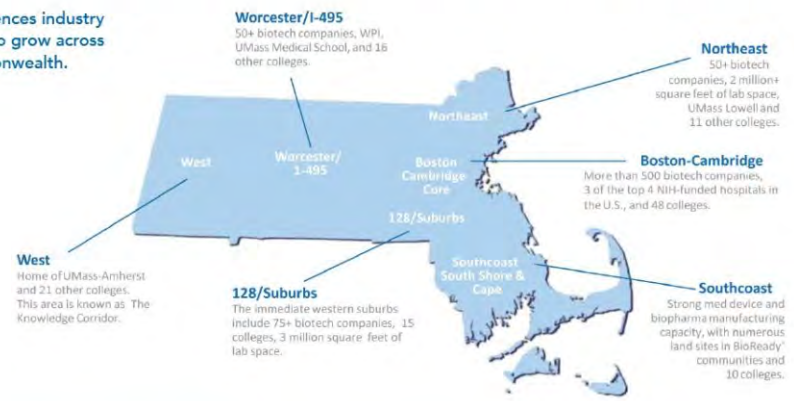
CHECKMATE PHARMACEUTICALS	$75 MM	CODIAK	$83 MM
KYMERA	$200 MM	PRAXIS PRECISION MEDICINES	$219 MM
RELAY THERAPEUTICS	$460 MM	Dyne	$268 MM
FOGHORN THERAPEUTICS	$120 MM	PANDION THERAPEUTICS	$135 MM
Oncorus	$87 MM	SQZ BIOTECH	$71 MM
inozyme pharma	$129 MM	C4 Therapeutics	$217 MM
ATEA Pharmaceuticals	$300 MM		

Note: Figures refer to " offer amounts" (investment secured) at time of IPO. Source: Nasdaq.com

Continuous Growth and Support from MA

Industry Growth Across the State

The life sciences industry continues to grow across the Commonwealth.



Boston provides

- Medical & Scientific Professionals
- Partnership/Collaboration/Advisor
- Investors
- Business professionals
- Highly educated & skilled Industry work force

https://echalliance.com/ecosystems/

THE CALIFORNIA LIFE SCIENCE ECOSYSTEM

CLSI CALIFORNIA LIFE SCIENCES INSTITUTE

CULTIVATING LIFE SCIENCES INNOVATION

Great Academic Support and National funding #1

Academic Support

Number of Universities in the World Top 100

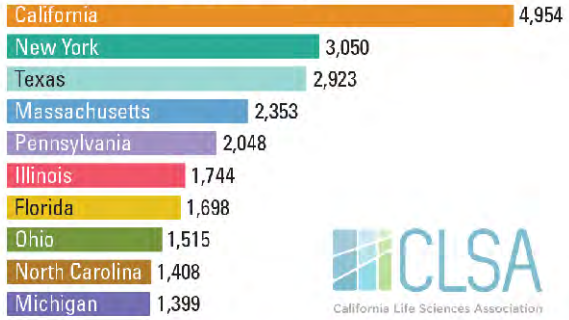
Shanghai Index, 2018 Rankings

California	10*	Illinois	3	Minnesota	2
New York	4	Massachusetts	3	North Carolina	2
Pennsylvania	4	Maryland	2	New Jersey	1
Texas	4				

*Stanford University, UC Berkeley, California Institute of Technology, UCLA, UC San Diego, UC San Francisco, UC Santa Barbara, USC, UC Irvine and UC Davis.

Source: Academic Ranking of World Universities (ARWU) 2018, Shanghai Ranking Consultancy.

Top 10 States with Doctoral Recipients in Sciences & Engineering



CLSA California Life Sciences Association

No. 1 in top ranked universities & research institutions: The state boasts 10 institutions in the Shanghai Index of the world's 100 top universities, leading the nation.

In 2016, California graduated more than 4,900 science and engineering PhDs.

These degrees include study in the fields of biomedical sciences and health sciences, agricultural science and natural resources.

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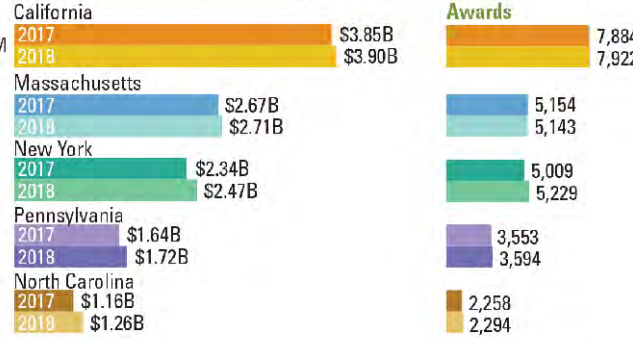
Science Funding from the NIH

Top 10 California Organizations Receiving NIH Funding

FY2017 FY2018*

Source: National Institutes of Health
Note: Data excludes R&D Contracts.

Top Five States Receiving NIH Grants



CLSA California Life Sciences Association

No. 1 in NIH grants: California scientists received over $3.9 billion in NIH research grants in federal fiscal year 2018—the most of any state in the nation.

Massachusetts received $2.71 billion, over $1 billion less.

California receives 15% of all NIH dollars, which play an enormous role in supporting life sciences innovation in the Golden State.

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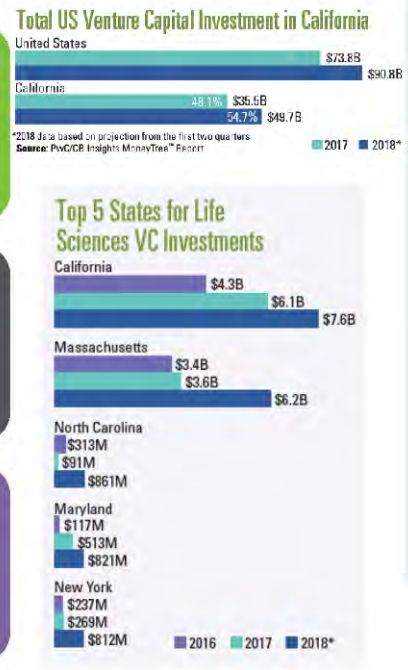
Attracting Venture Capital and diversity in Life Science industry

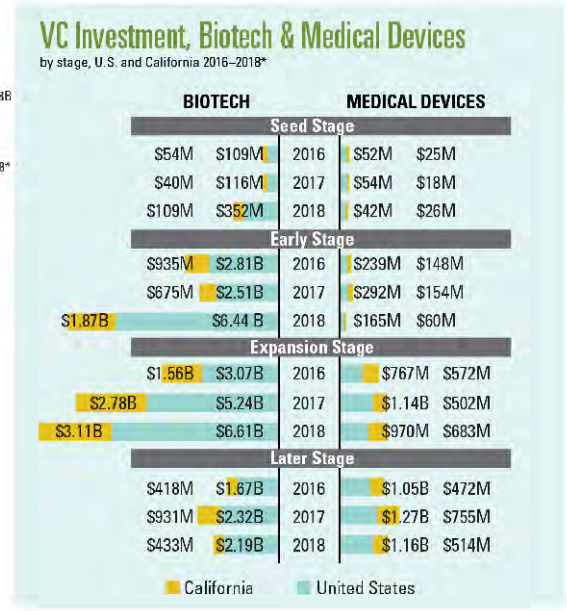
Attracting Venture Capital

California is projected to secure the most VC life sciences funding in the nation, with $7.6 billion expected in 2018.

This is an increase of approximately $1.5 billion, and 39% of the nation's entire expected life sciences VC investment in 2018.

Massachusetts is projected to be second with $6.2 billion.





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Access the Full 2019 California Life Sciences Industry Report:
www.califesciencesindustry.com

California's Life-Saving Therapeutics & Devices

California leads the nation in new drugs, therapeutics and medicines in the pipeline.

1,332 Investigational New Drug (IND) applications were filed in California in 2018.

The most active area was cancer, which had 433 applications.

28 Expedited Approvals by the FDA

450+ Medical Devices Approved by CA Headquartered Companies.

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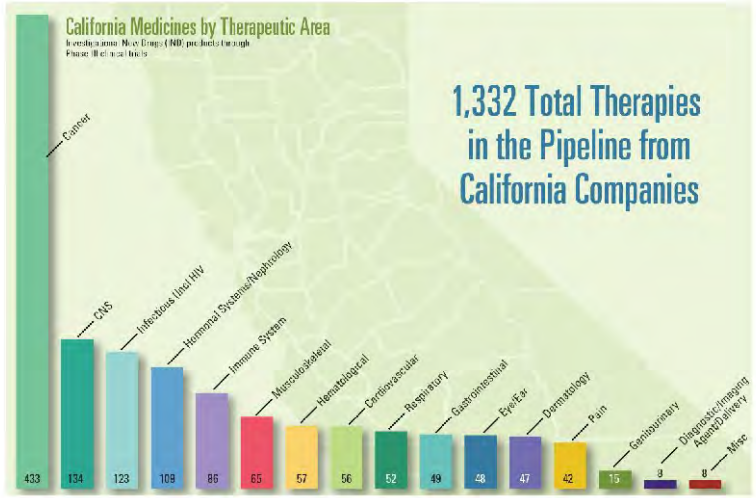
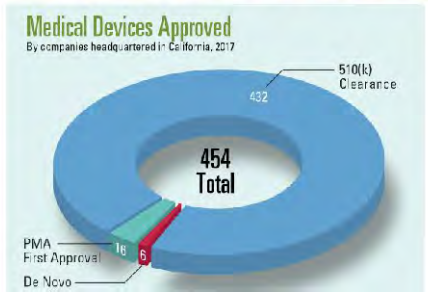
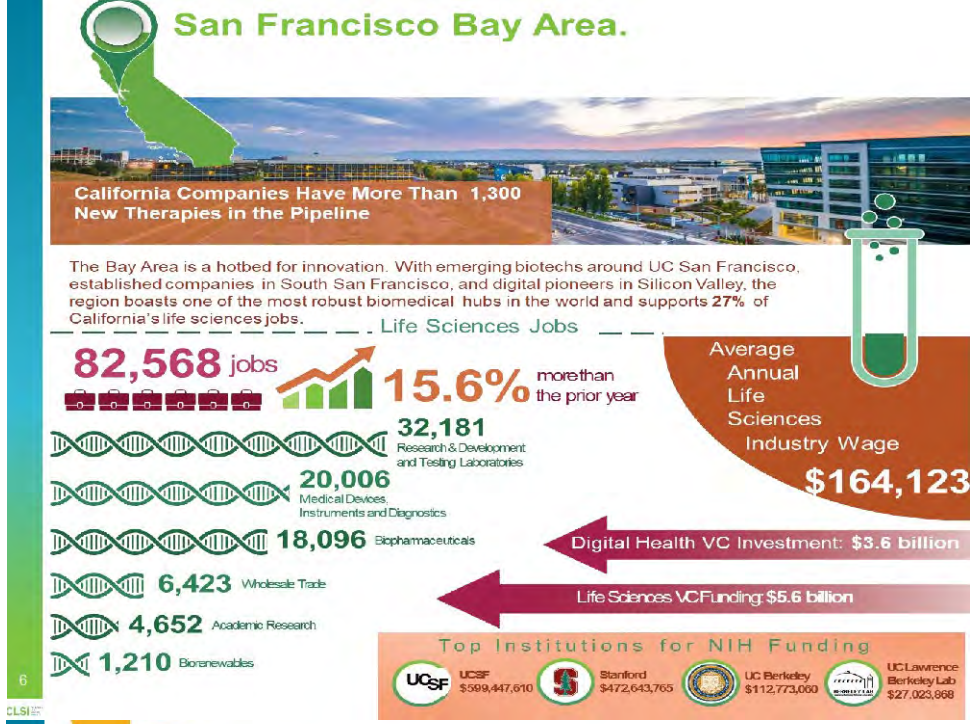
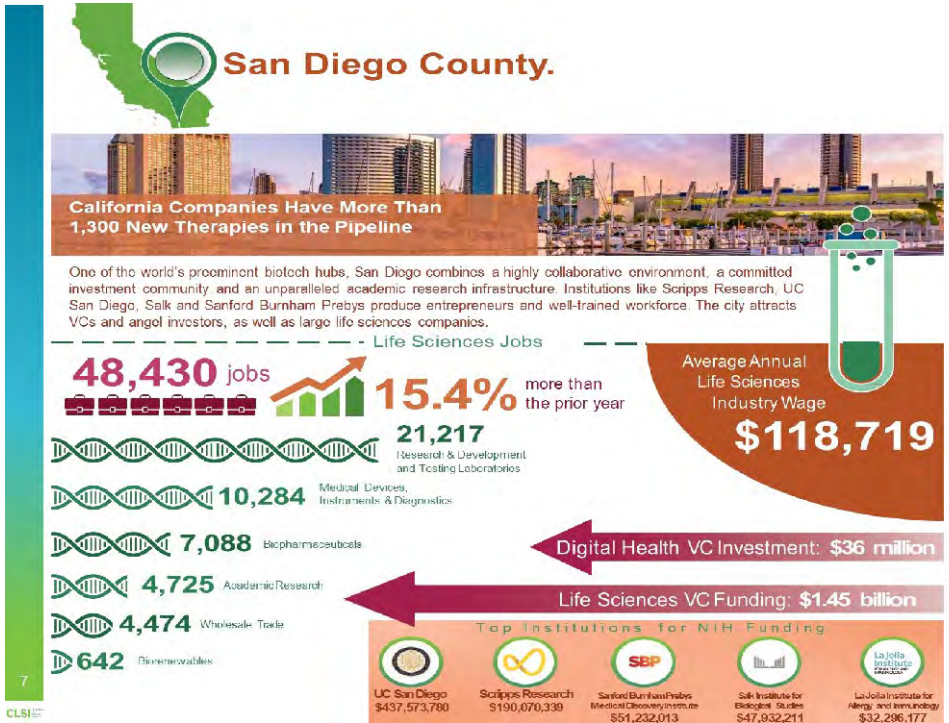
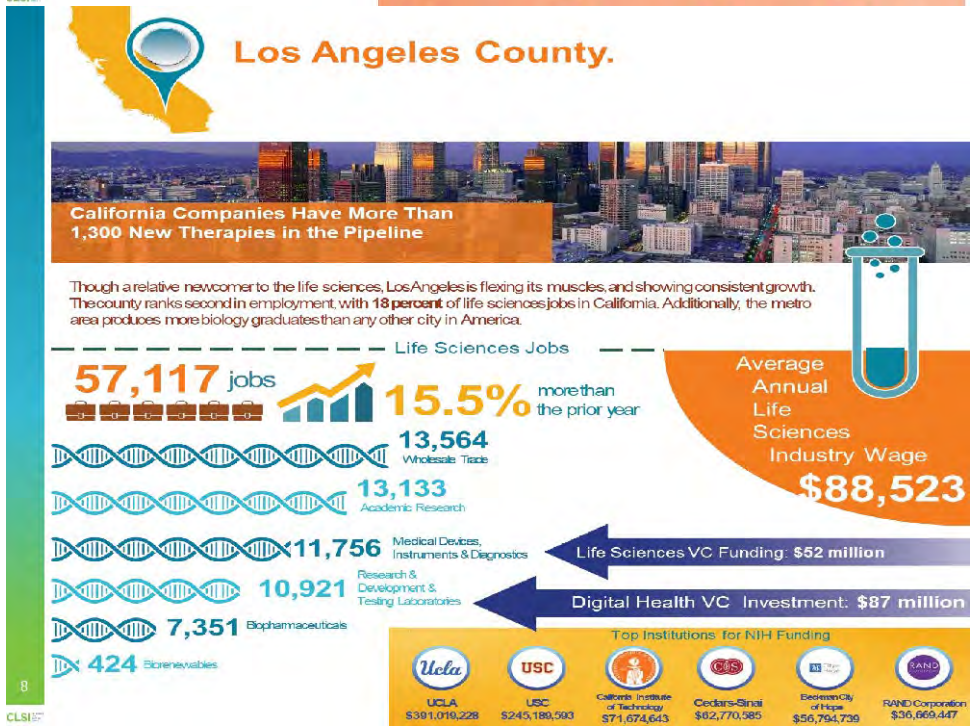




- 여러 클러스터와 각각의 특성
- IT 및 디바이스 등의 강점
- 큰 마켓과 접근성(해외 등)







정리

- 미국 진출의 위치 선정
  - *"정답이 있는 것은 아니다"*

- 기술과 제품의 특성을 고려한 위치 선정 필요 (상대적 비교)
  - 메릴랜드: 특허 및 허가와 관련한 경우
  - 매사츄세츠: 집중된 인력과 투자를 통한 기술 이전, IPO 활발
  - 캘리포니아: IT 기술과의 융합 및 장비 등의 산업 다양성. 위치.

- 주정부의 지원 확인
  - 초기 설립이나 투자 상황에서 설립 지원, 투자 매칭, 세금 혜택 등은 거의 모든 곳에서 제공. 미리 확인하여 받을 수 있도록 준비하는 것이 중요
  - 대부분의 주에 주정부 지원 혹은 독립적인 지원 프로그램 운영 주체가 있슴

- 네트워크 강화
  - 지역 정부 및 회사들과의 네크워크에 적극적 참여를 통한 기회 확보 중요
  - 한국인 전문 커뮤니티와의 소통: KAPAL 을 비롯한 다양한 단체 가입

- 지속 발전을 위한 현지화
  - 더 나은 고용과 발전을 위한 현지의 고용 및 세금 체계, 베네핏 지원 시스템을 확보