Providing Sustainable Access to Health Innovations through Public-Private Partnerships

Future Opportunities for Taiwan's Biotech Development

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Strength of Taiwan in Biotech Development

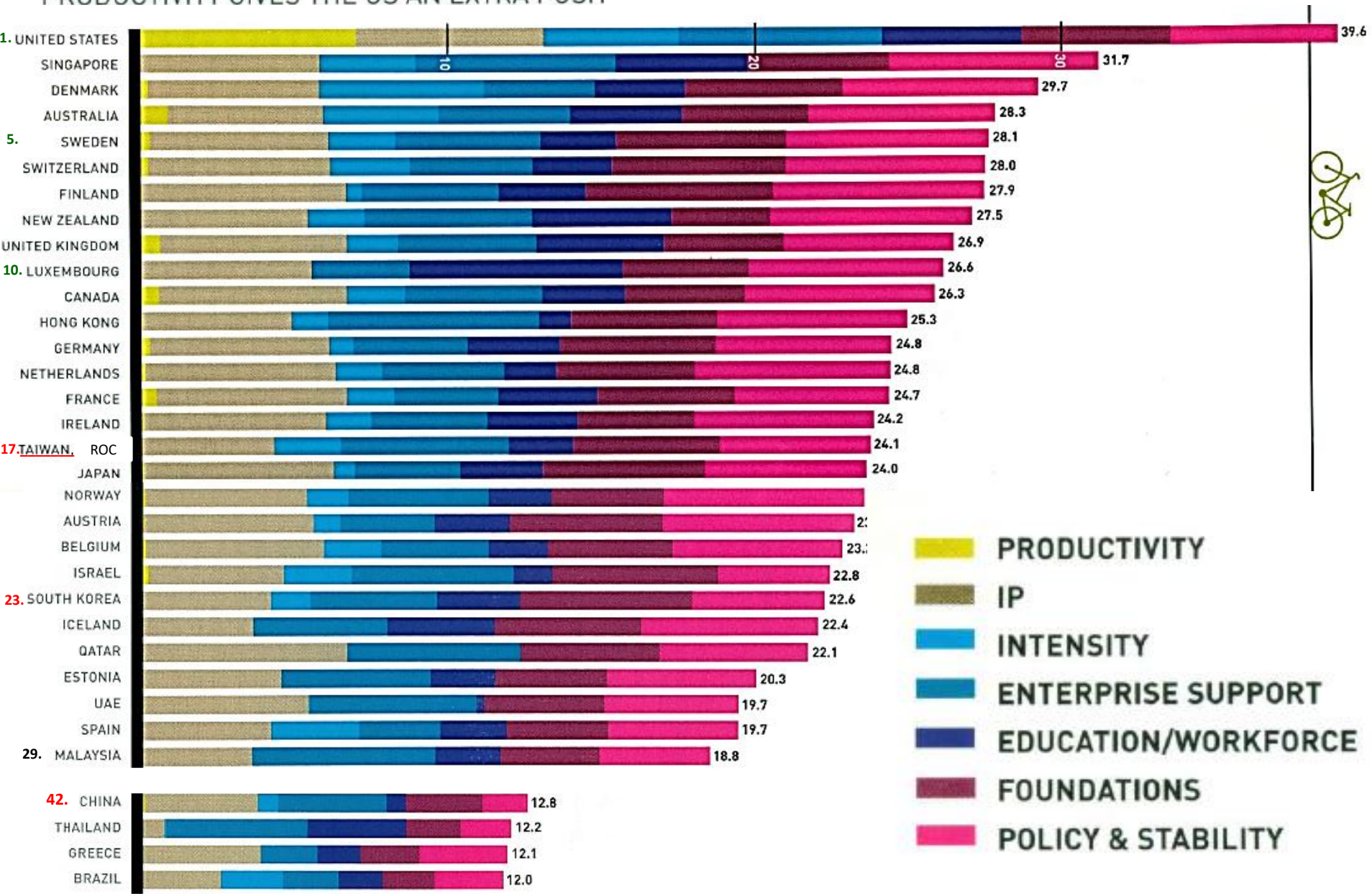
- **Representative Population** in East Asia
- Improved Cross-Strait Relationship
- Competitive, Strong **R&D Activities** and **Manufacturing Capabilities** in Computer Sci., Electric Engineering, Biotech, Clinical Medicine, *etc.*
- **Integrated** Government-Industry-Academia-Hospital, **Transparent Regulatory Environment**
- Excellent **Health Care System,** National Health Insurance: **≥ 98%**
- **Center of Excellence for Clinical Trials** in East Asia
  R&D for Pfizer, GSK, BI, MSD, Novartis, Eli Lilly, Roche, AZ, Bayer, etc.
- **Government's Investment** and **Support**

1. IP
2. INTENSITY
3. ENTERPRISE SUPPORT
4. EDUCATION/ WORKFORCE
5. FOUNDATIONS
6. POLICY & STABILITY

2014 SCIENTIFIC AMERICAN WORLDVIEW OVERALL SCORES

PRODUCTIVITY GIVES THE US AN EXTRA PUSH

Taiwan is # 17



2015 Taiwan Total Ranking # 25

1.	Productivity	# 23
2.	IP	# 29
3.	Intensity	# 31
4.	Enterprise Support	# 8
5.	Education/Workforce	# 33
6.	Foundation	# 12
7.	Policy & Stability	# 24

SEVEN YEARS OF BIOTECH TRACKING BY RANK

Our growing database reveals ongoing competition at many levels

Taiwan's Ranking:

2012 # 21

2013 # 26

2014 # 17

2015 # 25

Average # 22.3

change since last year (neg. values = improvement)

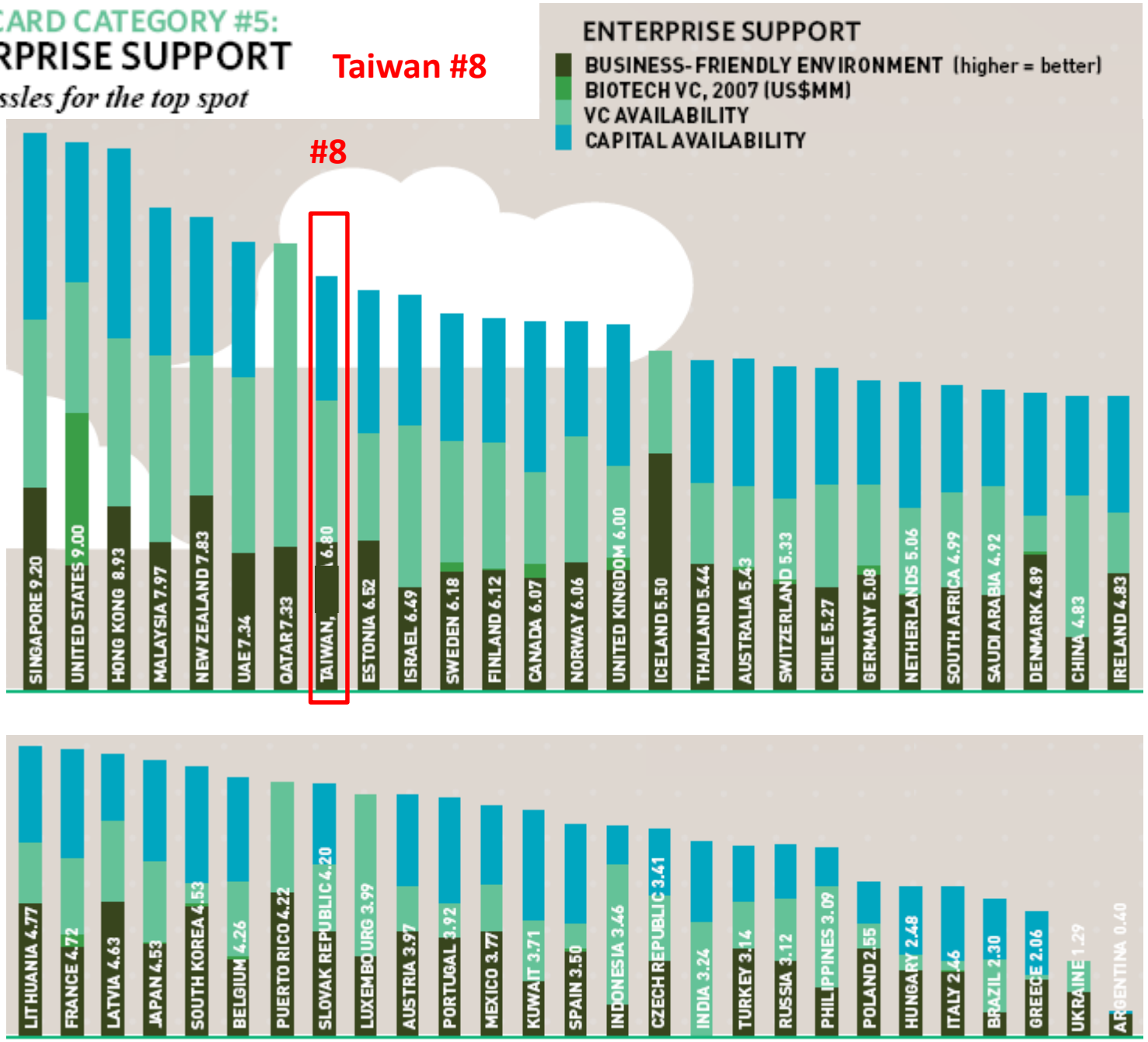
COUNTRY	2009	2010	2011	2012	2013	2014	2015	AVG.	
UNITED STATES	1	1	1	1	1	1	1	1.0	0
DENMARK	3	5	2	2	2	3	2	2.7	-1
NEW ZEALAND	7	18	18	9	10	8	3	10.4	-5
AUSTRALIA	10	17	5	10	7	4	4	8.1	0
SINGAPORE	2	2	8	3	5	2	5	3.9	3
FINLAND	8	6	7	4	4	7	6	6.0	-1
SWITZERLAND	6	10	6	6	3	6	7	6.3	1
SWEDEN	4	4	3	5	6	5	8	5.0	3
UNITED KINGDOM	12	14	9	11	9	9	9	10.4	0
CANADA	11	3	4	7	8	11	10	7.7	-1
HONG KONG			17	13	20	12	11	14.6	-1
GERMANY	16	16	16	16	14	13	12	14.7	-1
IRELAND	14	13	14	8	11	16	13	12.7	-3
NETHERLANDS	19	12	12	17	12	14	14	14.3	0
FRANCE	18	8	10	12	13	15	15	13.0	0
JAPAN	13	9	11	18	18	18	16	14.7	-2
NORWAY	17	21	21	19	22	19	17	19.4	-2
ISRAEL	5	7	13	14	15	22	18	13.4	-4
AUSTRIA	21	20	20	20	17	20	19	19.6	-1
LUXEMBOURG		25	29	25	19	10	20	21.3	10
BELGIUM	20	15	15	15	16	21	21	17.6	0
QATAR					42	25	22	29.7	-3
SOUTH KOREA	15	19	19	22	24	23	23	20.7	0
ICELAND	9	11	22	23	23	24	24	19.4	0
TAIWAN,				21	26	17	25	22.3	8

SCORECARD CATEGORY #5:

ENTERPRISE SUPPORT

A trio tussles for the top spot

Taiwan #8

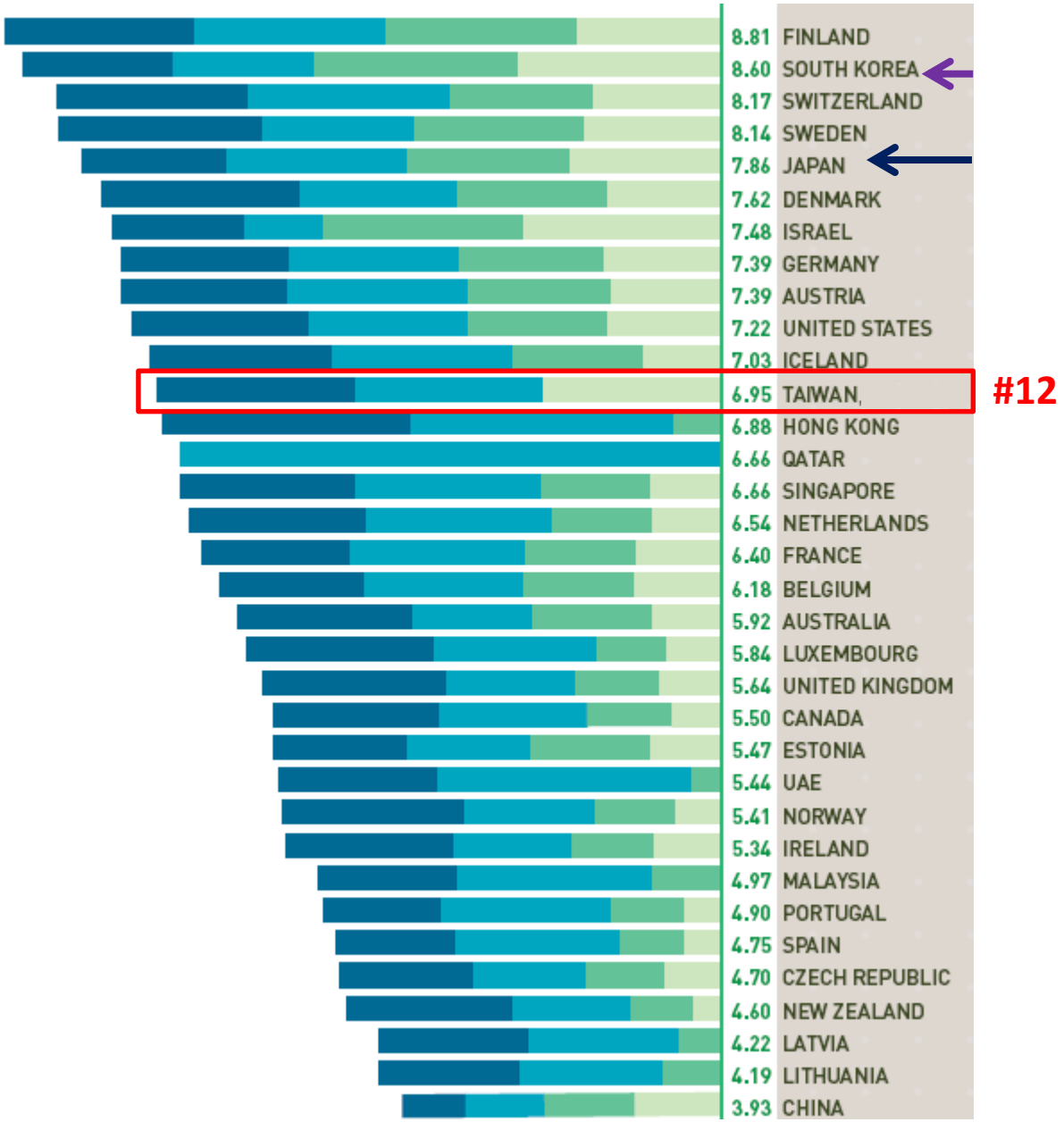


SCORECARD
CATEGORY #6:

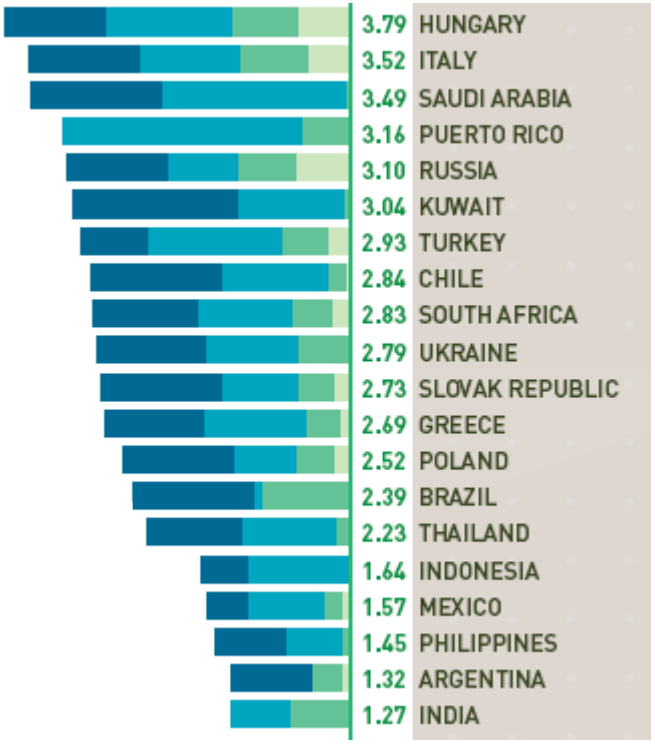
FOUNDATIONS

Finland finishes first

Taiwan #12



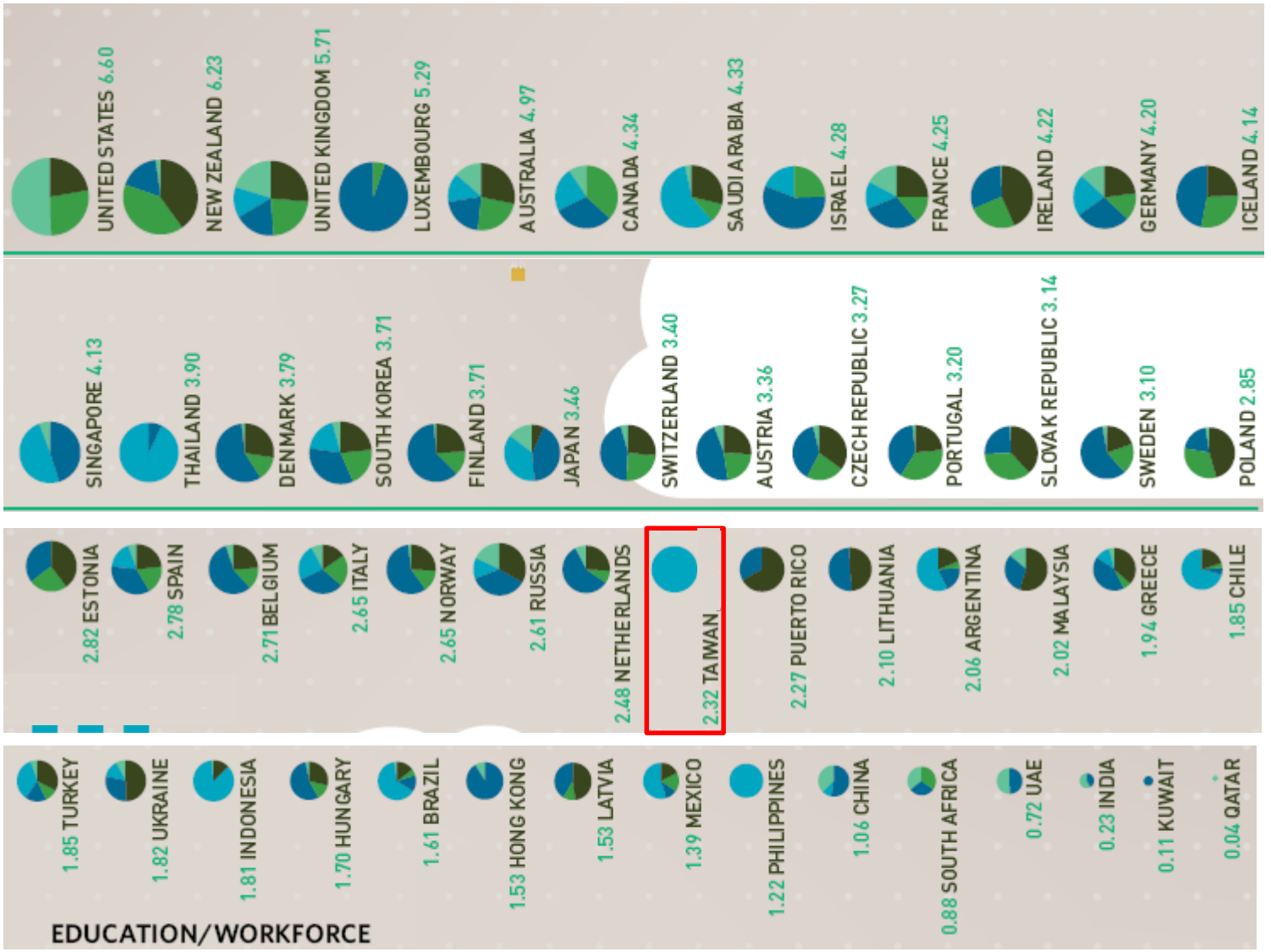
#12



SCORECARD CATEGORY #4: EDUCATION/WORKFORCE

High-tech innovation demands a highly educated workforce

Taiwan #33



Government Policy and Strategies: Diamond Action Plan for Biotech Takeoff (2009)

To Develop Taiwan into A New drug and Medical Device R&D House and An Asian R&D Partner for the Global Community

Supra Incubation Center

• To establish biomedical hubs in Taiwan through incubation of biopharmaceutical and medical device startup companies

(www.siic.com.tw)

Translational Research

• Bridging upstream innovations of discovery research with downstream commercialization of biomed companies

(nrpb.sinica.edu.tw/)

BVC

• Joint investment of US$ 2B (60% private, 40% government)
• Taiwan Medtech Fund (TMF) was approved

TFDA

• Inaugurated on Jan. 1, 2010
• Set up regulatory environment of international standard

(Center of Drug Evaluation)
www.cde.org.tw/eng/

Boosting Biotech to a Trillion NT-Dollar Industry

Taiwan's economic engine: from ICT to Biotech

Taiwan Biotech Take-off Action Plan (2013)

Basic R&D at Academic & Research Institutions → Pharmaceuticals/ Medical Devices Commercialization → Pharmaceuticals/ Medical Devices Clinical Trials → Product Reaches the Market

Industrialization R&D Center Builds on Upstream R&D (MOEA)

–Establishment of Biotech Pharmaceuticals Pre-clinical Core Platform
–Establishment of Medical Devices Rapid-Prototyping Center

Promotion of the SI²C to Provide an Integrated Service Platform (NSC)

– Provides legal, IPR, technical, and operations commercialization services
– Hardware resources for factory incubation: Hsinchu Biotech Park (medical devices), South Taiwan Science Industry Park (medical devices), National Biotechnology Research Park in Nangang (pharmaceuticals), experimental animal center

Foster International Harmonization (DOH)

– Establishment of an integrated and transparent evaluation process of medical products
– Greater efficiency in the evaluation process of medical products
– Promotion of regional regulatory harmonization
– Assistance in the industry's development

Establishment of BVC to Attract Private Funding matching with National Development Fund

–Capital will be introduced into the biotech industry, with the capital make-up of the BVC being on a 40:60 basis (government 40%, private sector 60%)

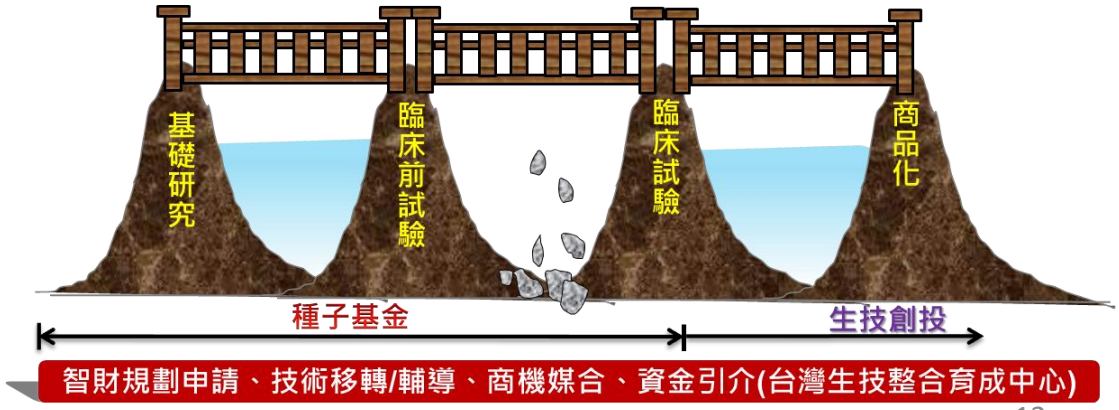
生技整合育成中心

(Supra Integration and Incubation Center, SI²C)

SI²C 以 Branding Taiwan 為目標，針對藥品、醫材執行四大主軸工作：

1. 評估、建構及串連產業價值鏈研發能力、平台及核心設施，讓有潛力的新藥與醫材能順利往價值鏈後端推動，增加其成功的機會，使台灣在特選的疾病及產品種類居亞太領先及領導的地位；
2. 建立完整的選題機制，主動積極發掘與篩選國內外具商業化潛力及研發可行之案源，進行輔導與協助；
3. 成立種子基金，支持前期研發計畫，以與國內創投後期研發的投資接軌；
4. 構思成立新的園區模式，使生醫園區成為研發的**One-stop shop**，協助新興業者與學術界研發團隊在需要時能適時運用其所建構的平台與核心設施，並連結政府相關單位窗口及新興公司資金協助及整合服務。

建立並串接研發鏈各階段之能量



資料來源:國科會

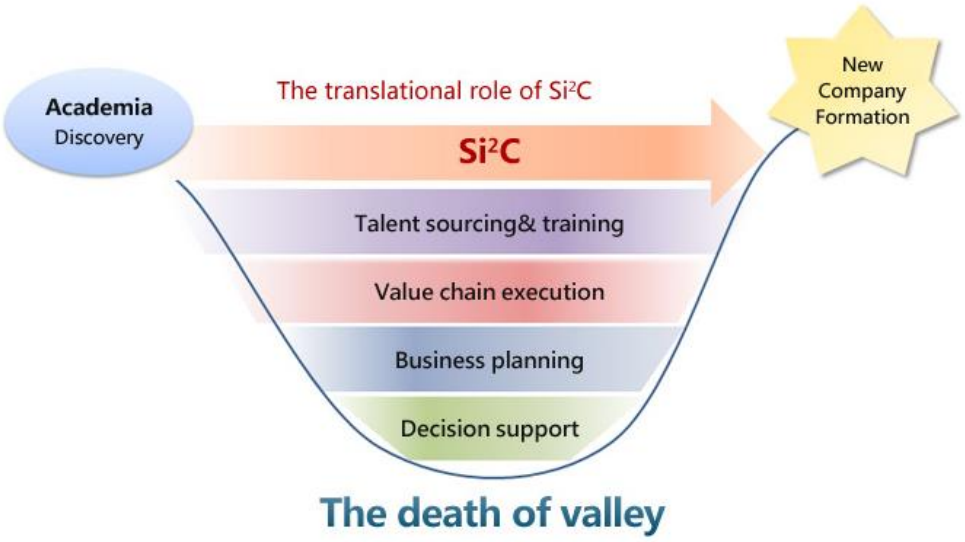
Supra Integration and Incubation Center (SI2C)

Connection of the value chain

Identification of potential projects

Securing talents for biomedical technology

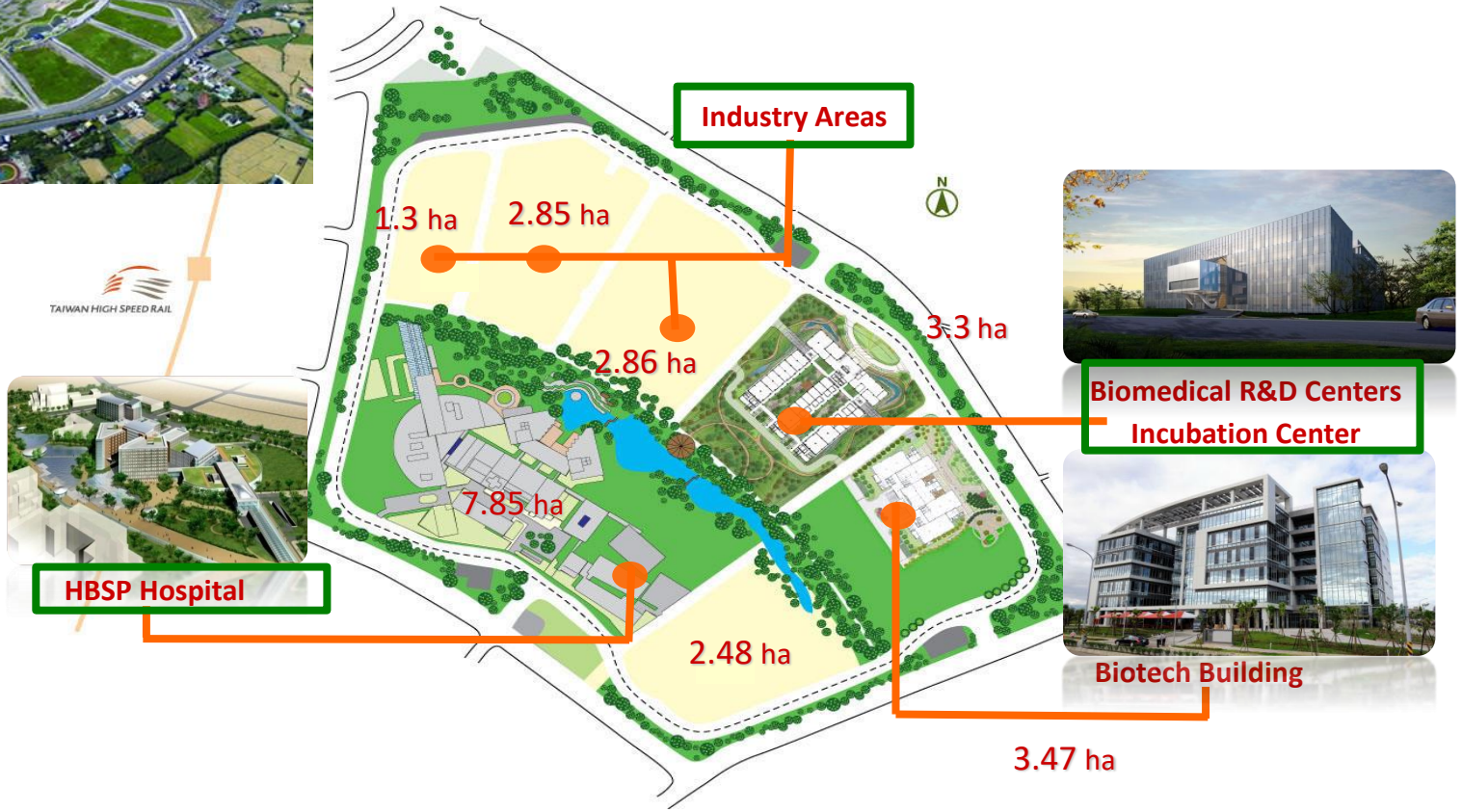
Build-up Taiwan biomedical ecosystem



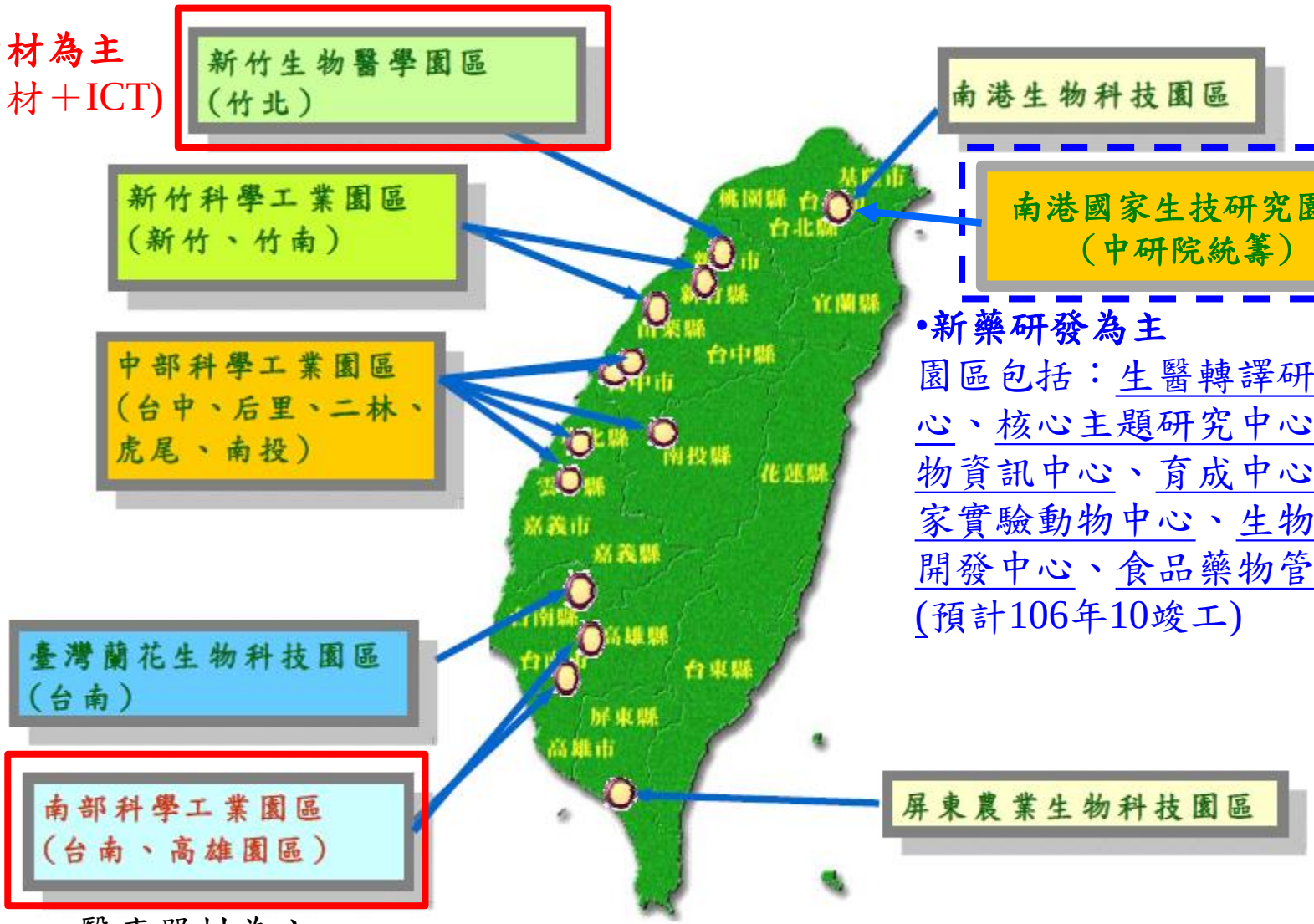
Hsinchu Biomedical Science Park

Total Area: 38.1 hectares

- Establish biomedical devices industry cluster
- Emphasize on an interdisciplinary approach – ICT-Biotechnology-Healthcare Convergence



生技聚落規劃


•醫療器材為主
(醫療器材＋ICT)
新竹生物醫學園區
(竹北)
新竹科學工業園區
(新竹、竹南)
中部科學工業園區
(台中、后里、二林、
虎尾、南投)
臺灣蘭花生物科技園區
(台南)
南部科學工業園區
(台南、高雄園區)
•醫療器材為主
(骨科、牙科材料)
南港生物科技園區
南港國家生技研究園區
(中研院統籌)
•新藥研發為主
園區包括：生醫轉譯研究中心、核心主題研究中心、生物資訊中心、育成中心、國家實驗動物中心、生物技術開發中心、食品藥物管理局
(預計106年10竣工)
屏東農業生物科技園區
桃園縣
台北縣
宜蘭縣
台中縣
南投縣
花蓮縣
嘉義市
嘉義縣
高雄縣
台東縣
屏東縣
高雄市

Nature 2011

NEWS FEATURE

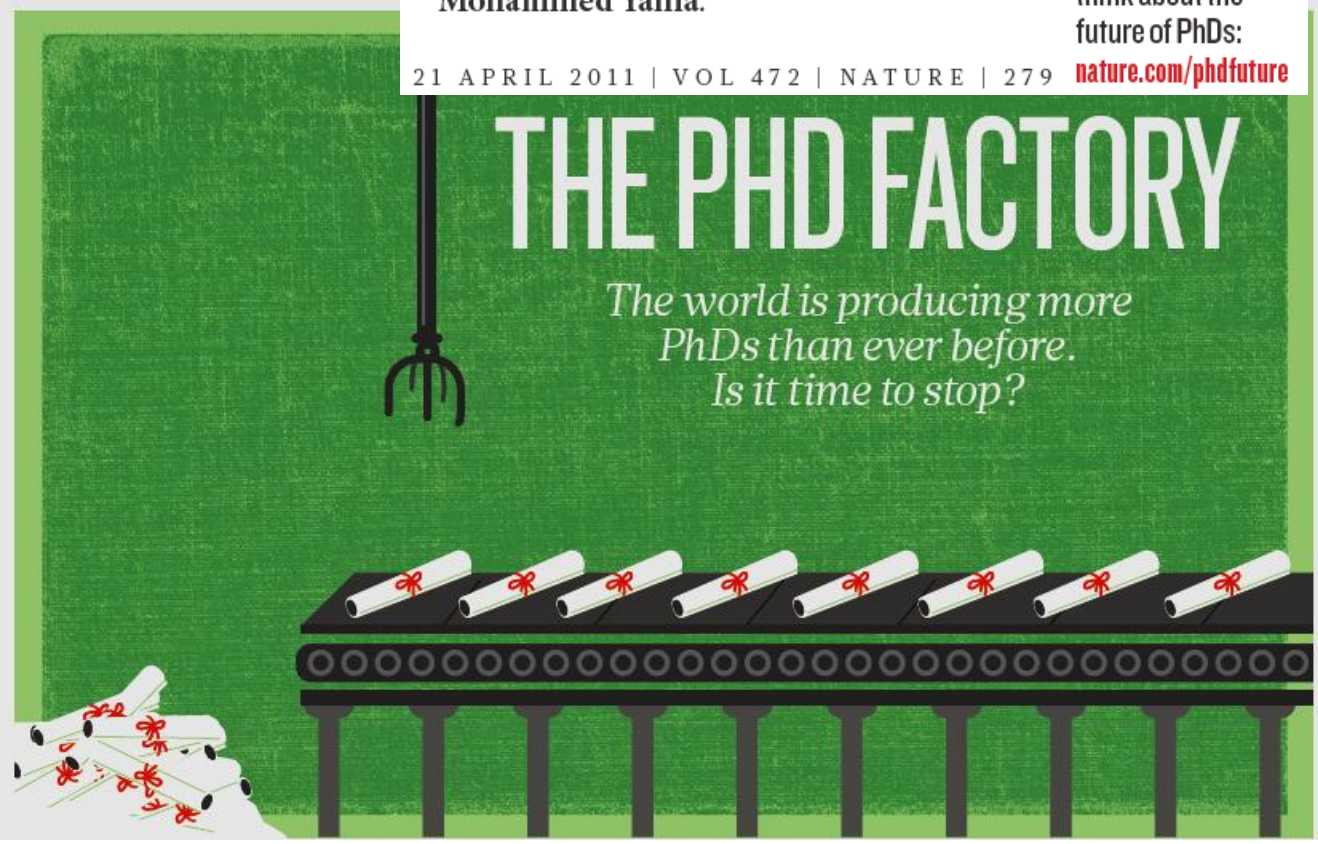
Reporting by **David Cyranoski, Natasha Gilbert, Heidi Ledford, Anjali Nayar** *and* **Mohammed Yahia.**

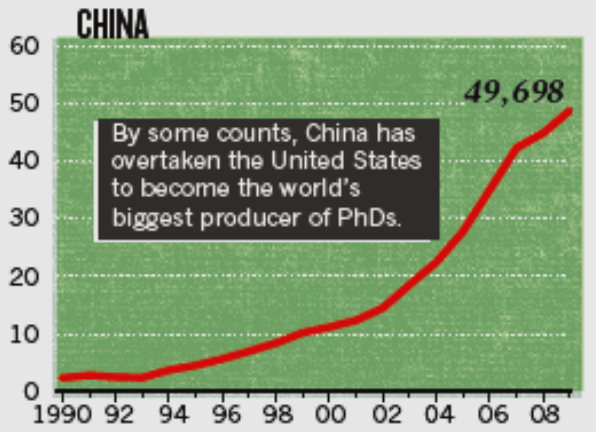
NATURE.COM
Tell us what you think about the future of PhDs:
nature.com/phdfuture

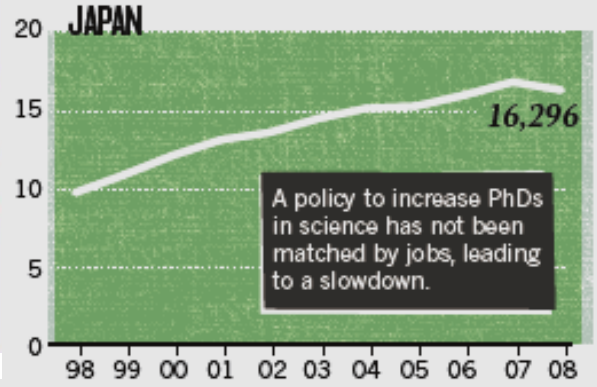
21 APRIL 2011 | VOL 472 | NATURE | 279

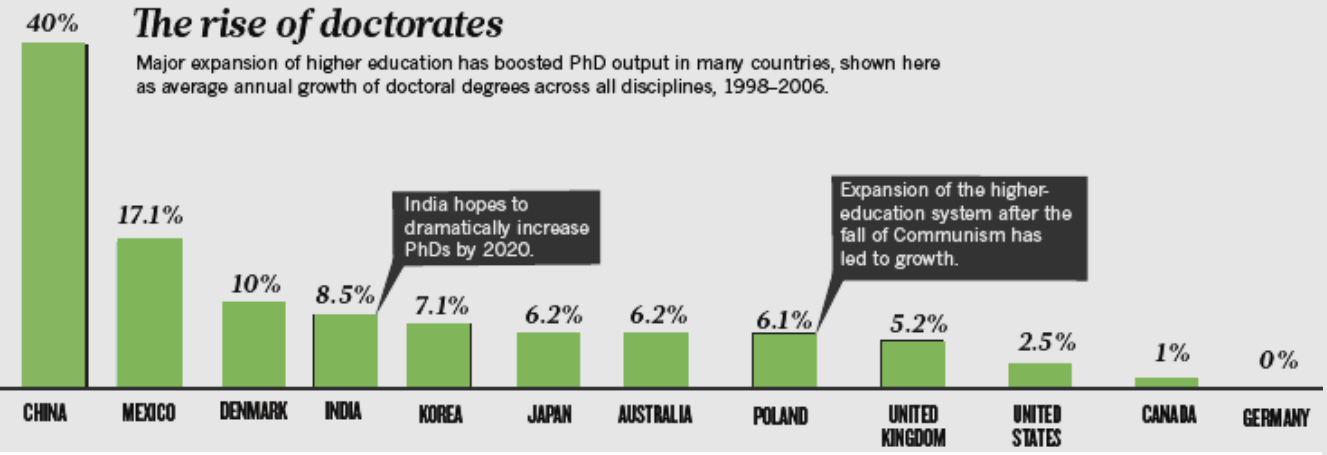
THE PHD FACTORY

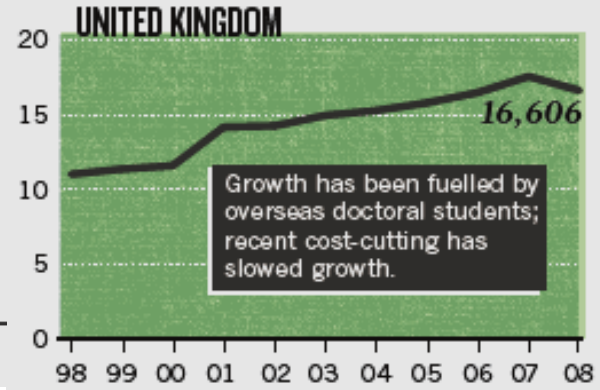
The world is producing more PhDs than ever before. Is it time to stop?



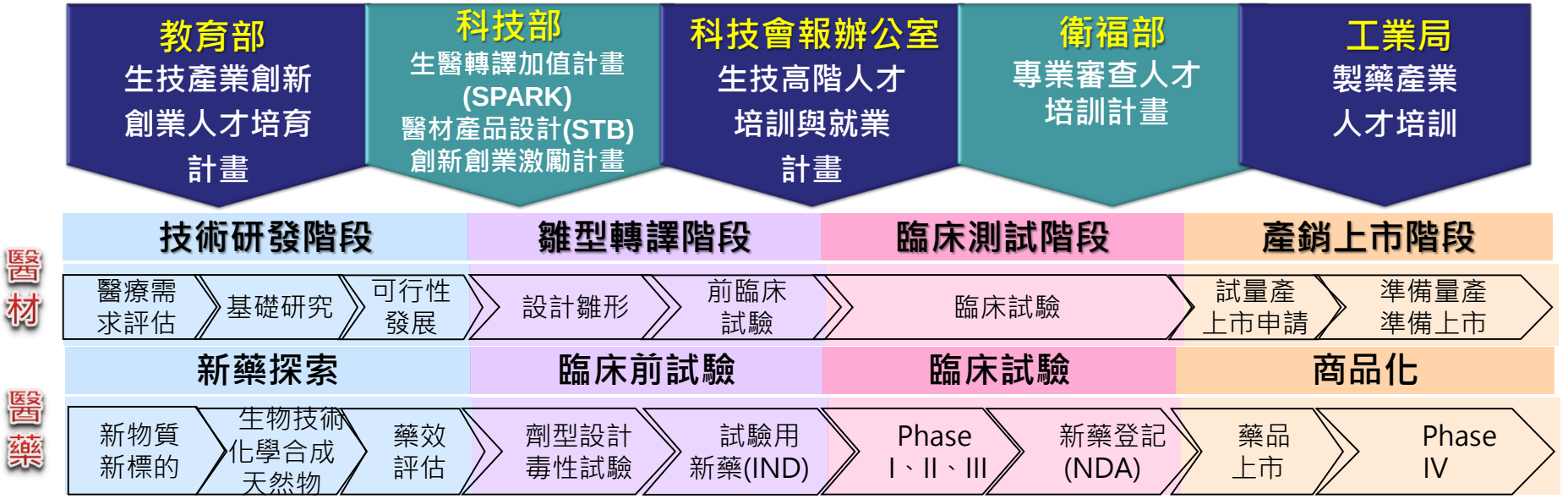








各部會推動生技人才培育綜整



- **從醫材或醫藥研發鏈的上游到下游的產業端，我國現行已有各相關部會的人才培育或培訓計畫。**
- **教育部**:鼓勵各大學校院開設跨領域生技課程，培育以實際應用、符合市場需求與生技創新及創業為核心之生技關鍵技術跨領域創新創業人才。屬建立我國大專院校學生具備生技產業跨領域的mindset。**(人才扎根)**
- **科技部**:透過實際案例(SPARK)或選送人員至國外訓練(STB)或給予創業的第一桶金(創新創業計畫)，導引我國生技人才朝產業應用或創新創業邁進的人才培訓。**(實務培訓)**
- **科技會報辦公室**:提供藥品、醫療器材、醫療管理等在職實戰訓練(on-the-job training)，協助博士級人才赴產業界就業，進而促進生技產業發展。**(銜接業界)**
- **衛福部**:培育藥物專業審查人才，以強化我國核心之審查能量。**(審查員精進)**
- **工業局**:邀請業界具實務經驗專家，辦理人才培訓課程，以培植我國製藥產業專業技術人才，進而提昇我國製藥界人才的水準。**(人才精進)**

科技部負責之生技人才相關計畫

1. 推動生醫與醫材轉譯加值人才培訓計畫 (SPARK-Taiwan)
2. 推動醫療器材跨領域人才培訓計畫(STB)

台灣生技整合育成中心 Supra Integration and Incubation Center

生醫人才培育 BioMed Talent Training

NARLabs 國家實驗研究院 科技政策研究與資訊中心 Science & Technology Policy Research and Information Center

SPARK計畫介紹

- 由Si²C規劃推動之SPARK-Taiwan計畫，係以美國生技產業發展聚落的搖籃-史丹福大學為合作對象，接軌**史丹福大學SPARK課程**、培訓模式及顧問專家，進行我國生醫與醫材轉譯加值的人才培訓，給以產品開發鏈上轉譯、醫療法規、智財與談判、行銷與商業規劃等重要訓練課程，並透過受訓學員團隊提出的創新前瞻轉譯加值計畫(以進行proof-of-value or proof of concept為主)，以實際案例進行跨領域人才之培訓。

台灣生技整合育成中心(Si2C)及專家顧問團

新藥/醫療器材

技術開發教練
及專責管理團隊

Real time
monitoring

培訓團隊

培訓大學 (Anchor university)

- Matching Fund (50%)，台大和成大
- 技術開發教練及管理團隊進行專責輔導
- 校內外軟硬體資源整合
- 協助輔導校外培訓團隊

培訓團隊

- 學研成果轉譯加值(進行proof-of-value or proof of concept為主)
- 技術開發教練及管理團隊進行專責輔導
- 校內外軟硬體資源整合

資料來源：科技部

SPARK 總體成效

(二) 與Anchor university連結，擴散SPARK Taiwan目標與精神

AU	第一期 (102年度)	第二期 (103年度)	第三期 (104年度；執行中)	歷年總培訓團隊數
總配合款	2,100萬	6,300萬	7,025萬	
台大	10	26 (6)	22 (11)	41
成大	6	14 (2)	13 (7)	24
陽明	-	12	10 (6)	16
北醫	-	10	9 (6)	13
中國醫	-	12	10	22
清大	-	-	7	7
總計團隊數	16	74	71	123
總計培訓人數	69	263(25)	273(108)	472

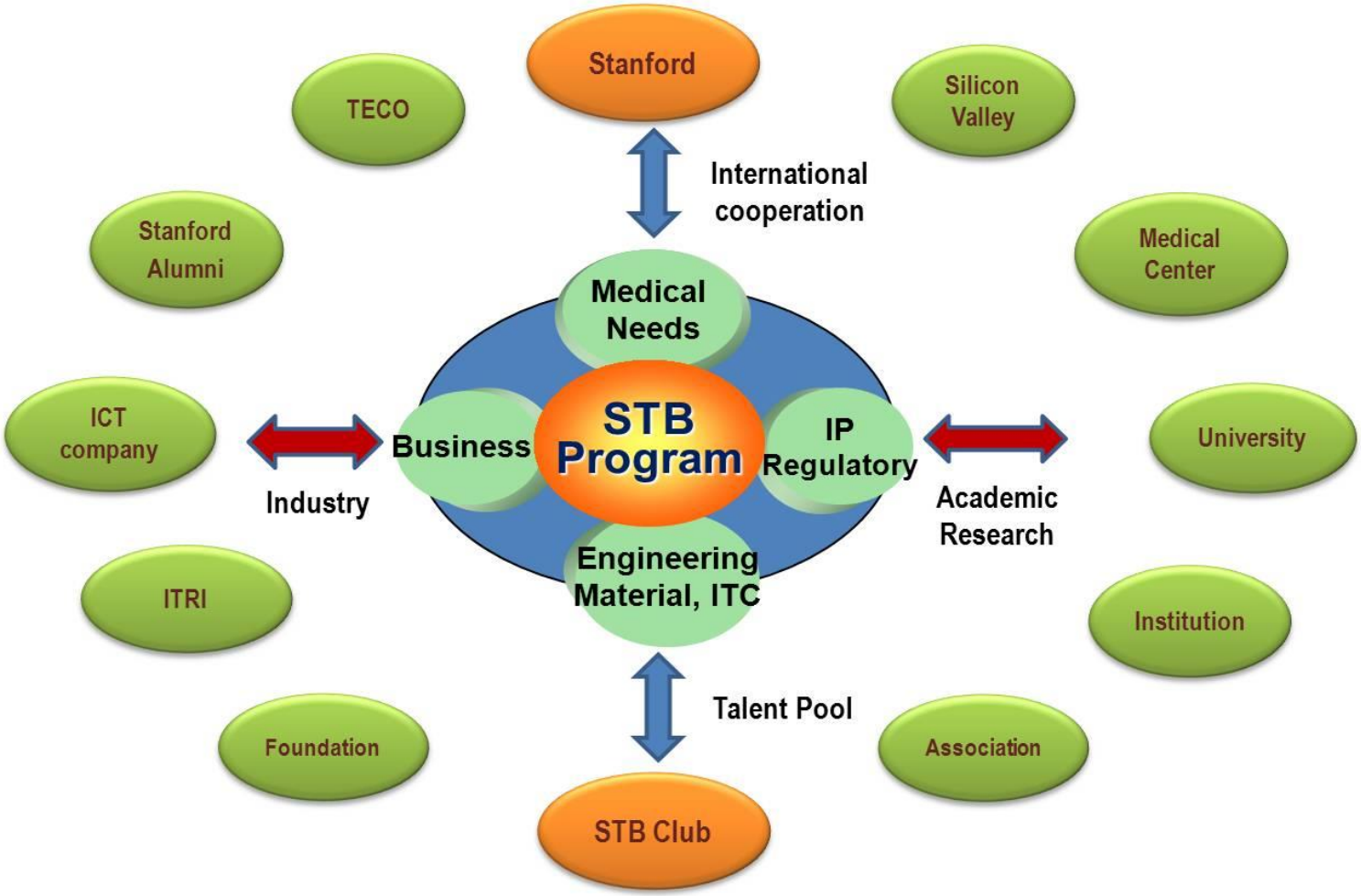
亮點說明 - SPARK

102-103年期 (第一~二期)
團隊量化成果:

- ✓ 共補助5家區域型培訓大學，累計培訓82個團隊，共計307位培訓團隊成員投入研發產品化訓練，其中29%為臨床人員。

台灣-史丹福醫療器材產品設計人才培訓計畫
Stanford-Taiwan Biomedical Fellowship Program, STB

強化與美國史丹福大學合作，利用矽谷成熟之生態系統，培育台灣具創新性高階醫材產品設計及產業化實務能力的「跨領域種子人才」



總體成效 - STB

▶ 醫療器材人才培育計畫

Stanford培訓計畫

- ✓ 超過500位申請者，選出40位STB學者
- ✓ 33 位學員結訓→ 10家新創公司，累計實收資本額超過5億元

STB 國內培訓課程 (2009-2012)

- ✓ 119名跨領域醫工人才
- ✓ 34組醫材概念創意
- ✓ 4家新創公司，累計實收資本額超過1億元

▶ 醫療創業支援平台

STB eNET/ 生醫人培FB

國際創新醫療器材技術與產品發展現況與趨勢資訊分享平台

- ✓ www.stb.org.tw
- ✓ FB Page

STB交流媒合

- ✓ STB大師論壇2場
- ✓ STB創業小聚1場
- ✓ 業師諮詢 16案次

創新醫材育成

創意概念輔導加值

- ✓ 4案通過輔導
- ✓ 2案引介申請育苗或天使計畫
- ✓ 2案轉入明年輔導

生技高階人才培訓與就業計畫

◆計畫目標

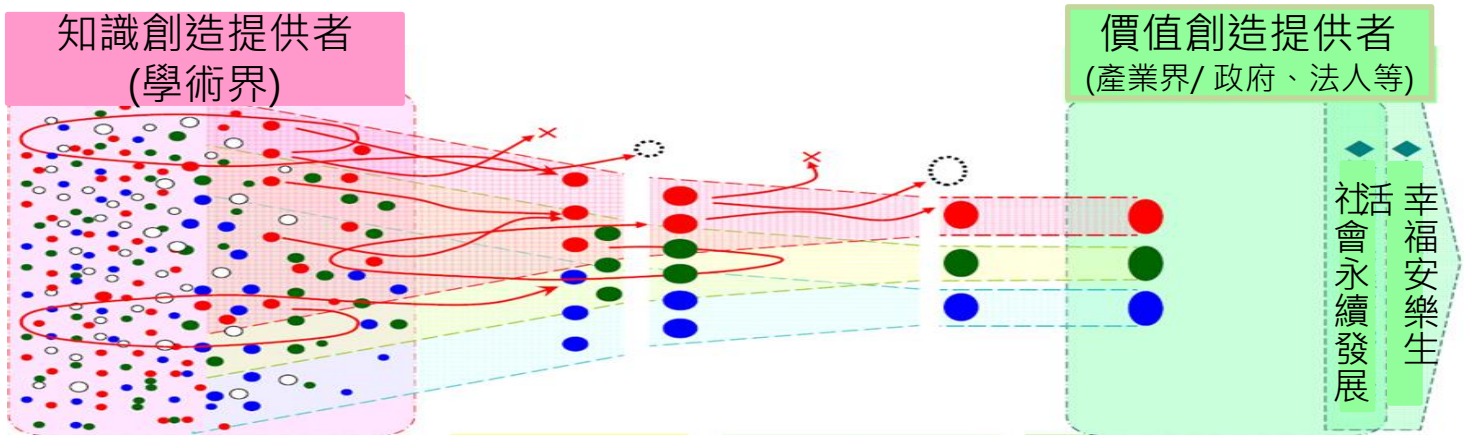
- 加速**藥品**、**醫材**、**醫管服務**的產業化推動，促進產業升級與國際化
- 生技博士到法人/學研機構「再加值」一年，能為業界聘雇或創業，縮短學用落差
- 預計**3年**、投入**3億**元、培訓**300位**符合業界需求之生技高階人才，導引進入業界

◆ 推動機制

- 透過國內重要的法人及學研機構擔任培訓單位，規劃一年期的藥品、醫療器材、醫療管理等在職實務訓練(On-the-job-training)，並提供6個月以上的產業實習機會，以累積博士級生技訓儲菁英的實務經驗和核心技能，橋接到產業就業或創業。

◆預期效益

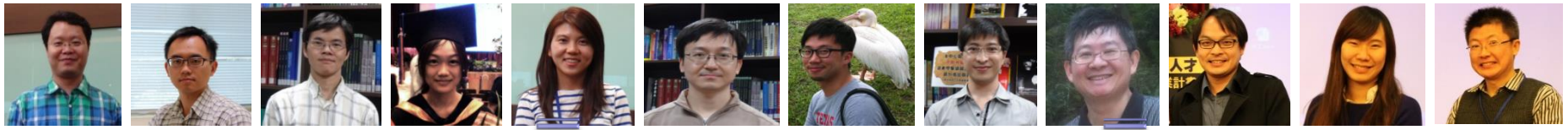
- 帶動業界晉用博士人才，提升產業**研發能量**，增加國際市場競爭力
- 解決生技產業高階人才**供需失衡**問題，改善生技博士畢業即失業現象
- 從學研界疏導高階生技人才到產業界，創造博士**就業機會**



教育部統計生技相關領域畢業生 450~497人/年
在學博士生 3400~ 3640 人/年

經濟部工業局統計目前產業需求
博士級：140人/ 年

102年(第一期)成功導引人才進入產業界



工業技術研究院 Industrial Technology Research Institute

79位博士人才

國立臺灣大學 National Taiwan University

財團法人生物技術開發中心 DEVELOPMENT CENTER FOR BIOTECHNOLOGY

國立清華大學

國家衛生研究院 National Health Research Institutes

中央研究院 ACADEMIA SINICA

財團法人 金屬工業研究發展中心 Metal Industries Research & Development Centre

生技醫藥廠商(59家)

國光生技
藥華醫藥
聯亞生技
晟醫
中天集團
樂斯科
友華生技
泰宗生技
上銀科技
信東生技
普生
彥臣生技
瑞寶基因
雃博
順天堂
GSK
生達

財團法人 生技醫療科技政策研究中心 Research Center for Biotechnology and Medicine Policy

財團法人醫藥工業技術發展中心 Medical and Pharmaceutical Industry Technology and Development Center

臺北醫學大學 TAIPEI MEDICAL UNIVERSITY

財團法人醫藥品查驗中心 Center for Drug Evaluation, Taiwan

成功大學 National Cheng Kung University

NARLabs 國家實驗研究院 National Applied Research Laboratories

生技高階人才培訓計畫102-103年(第一、二期)培訓成果

流向	102年(第一期)人數	103年(第二期)人數
培訓後創業	5	3
實習廠商留任	57	43
培訓單位留任	8	5
培訓單位媒合	5	4
自行求職	21	22
成功就業 合計	96	77
博士後研究員	7	16
未就業	7	15
未成功就業 合計	14	31
培訓人數 合計	110	108
成功就業率	87%	71%

- **成功導引高階人才進入業界**

  訓儲菁英有75%進入業界就業，25%於學研機構

- **廠商留任意願提高**

  訓儲菁英第一期實習廠商留任率40%，第二期提高為59%

- **工作穩定度高**

  第一期訓儲菁英仍在原就職單位服務年資達1年以上者占成功就業人數69%

- **平均聘僱薪資**

  訓儲菁英的平均聘雇薪資均高於培訓期間之薪資，達6.3萬以上，最高者達9萬以上

Toward Precision Medicine:

Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease

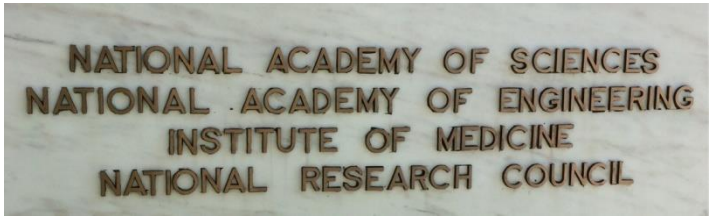
2011

Committee on A Framework for Developing a New Taxonomy of Disease

Board on Life Sciences

Division on Earth and Life Studies

NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES



REPORT TO THE PRESIDENT

BIG DATA AND PRIVACY: A TECHNOLOGICAL PERSPECTIVE

John P. Holdren
Assistant to the President for
Science and Technology
Director, Office of Science and Technology
Policy

2.2.1 Healthcare: personalized medicine

Not all patients who have a particular disease are alike, nor do they respond identically to treatment. Researchers will soon be able to draw on millions of health records (including analog data such as scans in addition to digital data), vast amounts of genomic information, extensive data on successful and unsuccessful clinical trials, hospital records, and so forth. In some cases they will be able to discern that among the diverse manifestations of the disease, a subset of the patients have a collection of traits that together form a variant that responds to a particular treatment regime.

2.2.2 Healthcare: detection of symptoms by mobile devices

Many baby boomers wonder how they might detect Alzheimer's disease in themselves. What would be better to observe their behavior than the mobile device that connects them to a personal assistant in the cloud (e.g., Siri or OK Google), helps them navigate, reminds them what words mean, remembers to do things, recalls conversations, measures gait, and otherwise is in a position to detect gradual declines on traditional and novel medical indicators that might be imperceptible even to their spouses?

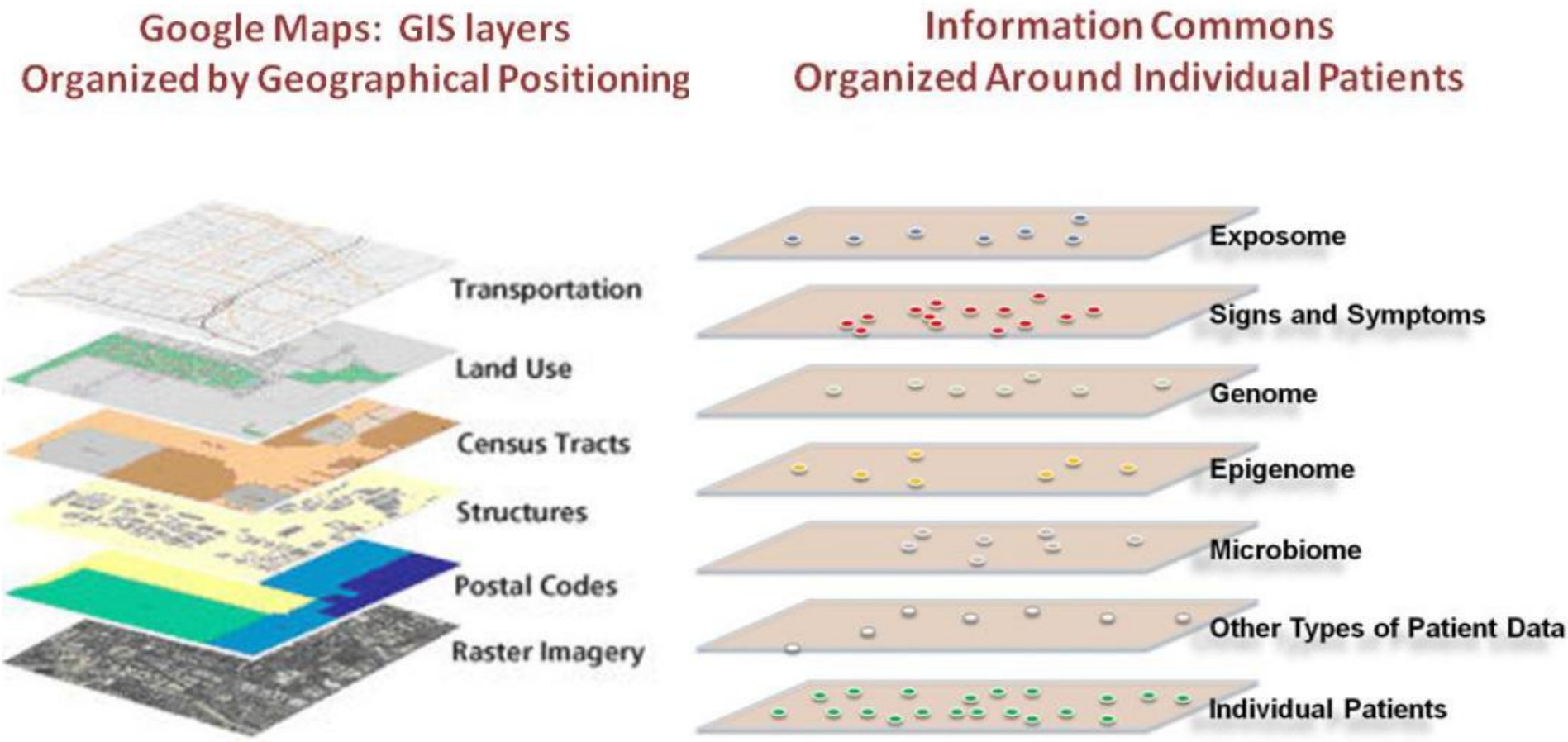


Figure 1-2: The proposed, individual-centric Information Commons (right panel) is somewhat analogous to a layered Geographical Information System (left panel). In both cases, the bottom layer defines the organization of all the overlays. However, in a GIS, any vertical line through the layers connects related snippets of information since all the layers are organized by geographical position. In contrast, data in each of the higher layers of the Information Commons will overlay on the patient layer in complex ways (e.g., patients with similar microbiomes and symptoms may have very different genome sequences). Source: FPA 2011 (left panel).

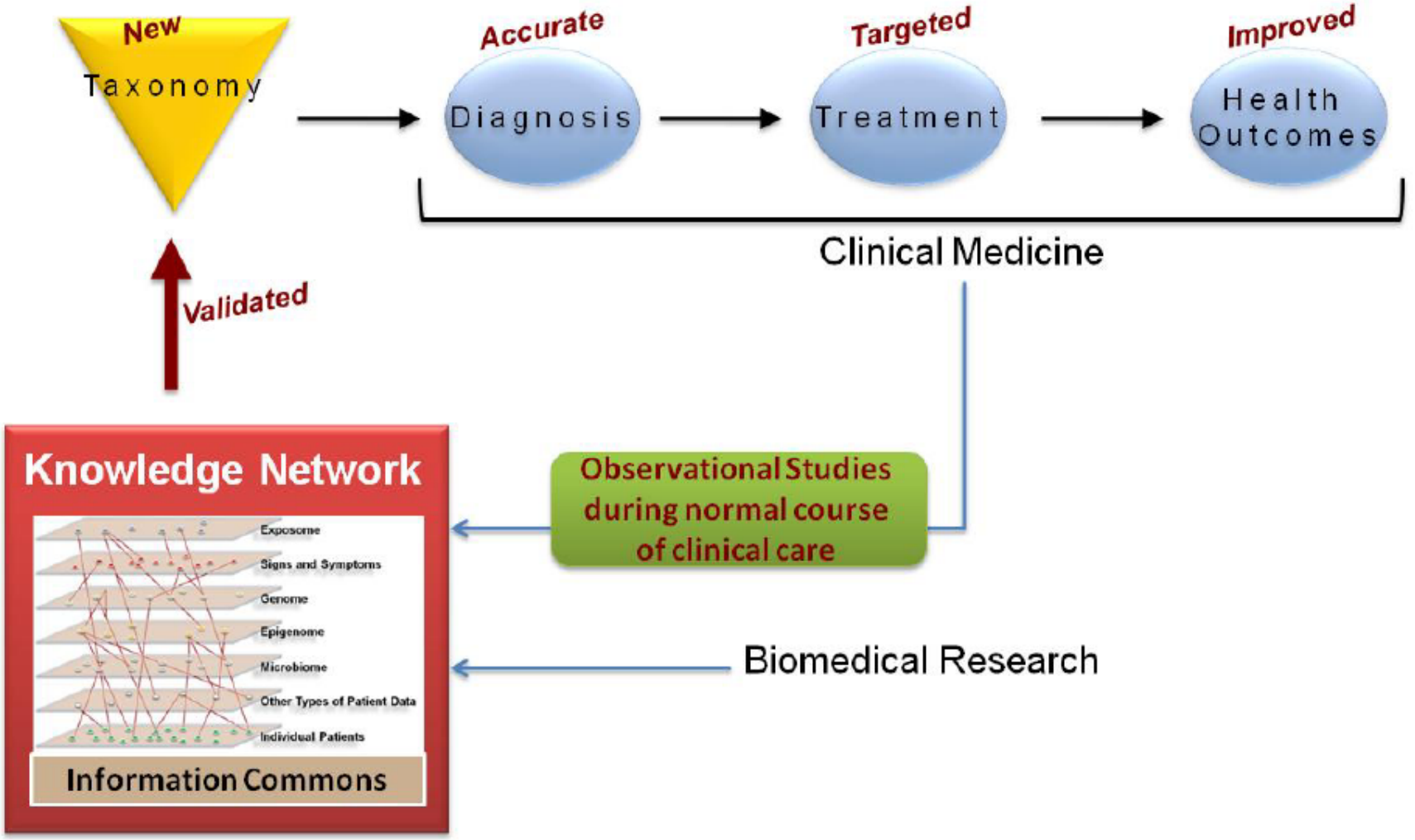


Figure 1-3: An individual-centric Information Commons, in combination with all extant biological knowledge, will inform a Knowledge Network of Disease, which will capture the exceedingly complex causal influences and pathogenic mechanisms that determine an individual's health. The Knowledge Network of Disease would allow researchers hypothesize new intralayer cluster and interlayer connections. Validated findings that emerge from the Knowledge Network, such as those which define new diseases or subtypes of diseases that are clinically relevant (e.g., which have implications for patient prognosis or therapy) would be incorporated into the New Taxonomy to improve diagnosis and treatment.

Biology Has Become a Data-Intensive Science

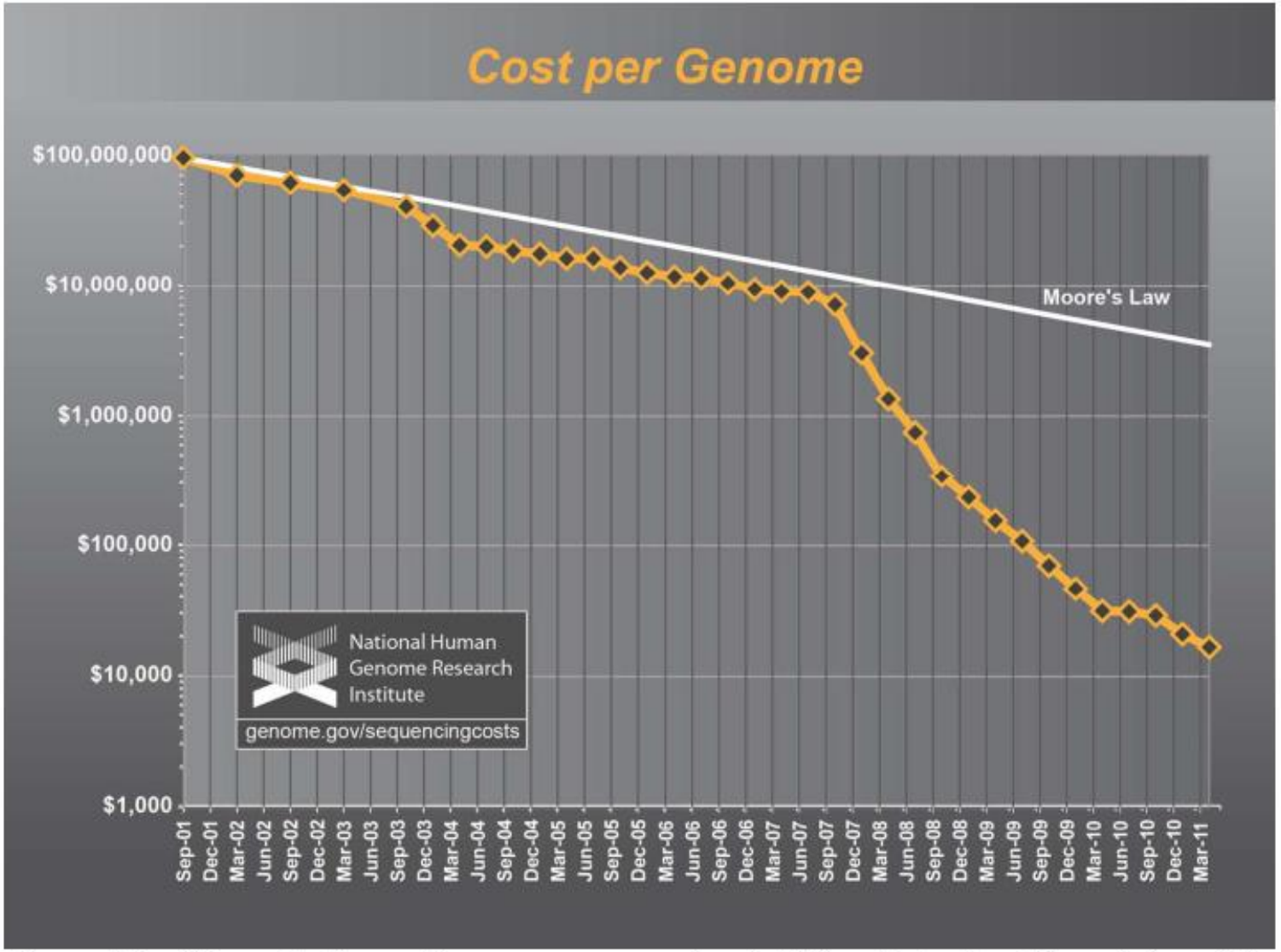


Figure 2-1: The cost of complete genome sequencing is falling faster than Moore's Law. The cost is still dropping rapidly, with a "$1000 genome" becoming a realistic target within a few years. Source: Wetterstrand 2011.

Cancer Research: Lung Cancer

at NTU Center of Genomic Medicine

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JANUARY 4, 2007 VOL. 356 NO. 1

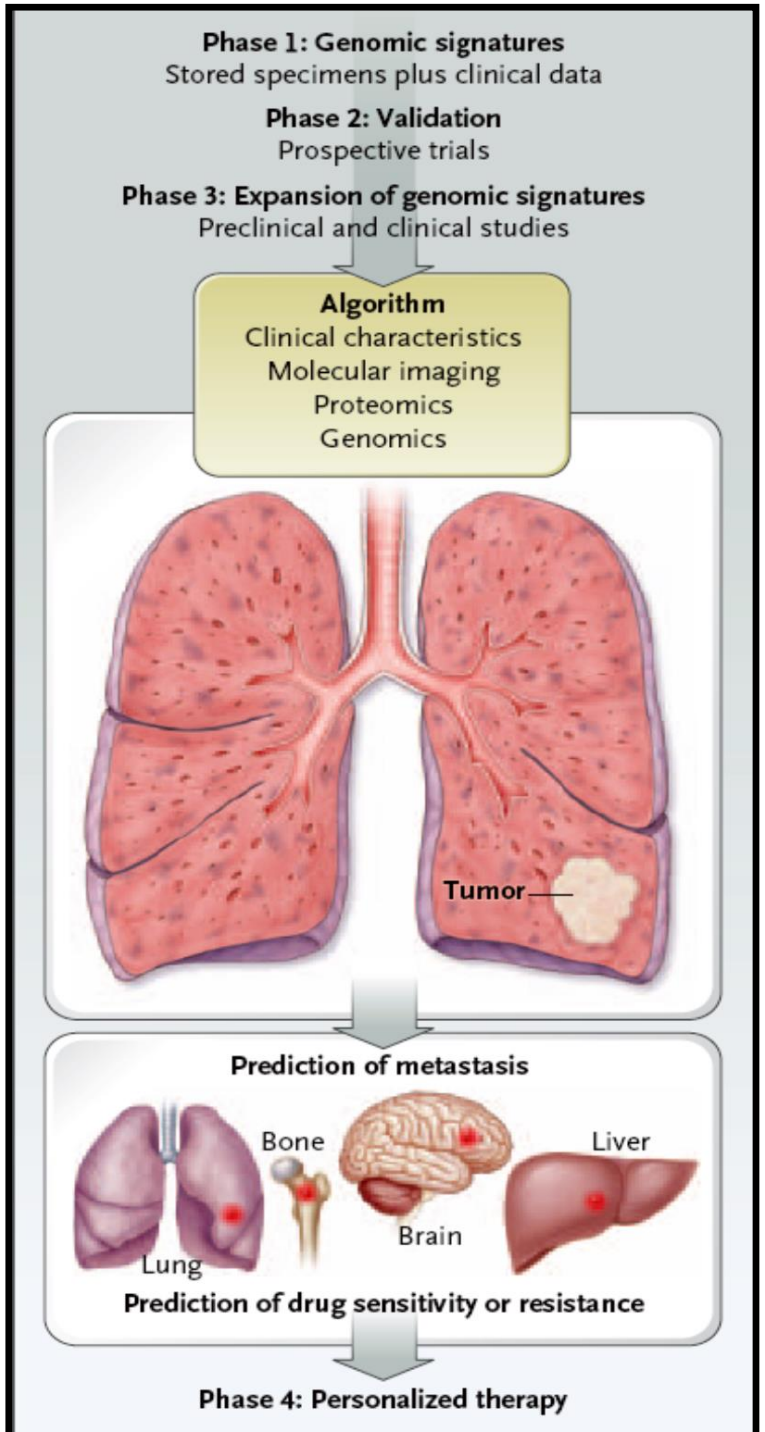
A Five-Gene Signature and Clinical Outcome in Non–Small-Cell Lung Cancer

Hsuan-Yu Chen, M.Sc., Sung-Liang Yu, Ph.D., Chun-Houh Chen, Ph.D., Gee-Chen Chang, M.D., Ph.D., Chih-Yi Chen, M.D., Ang Yuan, M.D., Ph.D., Chiou-Ling Cheng, M.Sc., Chien-Hsun Wang, M.Sc., Harn-Jing Terng, Ph.D., Shu-Fang Kao, M.Sc., Wing-Kai Chan, M.D., Han-Ni Li, M.Sc., Chun-Chi Liu, M.Sc., Sher Singh, Ph.D., Wei J. Chen, M.D., Sc.D., Jeremy J.W. Chen, Ph.D., and Pan-Chyr Yang, M.D., Ph.D.

EDITORIAL

Molecular Signatures of Lung Cancer — Toward Personalized Therapy

Roy S. Herbst, M.D., Ph.D., and Scott M. Lippman, M.D.



The Opportunity to Integrate Data-Intensive Biology with Medicine

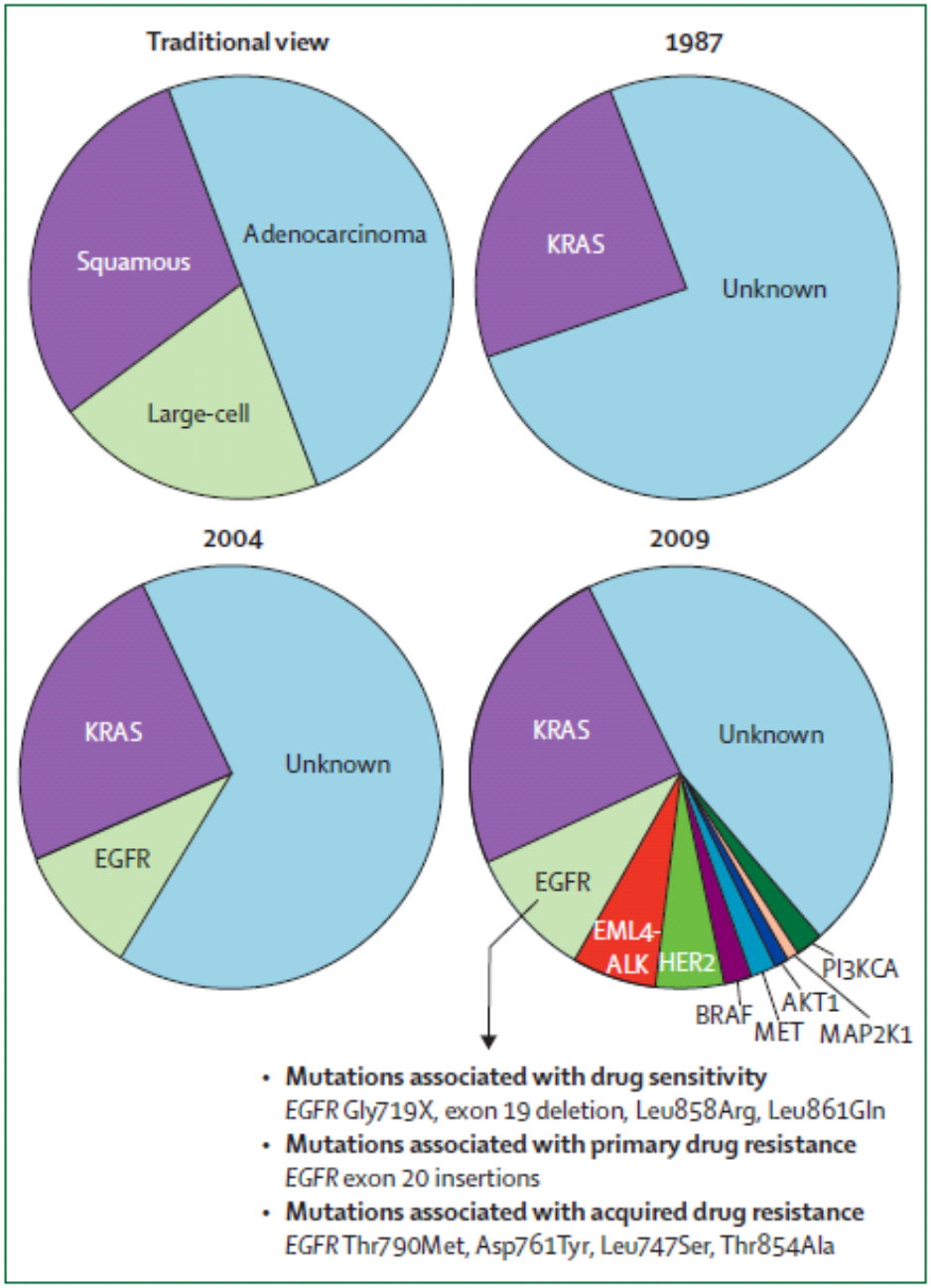
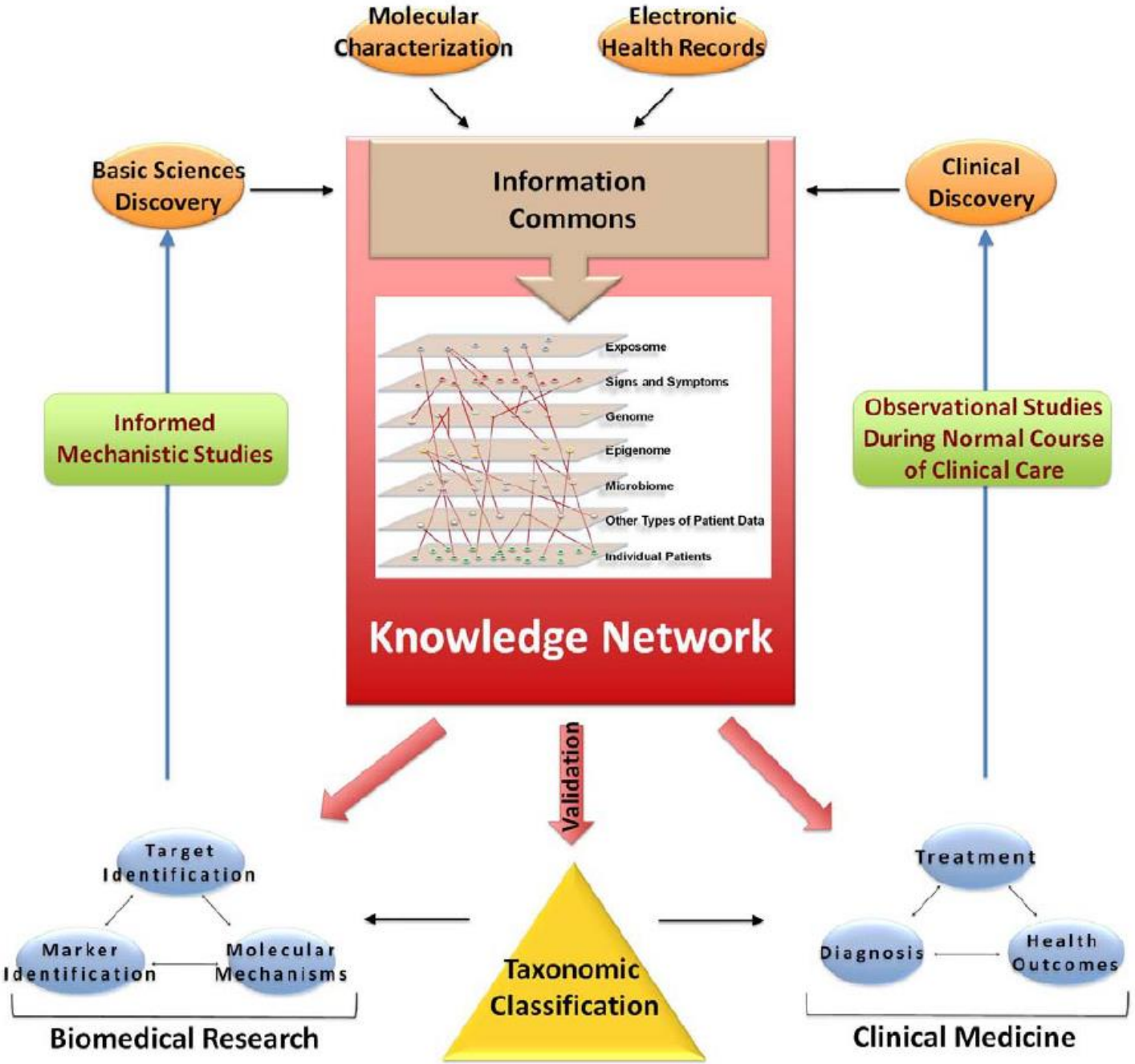


Figure 2-2: Knowledge of non-small-cell lung cancer has evolved substantially in recent decades.

The traditional characterization of lung cancers based on histology has been replaced over the past 20 years by classifications based on driver mutations. In 1987, this classification was rudimentary as only one driver mutation had been identified, KRAS. However, the sophistication of this system for molecular classification has improved with the advent of more genetic information and the identification of many more driver mutations. Similar approaches could improve the diagnosis, classification, and treatment of many other diseases.

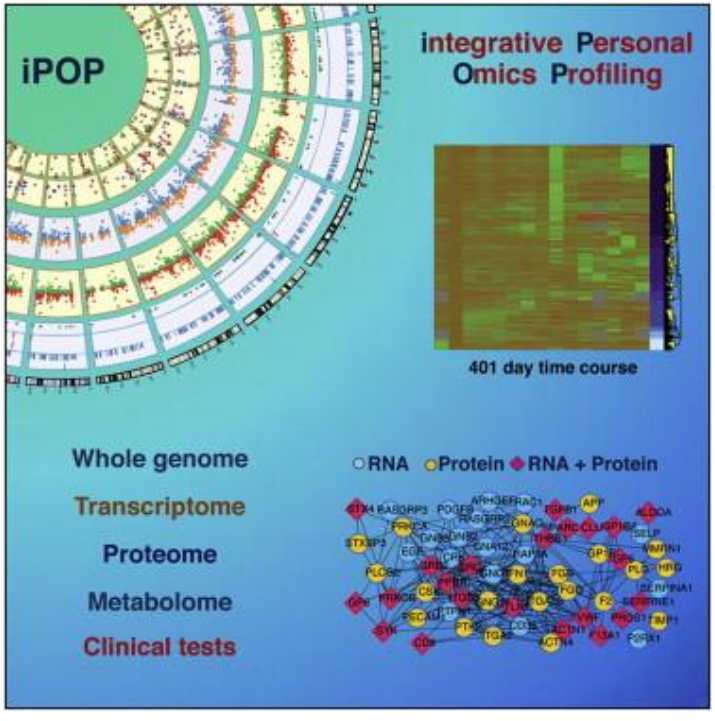
Source: Pao and Girard 2011

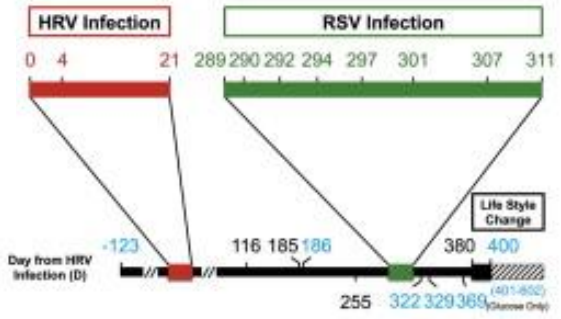
Figure 3-1: Building a Biomedical Knowledge Network for Basic Discovery and Medicine.

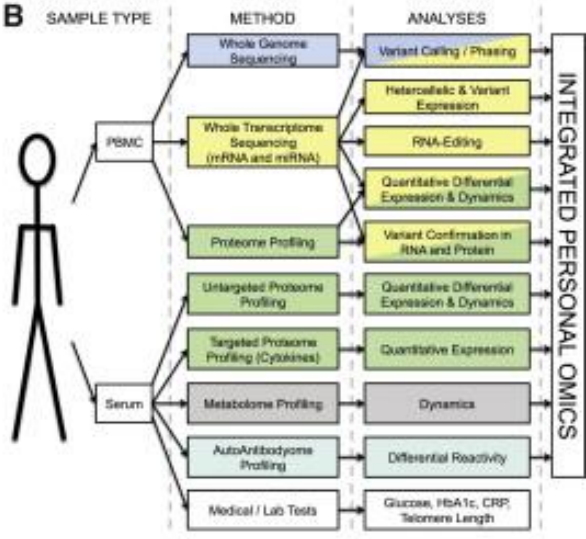


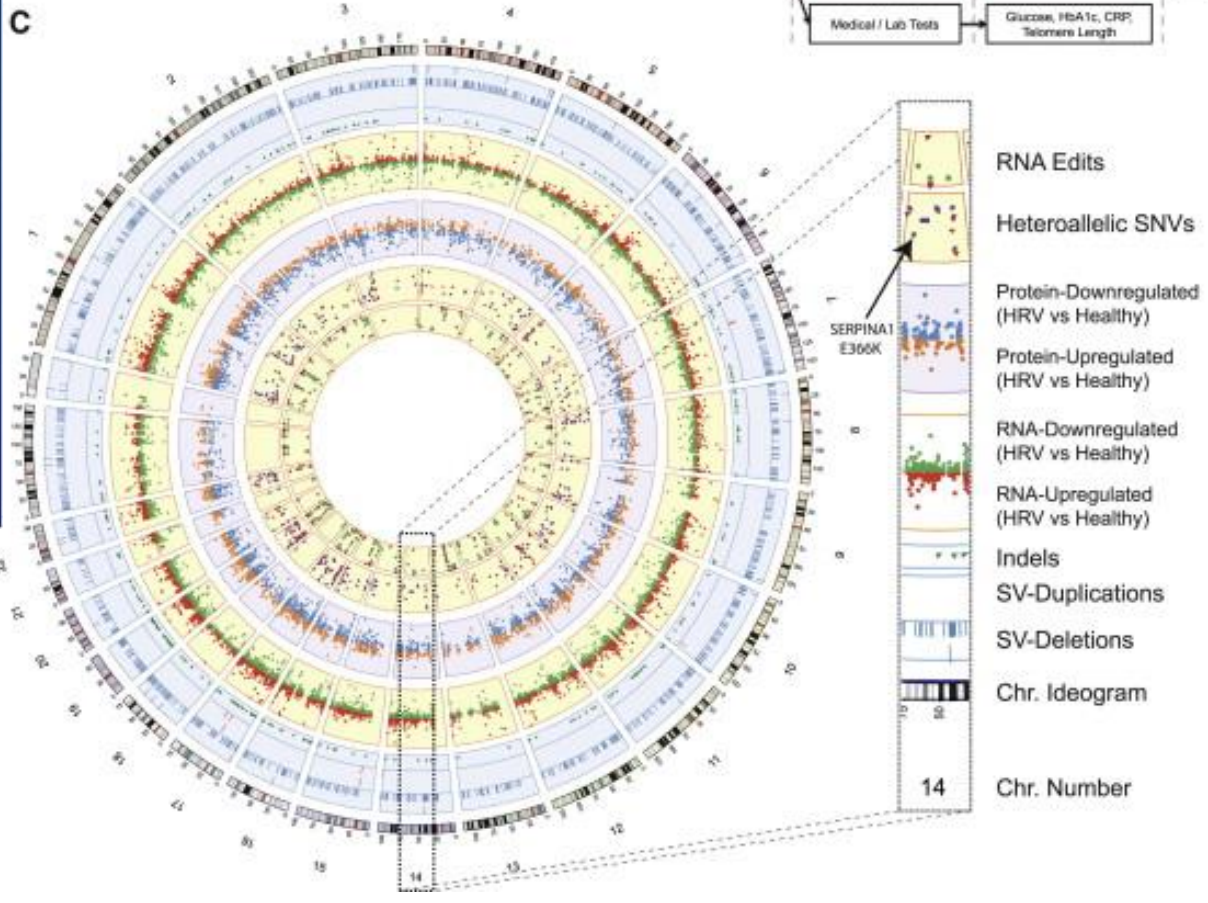
Cell *148*, 1293–1307, March 16, 2012

Personal Omics Profiling Reveals Dynamic Molecular and Medical Phenotypes









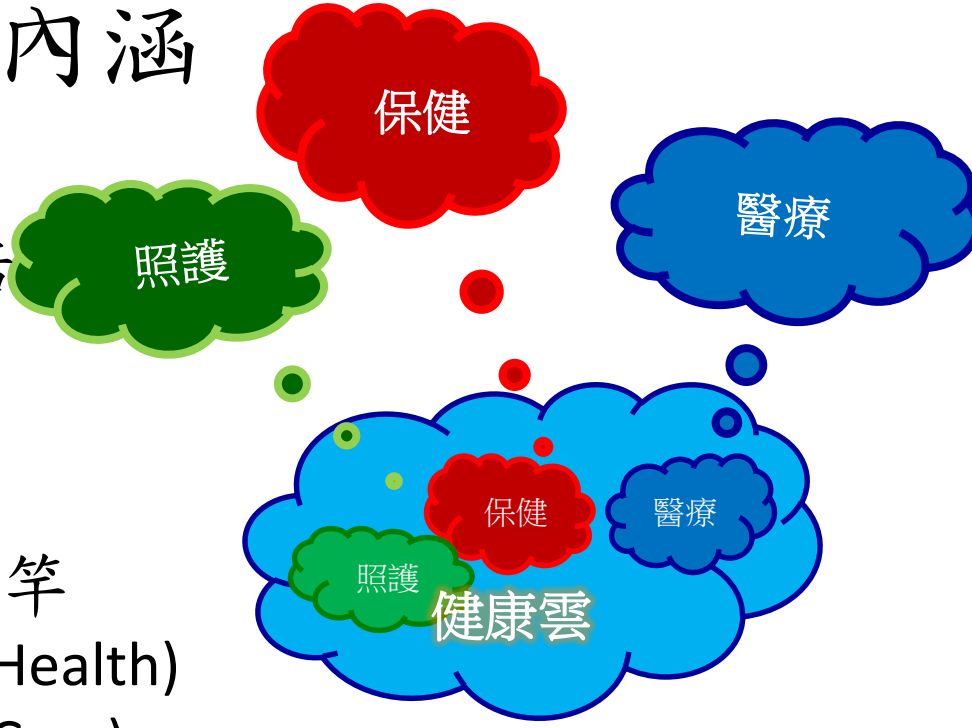
NATURE BIOTECHNOLOGY | NEWS AND VIEWS

Omics gets personal

Laura DeFrancesco

Nature Biotechnology **30**, 332 (2012)
Published online 10 April 2012

健康雲的內涵



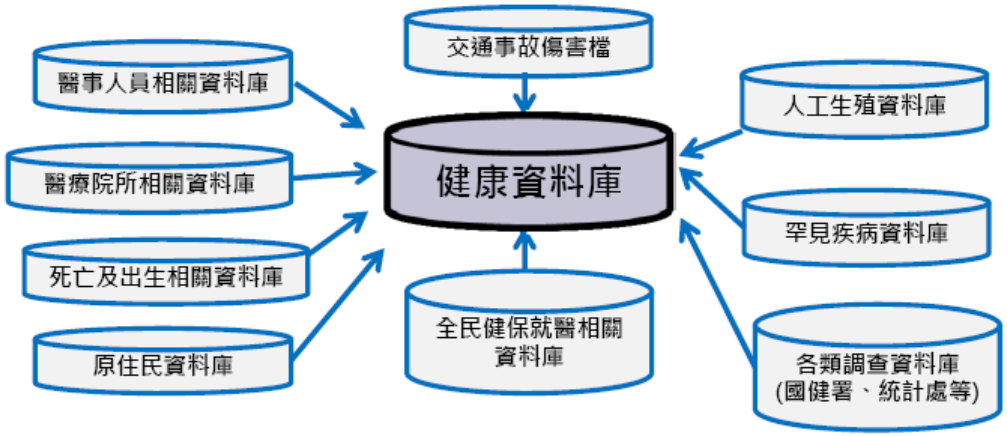
- 塑造全方位的健康優質生活
  - 平時：全時保健
  - 病時：個人化醫療
  - 年長：長期照護
- 塑造 ICT 智慧應用的國際標竿
  - 保健雲 =>優質健康 (Better Health)
  - 照護雲 =>照護提升 (Better Care)
  - 醫療雲 =>短期：資源最有效運用 (Lower Cost)
    長期：個人化醫療 (Personalized Medicine)
  - 健康雲 =>政府福利、產業發展並重的永續經營 (Sustainability)

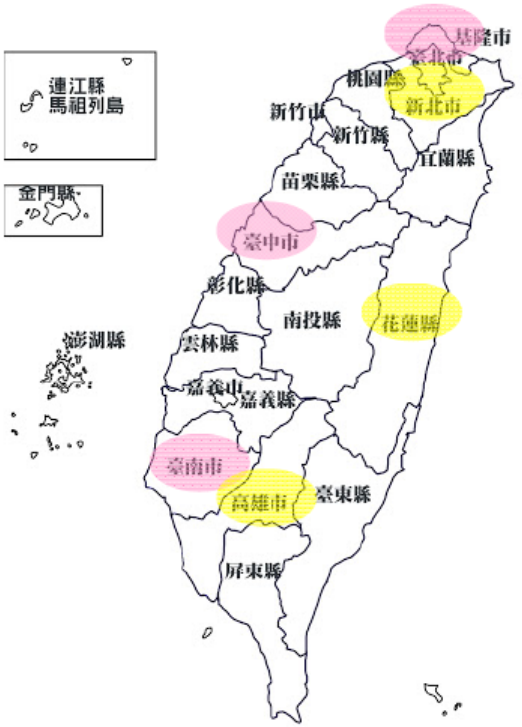
→未來醫學希望能做到P4醫學，也就是預防醫學（Preventive）、預測醫學（Predictive）、個人化醫學（Personalized）、參與醫學（Participatory）。

健康資料加值應用雲端化服務-執行現況

Ministry of Health and Welfare

- 健康資料加值應用協作中心分布
  - ➢已成立：台北車站協作中心、中國醫大、台北醫大、台灣大學、成功大學、 高雄醫大
  - ➢規劃中：陽明大學、長庚大學、慈濟大學
- 擴充健康資料庫資料檔種類 ※每年約25億筆資料





- 研發 R線上統計分析暨導引系統
- 建置指標查詢服務系統

健保資料庫運用： 鳳梨 vs. 鳳梨酥

?

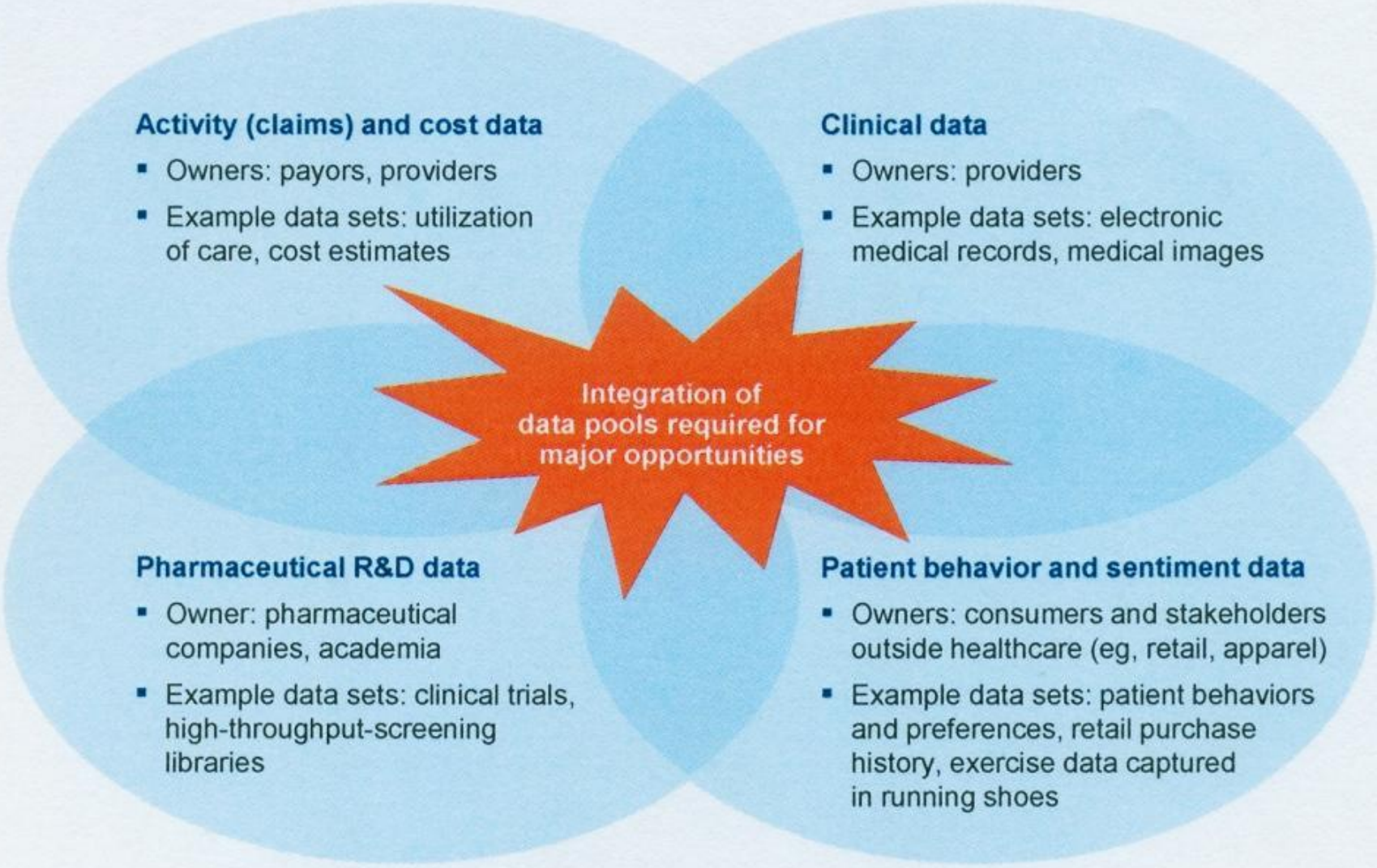
McKinsey,
Jan. 2013

Center for US Health System Reform
Business Technology Office

The 'big data' revolution in healthcare

Accelerating value and innovation

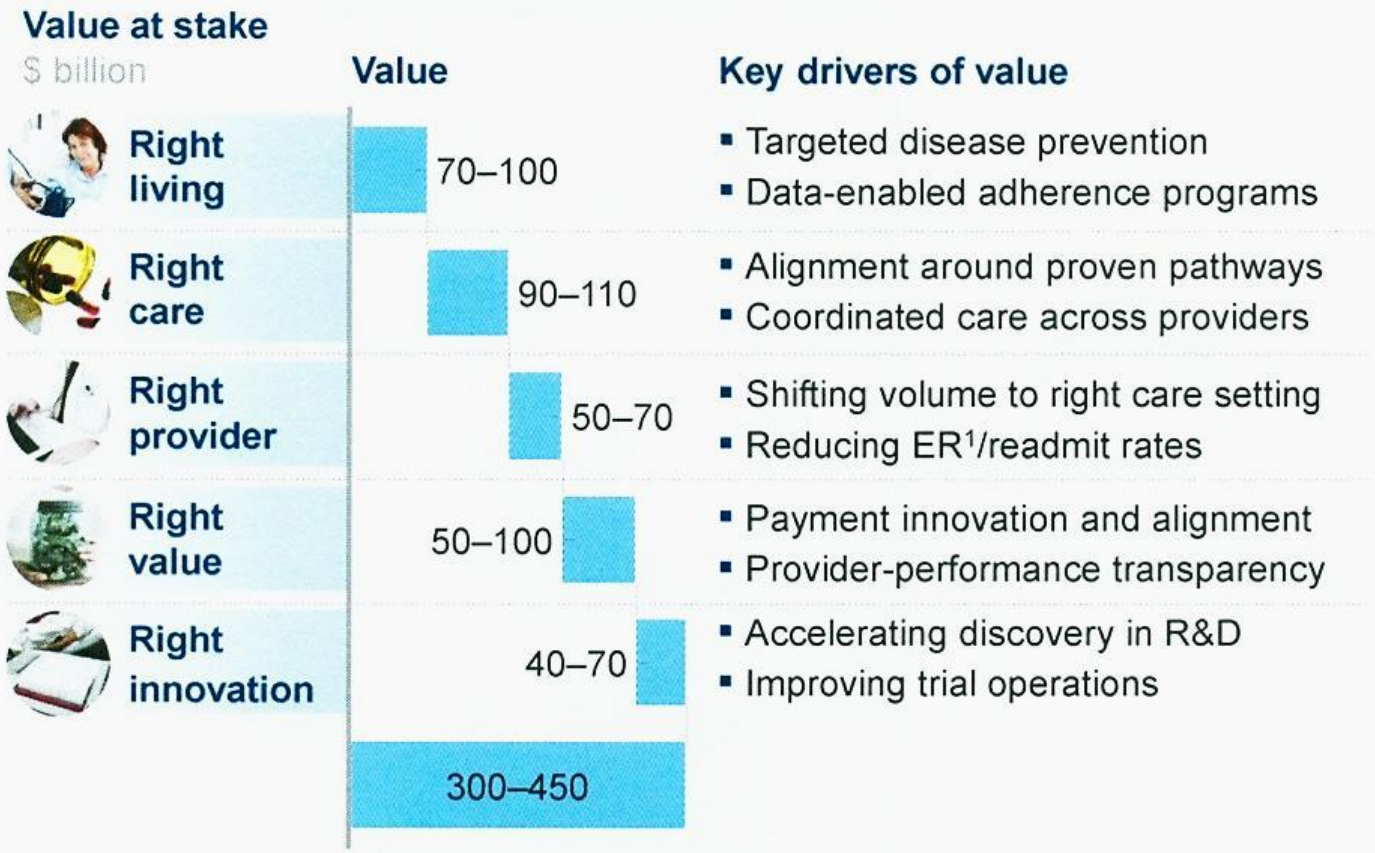
Exhibit 2: Primary data pools are at the heart of the big-data revolution in healthcare.



Source: McKinsey Global Institute analysis

The value of big data in health care = $300-450 billion

Exhibit 4: Applying early successes at scale could reduce US healthcare costs by $300 billion to $450 billion.



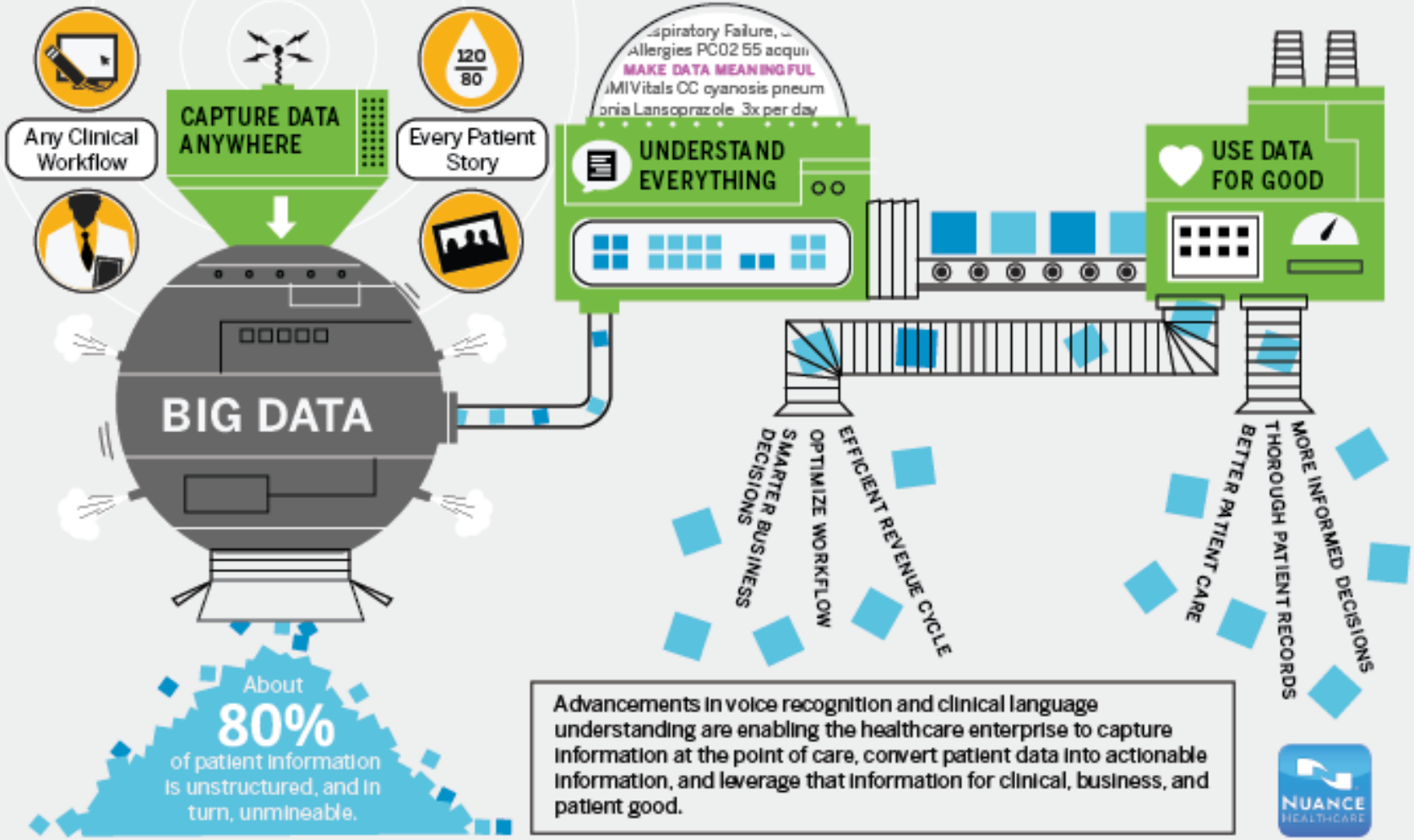
1 Emergency room.

Source: American Diabetes Association; American Hospital Association; HealthPartners Research Foundation; McKinsey Global Institute; National Bureau of Economic Research; US Census Bureau

HEALTHCARE'S DATA CONUNDRUM

FROM DISPARATE DATA TO MEANINGFUL INFORMATION

We can empower healthcare organizations, providers and payers to unify the capture, analysis, and use of data to drive smarter care and business.



www.nuance.com/for-healthcare

6 Keys to the Future of Big Data in Healthcare Marketing

Big data is forecast to make a big difference in the future of healthcare, according to a recent report by the **Ewing Marion Kauffman Foundation**. (April 19, 2012)

1. **Figure Out How to Organize and Use Big Data**
2. **Develop Technology That Taps Into Big Data**
3. **Use Big Data for Better Decision Support**
4. **Turn To Big Data to Ease the Flow of Information**
5. **Use Big Data to Increase the Quality of Care and Decrease Costs**
6. **Develop More Mobile Apps and Social Media That Capitalize on Big Data**

Data is rapidly becoming the foundation for a Smarter Planet

Watson Healthcare Products – 1H 2013

Watson Clinical Insights Advisor

Therapy Designer

Assists with efficient trials and reduces time to market with new cancer therapies

Accelerate Research and Insights

Watson Diagnosis & Treatment Advisor

Oncologists

Assists in identifying individualized treatment options for patients diagnosed with cancer

Improve Diagnosis and Treatments

Watson Care Review and Authorization Advisor

Nurses

Streamlines manual review processes between a physician and health plans

Improve Decisions and Outcomes

Acknowledgement

行政院科技會報

科技部 Ministry of Science and Technology


行政院國家發展基金管理會
National Development Fund, Executive Yuan


DOIT 經濟部技術處
Ministry of Economic Affairs

財團法人生物技術開發中心
Development Center for Biotechnology