



Part 1 Scientific Development From 1% to World Leading



Part 1 Scientific Development Landmark Achievements



Part 1 Scientific Development Technology Platform & National GeneBank



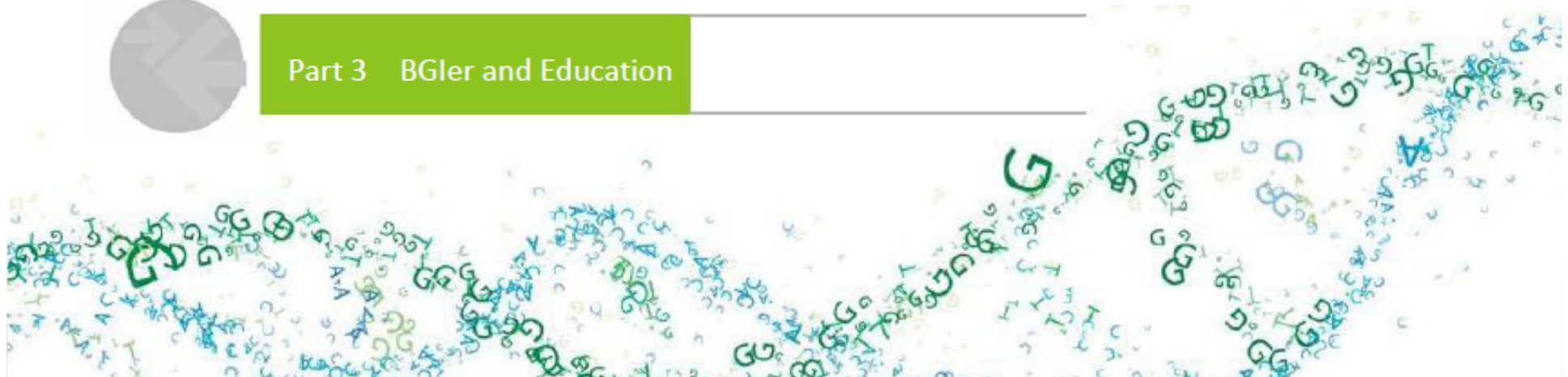
Part 1 Scientific Development Industry Breakthroughs



Part 2 Social Responsibility



Part 3 BGler and Education



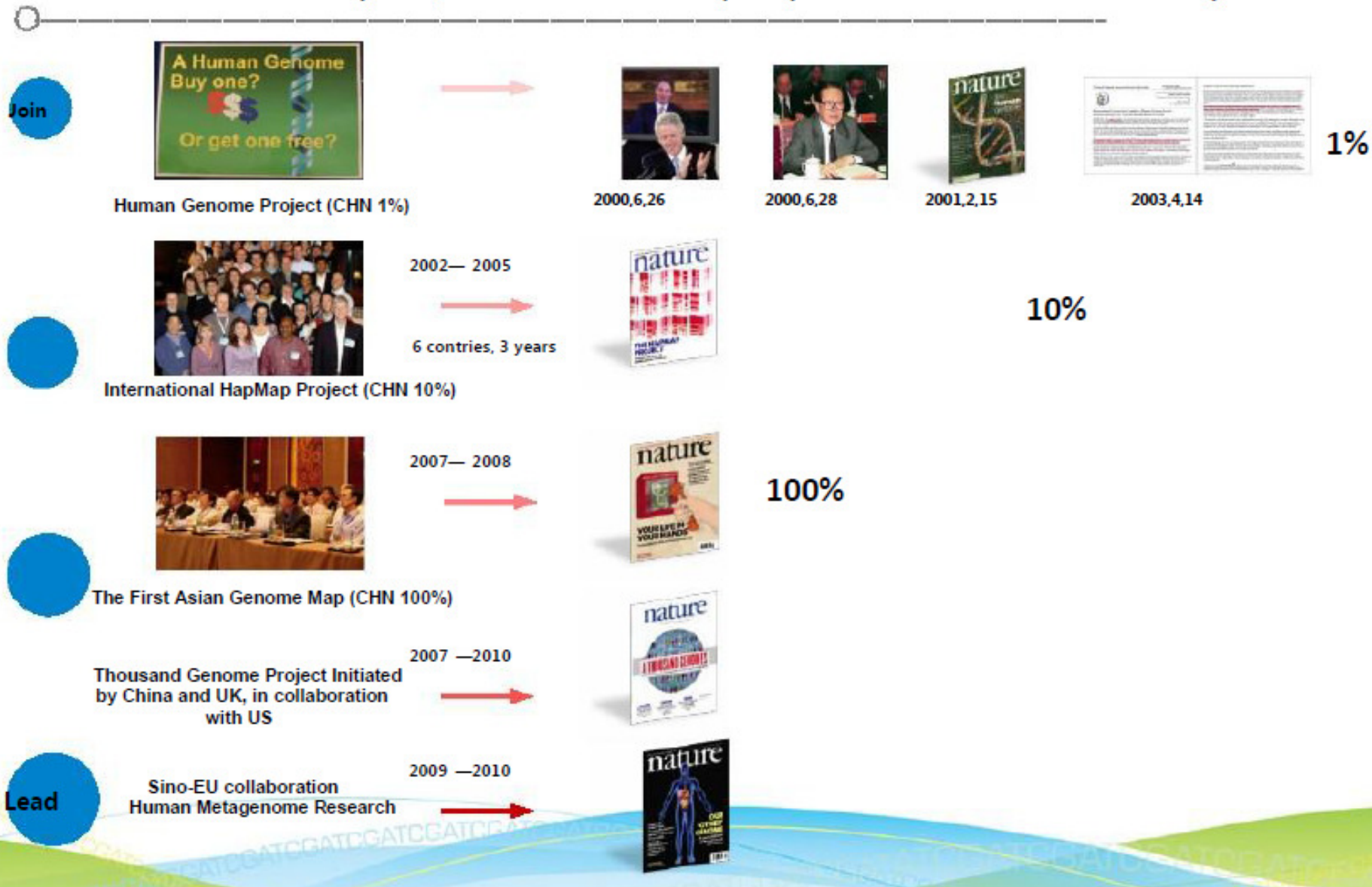


Part 1 Scientific Development

From 1% to World Leading



Born with Great Mission: On 9th Sep, 1999, BGI was founded with its participation in 1% of the Human Genome Project.





Part 1 Scientific Development

Landmark Achievements



Selected Publications

Human



Plant

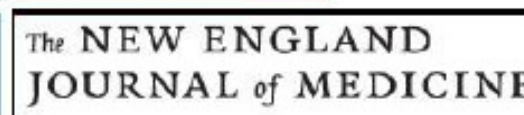
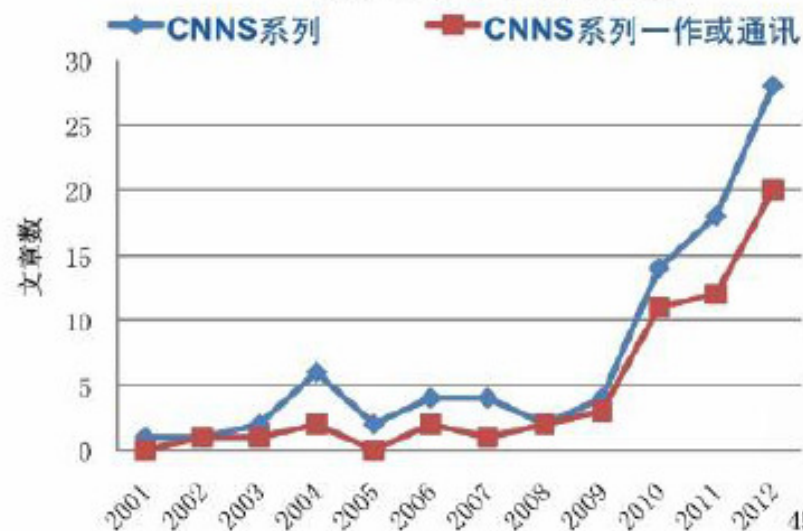


Animal



The amount of data output is equivalent to 47% of the NCBI

CNNS系列文章发表趋势 Publications on CNNS



— CNNS

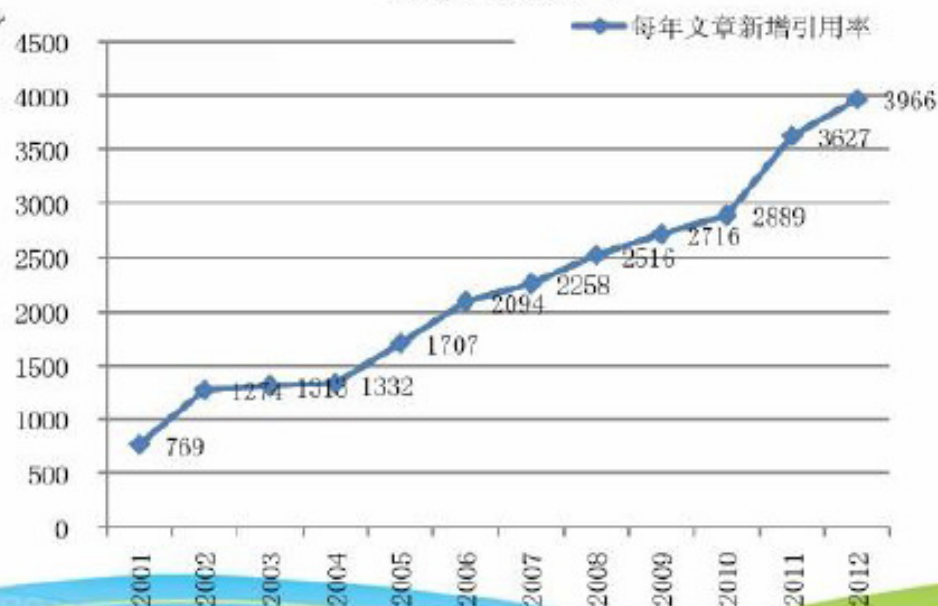
2010, 1 per month
2012, 3 per month

BGI Citation Per Paper 89

China Citation Per Paper 6.51

International Citation Per Paper 9.8

Citations 文章引用率





Part 1 Scientific Development

Technology Platform & National GeneBank



From Trans-omics to Trans-genetics, develop the network of Biotechnology (BT) and Information technology (IT)



核酸测序平台

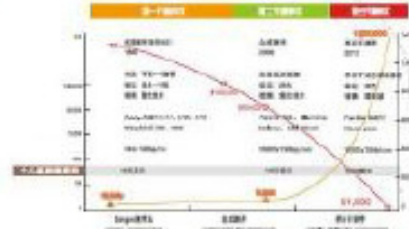
High-throughput Sequencing Platform

目前主要应用研究有: DNA测序、转录组测序、Small RNA测序、数字微阵列测序、ChIP-Seq、DNA甲基化、肿瘤区域检测测序、宏基因组测序等。
Technology Applications: DNA sequencing, Transcriptome sequencing, Small RNA sequencing, Digital Gene Expression, ChIP-Seq, DNA Methylation, Tumor/Region-Cancer, Metagenome Sequencing



高通量、自动化、国产化、规模化

Designed to be Large-scale, Automated, Customized, Scalable



蛋白质组平台

Proteomics Platform

对各种动物、植物、微生物、细胞等进行大规模的蛋白质组学研究; 蛋白组鉴定、蛋白质互作网络构建等。
Large-scale Proteomic Research of animals, plants, microorganisms etc. Combine with genomics and transcriptomics data for systems biology research.



细胞学平台

Cell biology Platform



基因技术平台

Genomic platform



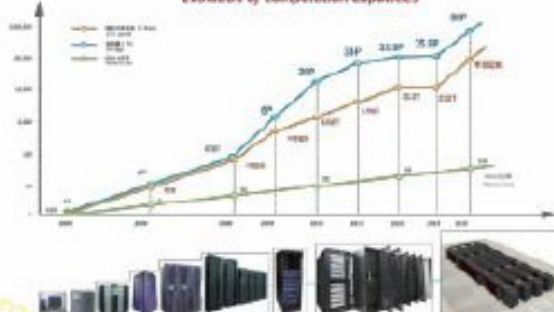
克隆平台

Cloning Platform



HPC

Evolution of Computation Capacities



Software system



National GeneBank (Shenzhen)



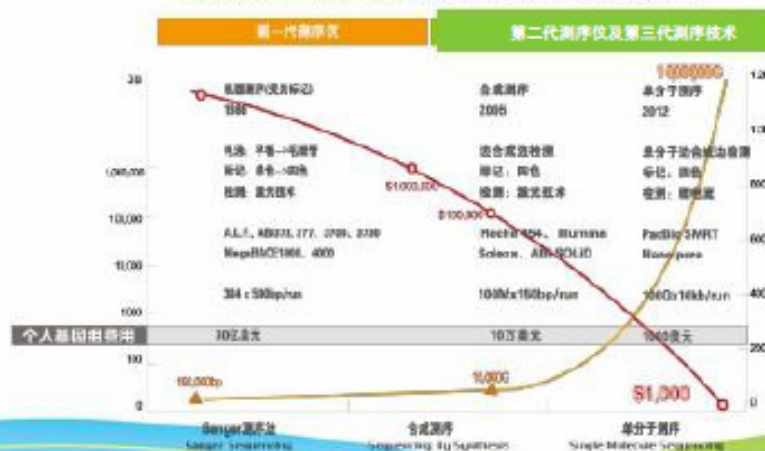
From Trans-omics to Trans-genetics, develop the network of Biotechnology (BT) and Information technology (IT)



Technology Applications: DNA Sequencing, Transcriptome Sequencing, Small RNA Sequencing, Digital Gene Expression, ChIP-Seq, DNA Methylation, Exome/Target Region Capture, Metagenome Sequencing.



规模化、自动化、国产化、原创化
Designed to be Large-scale, Automated, Customized, and Innovative



From Trans-omics to Trans-genetics, develop the network of Biotechnology (BT) and Information technology (IT)



Proteomics Platform

Large-Scale Proteomics Research of animals, plants, micro-organisms etc.
Combine with genome and transcriptome data for trans-omics research.



QTRAP® 5500



LTQ Orbitrap Velos™



maXis



ultrafleXtreme



Cell Biology Platform



Transgenic Platform



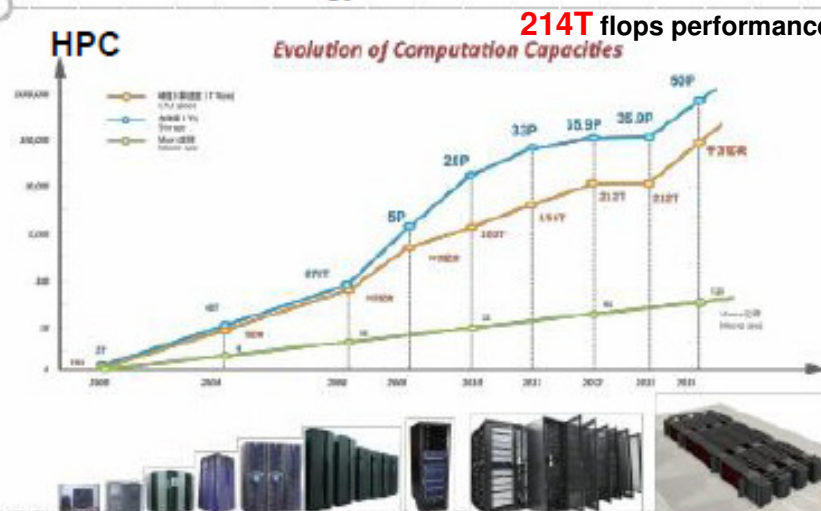
Cloning Platform



From Trans-omics to Trans-genetics, develop the network of Biotechnology (BT) and Information technology (IT)



Information Technology Platform



Software system

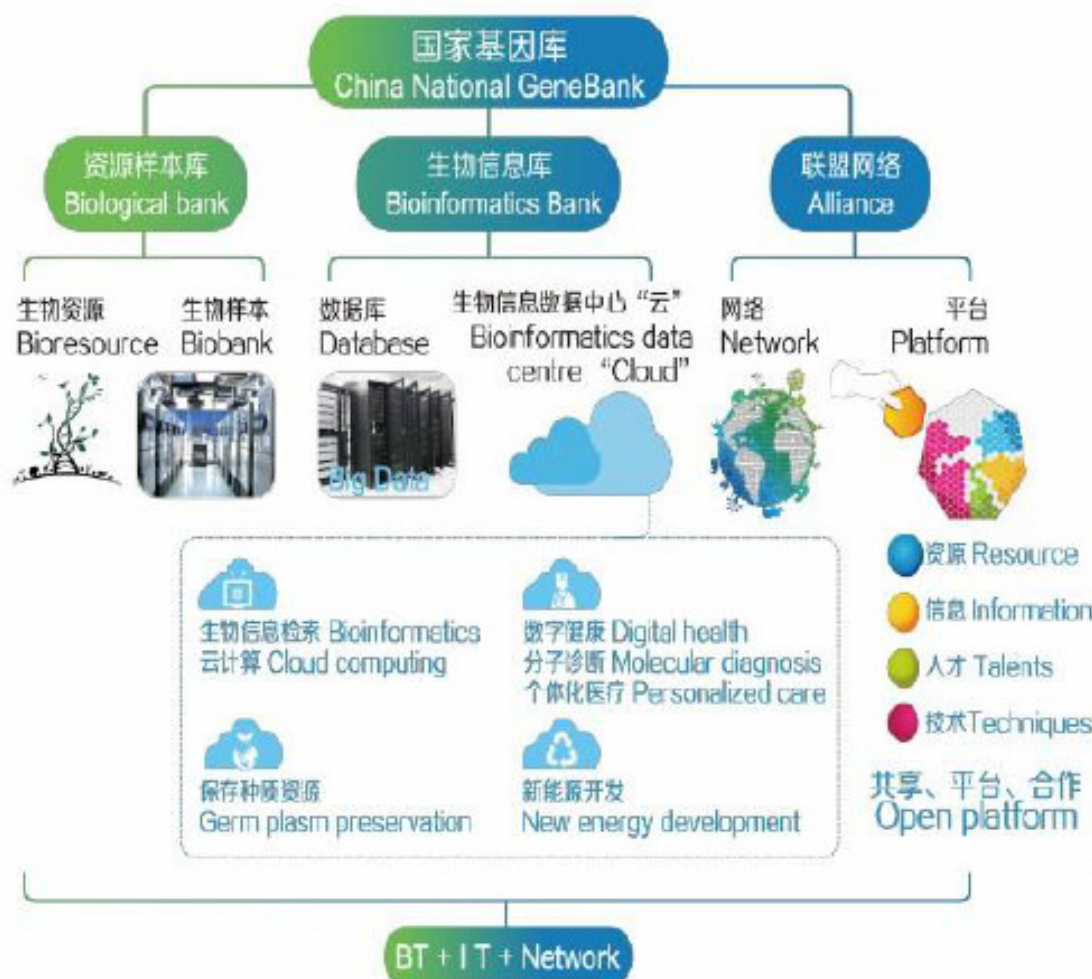
Bio Cloud



Converge big data, filter software, construct the analysis process integrate computing and storage capacity;

Integrate a "one-stop" service system and build a center of data analysis and knowledge sharing in genomics field.

Up to April 2013 Total Gene informatics data : 20PB Species Number at store : 1.33million

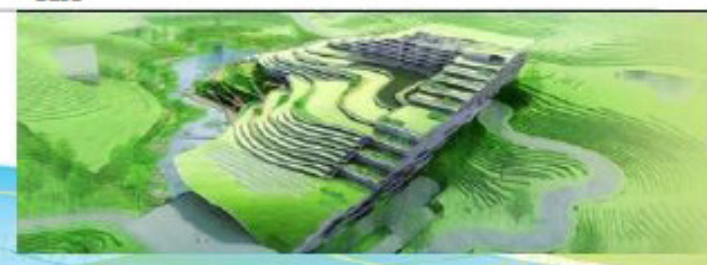


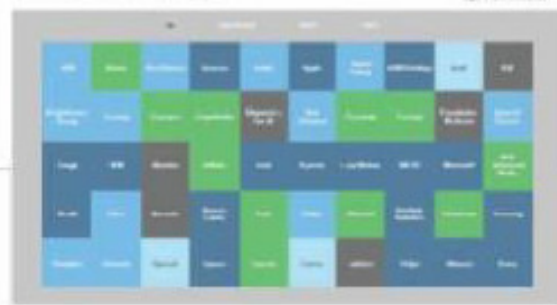
18th Jun, 2011, Official set up of the National GeneBank.

Distribution of Regional GeneBank



National Gene Bank Base





**BGI Named to MIT Technology Review's
2013 50 Disruptive Companies List
Recognizing World's Most Innovative
Companies**



THE WORLD'S TOP 10 MOST INNOVATIVE COMPANIES IN CHINA

Fast Company

**BGI Ranked 4th of Fast Company's
2013 The World's Top 10 Most
Innovative Companies in China**





Part 1 Scientific Development

Industry Breakthroughs



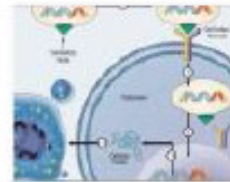
Understanding the Structure of Genomes



Understanding the Biology of Genomes



Understanding the Biology of Disease



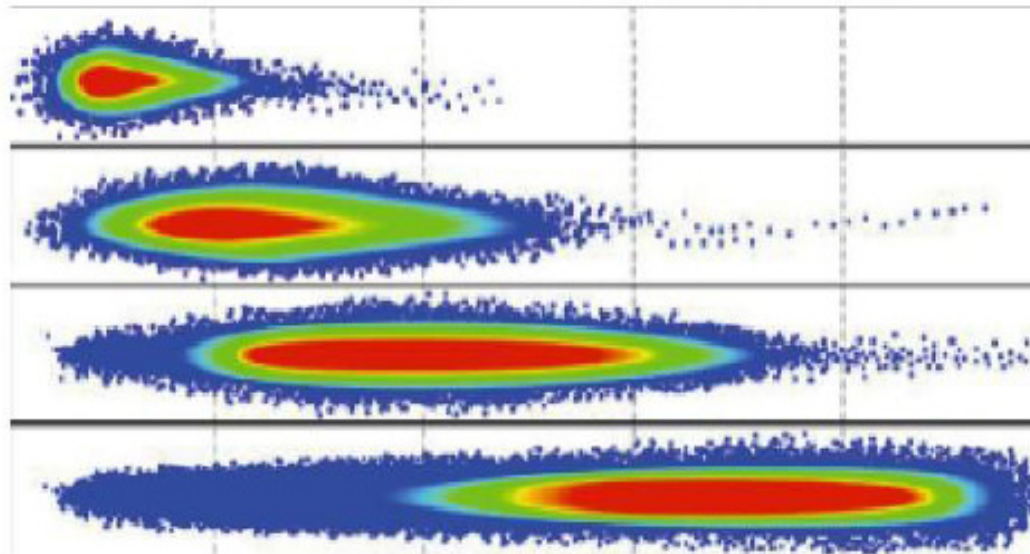
Advancing the Science
of Medicine



Improving the Effectiveness of Healthcare



1990-2003
Human Genome Project



(Source: Eric Green, NHGRI)



Reproductive Health Center

Non-Invasive Prenatal Genetic Testing of Fetal Chromosomal Aneuploidy(NIFTY)

Deafness gene detection

Genetic metabolic disease detection

Thalassemia gene detection

The abortion organizations chromosome anomaly detection

Clinical and Medical Health Center

Molecular Targeted Cancer Therapy – KRAS & EGFR

Pharmacogenomics

Metabolism and Cardiovascular Center

Cancer Center

Geriatrics Center

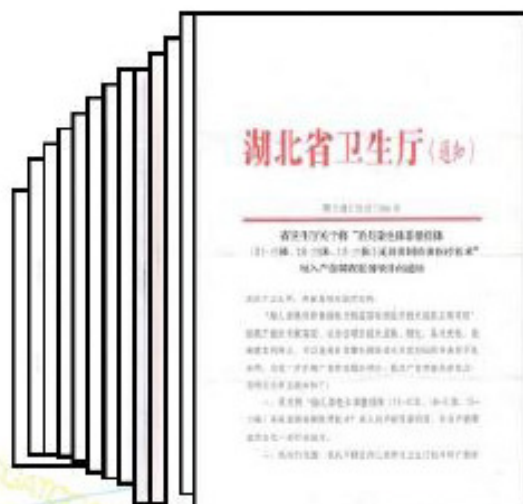
BGI-CHOP



Clinical (NGS) services at CHOP through the hospital's Department of Pathology and Laboratory Medicine in a CAP/CLIA-compliant environment.

Disease detection type list

Government License/Server License



Published Papers and Patents

| 序号 | 发明名称 | 申请号 | 受理日 | 受理局 |
|----|---------------|---------------|-----------|---------|
| 1 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |
| 2 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |
| 3 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |
| 4 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |
| 5 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |
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| 25 | 一种高通量测序文库构建方法 | 20141012497.2 | 2014.07.2 | 国家知识产权局 |

| 序号 | 疾病名称 |
|----|--------------------------------------|
| 1 | Angelman 综合征 (1 型、2 型) |
| 2 | Prader-Willi 综合征 (1 型、2 型) |
| 3 | 16p11.3 微重复综合征 |
| 4 | 16p11.2-p12.1 微缺失综合征 |
| 5 | 16p11.3 微缺失、微重复综合征 |
| 6 | 缺失型 21 三体综合征/智力低下综合征 |
| 7 | Rubinstein-Taybi 综合征 |
| 8 | 17q21.31 微缺失综合征 |
| 9 | 22q11.2 微缺失综合征 1A 型 |
| 10 | 遗传性先天性肾上腺皮质增生症 |
| 11 | Miller-Dieker 综合征 |
| 12 | 神经纤维瘤病 1 型/神经纤维瘤病 |
| 13 | Fragile X 综合征 |
| 14 | 特发性震颤/舞蹈症 |
| 15 | Smith-Magenis 综合征 |
| 16 | 早发型阿尔茨海默病和神经纤维瘤 |
| 17 | 22q11.2 微缺失综合征 |
| 18 | 22q11.2 微重复综合征 |
| 19 | 22q11.2 微缺失/微重复综合征 |
| 20 | 22q13.2 微缺失综合征 (Phelan-McDermid 综合征) |
| 21 | 脆性 X 综合征 |
| 22 | 31 Leu-Val 胱氨酸尿症/胱氨酸尿症 |
| 23 | X-连锁隐性遗传的蛋白质组蛋白尿症 |
| 24 | X-连锁隐性遗传 |
| 25 | Xq28 (MECP2) 重复综合征 |
| 26 | Y 染色体微缺失综合征 |

Medicine

Reproductive Health Center



Clinical and Medical Health Center



Molecular Targeted Cancer Therapy – KRAS & EGFR

Pharmacogenomics

Molecular Genetic testing

Metabolism and Cardiovascular Center

Cancer Center

Geriatrics Center

Agriculture

Plant Breeding



Animal Platform



Marine Life Platform



Environment

Low carbon economy





Part 2 Social Responsibility



Epidemic Surveillance after Wenchuan Earthquake



From May 18 to June 2, 2008, a post-earthquake disease control team was sent by BGI to participate in the reconstruction task of "5.12 Wenchuan Earthquake" in Wenchuan, Sichuan Province, to monitor the possible outbreak of public health emergency and infectious diseases.



Fighting against SARS



Diagnostic kits to the National Anti-SARS Headquarters.

Combat against Germany Deadly E.coli Epidemic



On May 27, 2011, DNA sample of the E.coli arrived BGI; June 2, BGI completed the genome sequencing and released the data; June 7, the diagnostic kit was developed and freely available worldwide; July 28, the research was published online in The New England Journal of Medicine.



On November 15, 2010, BGI signed the cooperative agreement of **"Thalassemia Support Foundation"** with Shenzhen Red-Cross
On January 8, 2011, BGI provided HLA high resolution typing test to 30 children with Thalassemia from Huizhou.

The Chinese Marrow Donor Program (CMDP)



In 2010, BGI contributed 43 million RMB to the China Marrow Donor Program (CMDP) to complete the high resolution HLA typing of 90,000 donors. On January 25, 2011, Chinese Red Cross awarded BGI the highest honor – the Red Cross Medal.

Innovative HPV-based Cervical Cancer Screening Program for Millions of Women



On March 7, 2013, BGI announced the launch of an innovative cervical cancer Screening program for millions of women, which would be in full in Guangdong, Tianjin, Yunnan, Hunan, Hubei, Jiangsu, Liaoning, Shandong, Henan, Xizang and other regions.



Part 3 BGler and Education





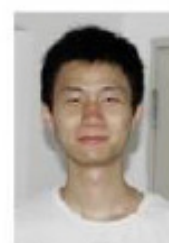
王俊
Wang Jun
37
23 joined in BGI
CEO



李英睿
Li Yingrui
27岁
19 joined
32 Nature&Science



徐讯
Xu Xun
27岁
23 Joined
23 Nature &Science



郑汉城
Zheng Hancheng
26岁
22 joined
12 Nature &Science



金鑫
Jin Xin
24
21 joined in BGI
4 Nature& Science



赵柏闻
Zhao Bowen
20
17 Joined in BGI
1 Nature& Science



James D. Watson



John E. Sulston



Harold Varmus



Richard J. Roberts



Francis S. Collins



Eric Lander



George Church



Lars Bolund



刘应力 Liu Yingli



王石 Wang Shi

BGI College

Aimed at students at home and abroad, BGI College trains talents in trans-omics research and industry by innovative education model; meanwhile, offers high-end trans-omics-related training courses for experts and scholars from other fields.

Text Books



Colleges



Inauguration Ceremony of the CUHK-BGI Innovation Institute of Trans-omics



The Joint Ph.D. Program between University of Copenhagen and BGI-Shenzhen



Established cooperation partnership between BGI-Shenzhen and UC Davis

Educational Cooperation Resource





Deciphering the Profound Life Science

Building a Magnificent Industry

Experiencing a Brilliant Life

1998



人类基因组中心
1998-1999 HGC

1999



北京华大基因研究中心
Beijing Genomics Institute

2001



杭州华大基因研发中心
Hangzhou Genomics Institute
James Watson Institute of Genome Sciences

2007



深圳华大基因研究院
2007 - BGI
Shenzhen

2009



香港华大基因
2009 - BGI
Hongkong



深圳华大基因
2009 - BGI
Shenzhen

2010



武汉华大基因
2010 - BGI
Wuhan



欧洲华大基因
2010 - BGI
Europe



美洲华大基因
2010 - BGI
America

2011



天津华大基因
2011 - BGI
Tianjin



上海华大基因
2011 - BGI
Shanghai



日本华大基因
2011 - BGI
Japan

2012



2012-华大基因—费城儿
童基因组联盟基因组中心
Genomics Center



2012-华大基因—加
州大学戴维斯分校
基因组研究中心 Davis
Campus Genomics Center



thanks

