



中国科学技术大学
University of Science and Technology of China

Design Thinking and Innovation Practice in USTC



Outline

- **Brief Introduction of USTC**
- **Design Innovation Course in USTC**
- **Examples of Student Projects**
- **Great Learning Experience**



USTC was established by the Chinese Academy of Sciences (CAS) in 1958.

Beijing

Hefei

Moved to Hefei, Anhui, in 1970.



- 1,509 academic staff, including 504 full professors.
- It has 7,200 undergraduates, 9,000 graduate students (2,600 PhD candidates).

Schools

Gifted Youth	1
Physical Sciences	2
Life Sciences	3
Information Science & Tech.	4
Earth & Space Sciences	5
Public Affairs	6
Nuclear Science & Tech.	7
Mathematical Sciences	8
Chemistry & Material Sci.	9
Engineering Science	10
Computer Science & Tech.	11
Environment Sci. and Electro	12
Optical Technology	12
Management	13
Humanities & Social Sci.	14
Software Engineering	15



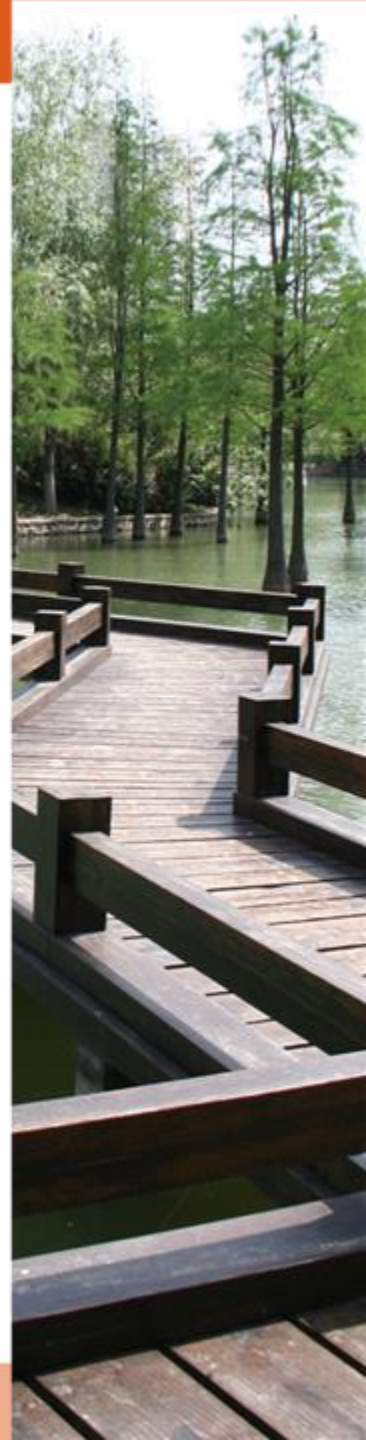


EDUCATION EXCELLENCE

1. The Student-to-Faculty Ratio is one of the best among the universities in China.

2. Admission to USTC is extremely selective, only top 0.3-0.5% of high school graduates are admitted.

3. Over 70% undergraduate students are involved in the “Research Program for Undergraduate Students” in research institutes of CAS and National Labs on campus.



Traditional University Education



图片来自《科大映像》（2013中文版）：中国科学技术大学文化宣传片

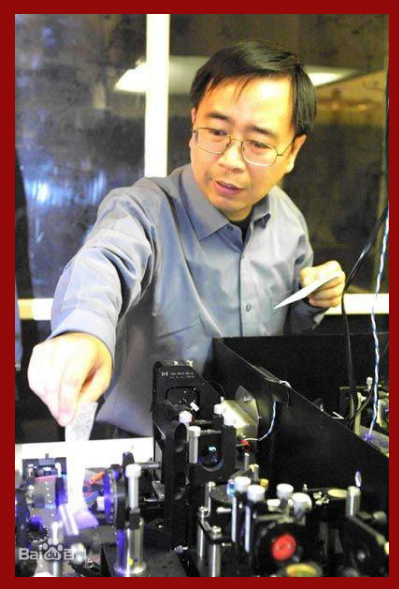


USTC is regarded as “the Cradle of Scientists” in China.

Over 70% USTC alumni hold master’s or doctoral degrees. And 0.1% of them are elected Academicians of the CAS or the Chinese Academy of Engineering. These ratios are among the highest in Chinese universities.



DENG Zhonghan was elected Academician of the Chinese Academy of Engineering (CAE) in 2009 when he was 41 years old, the youngest Academician of CAE.



PAN Jianwei was elected Academician of Chinese Academy of Sciences (CAS) in 2011 when he was 41 years old, the youngest Academician of CAS.

ZHUANG Xiaowei was elected “The Youngest Chinese American Academician of the United States National Academy of Sciences (NAS)” in 2012 when she was 40 years old.





**Proposed in 1978 by Professor T.D. Lee
(Nobel Prize Winner)**

- **Admit gifted youth under 15 years old**
- **50 students per year nationwide**



The School of Gifted Youth



Dr. Yaqin Zhang attended USTC in 1978 at the age of 12. Youngest IEEE fellow. Former Cooperate Vice President of Microsoft, currently President of Baidu

By 2010, the School of Gifted Youth has nurtured 1,150 students, over

91% obtained advanced degrees.

Dr. FAN Shanhui attended SCGY in 1988 when he was 16 years old. IEEE Fellow, Stanford Professor



Dr. LUO Liqun attended SCGY in 1981 when he was 15 years old. NAS Member, Stanford Professor

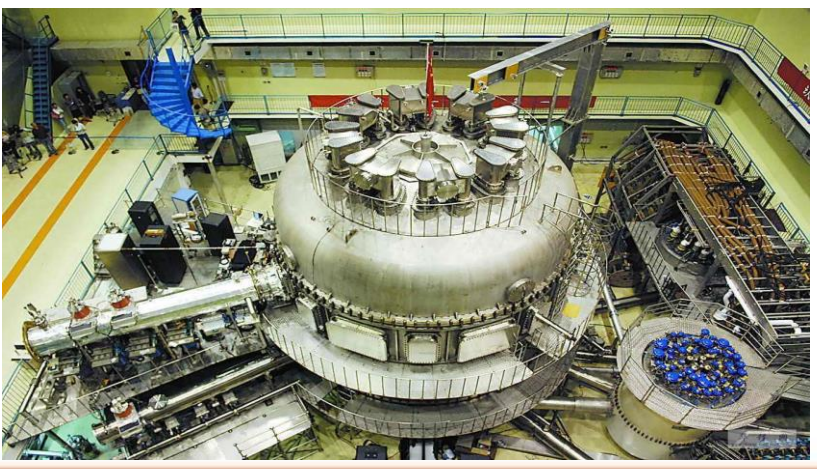
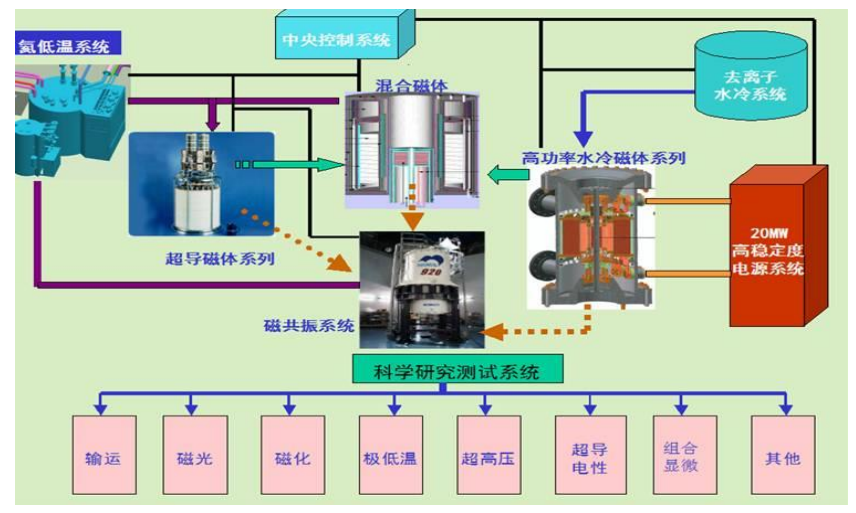


RESEARCH EXCELLENCE

USTC is one of the most important innovation center in China. It is the only university in China operating two national labs, and jointly operates two national scientific large facilities.



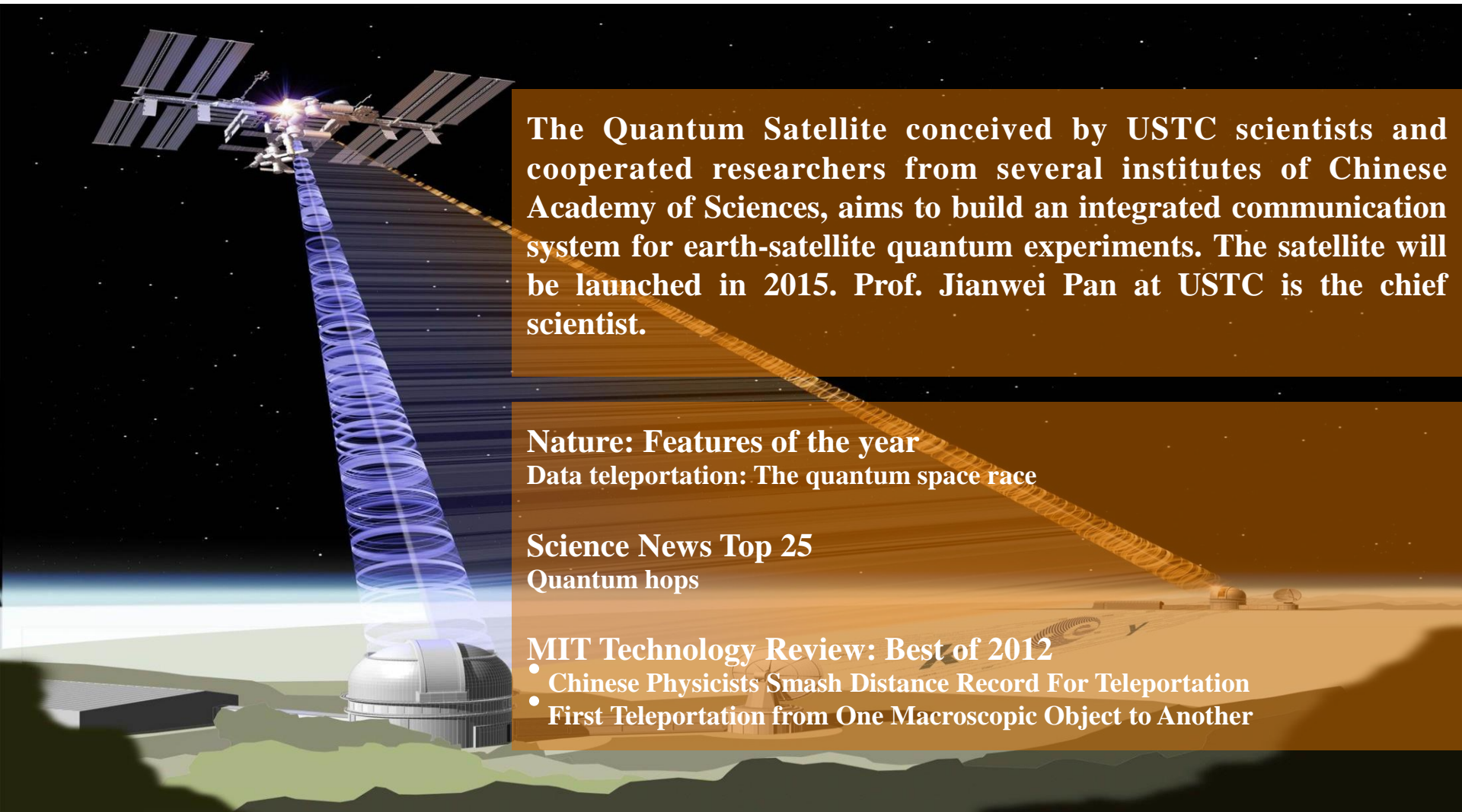
- National Synchrotron Radiation Laboratory
- Hefei National Laboratory for Physical Sciences



- Experimental Advanced Superconducting Tokamak
- Experimental Facility of Stable High Magnetic Facilities



RESEARCH HIGHLIGHT——QUANTUM SATELLITE



The Quantum Satellite conceived by USTC scientists and cooperated researchers from several institutes of Chinese Academy of Sciences, aims to build an integrated communication system for earth-satellite quantum experiments. The satellite will be launched in 2015. Prof. Jianwei Pan at USTC is the chief scientist.

Nature: Features of the year
Data teleportation: The quantum space race

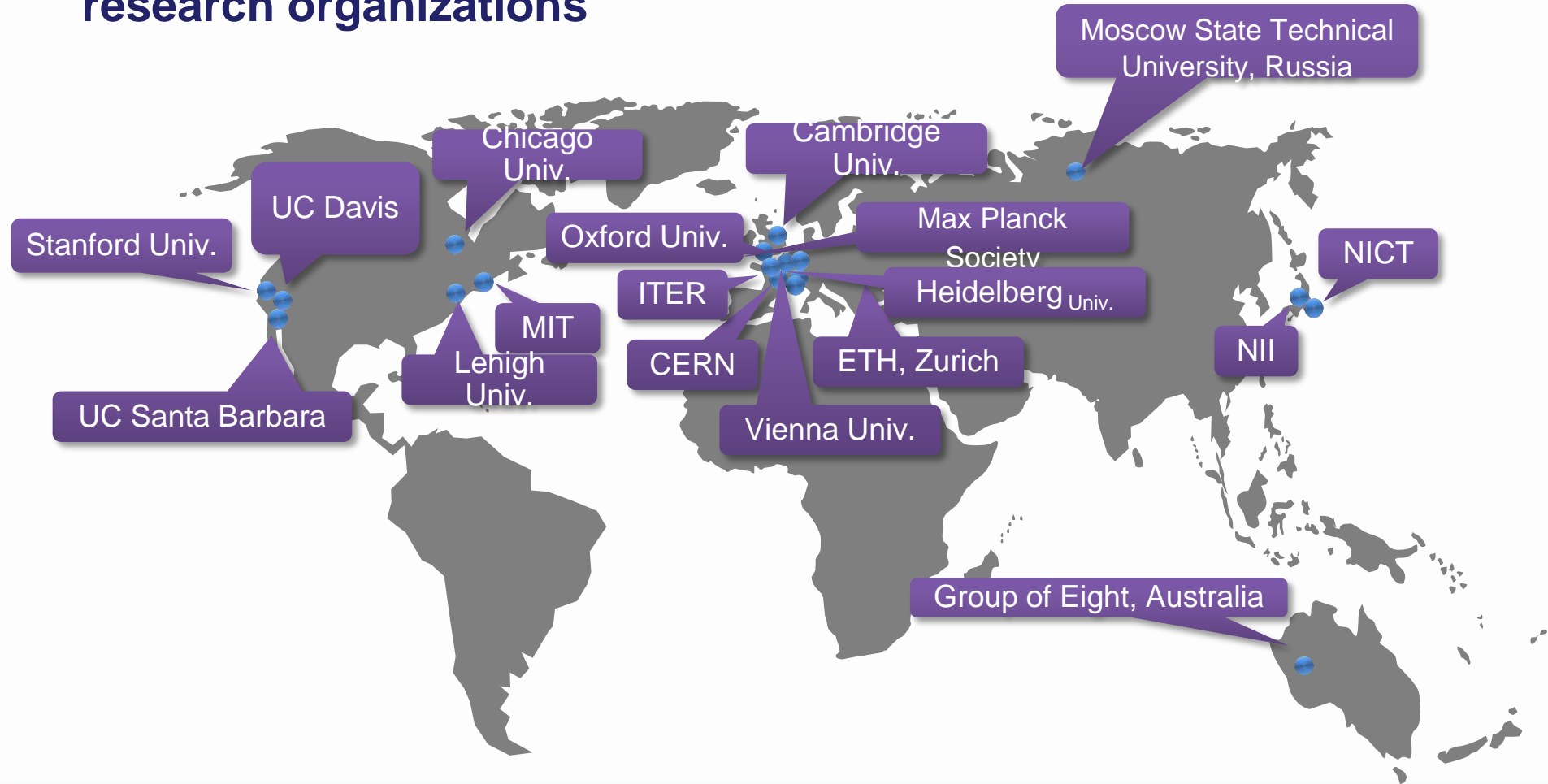
Science News Top 25
Quantum hops

- MIT Technology Review: Best of 2012**
- Chinese Physicists Smash Distance Record For Teleportation
 - First Teleportation from One Macroscopic Object to Another



INTERNATIONAL ENGAGEMENT

Collaborate with about 200 top international universities or research organizations

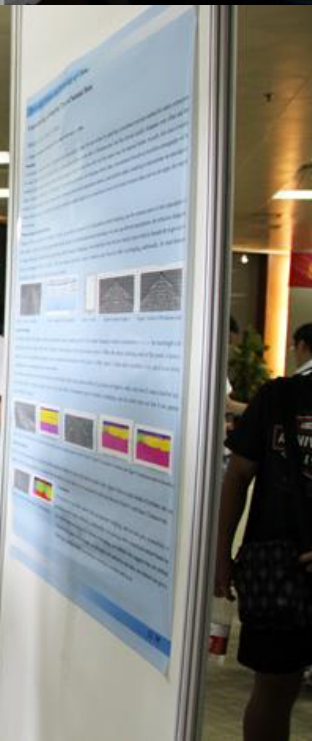




International Collaboration on Research

STANFORD-USTC-MIT (SUM) 2013 FACULTY FORUM
September 16-18, 2013, Hefei, China







INSTITUTE OF ADVANCED TECHNOLOGY

USTC and Hefei City jointly build the Institute of Advanced Technology (IAT), aiming to better promote the combination of education, research and production and focusing on fostering high-level researchers and engineers, technological innovation and research transfer in IT industry, micro-electronics, health care, new energy, new materials, quantum information, etc.



Land Area: 1.33 km² (330 Acres)

Total Investment: 3 billion RMB

First Phase Building: 530,000 m²

Construction Starts in July, 2012

Available to Use in September, 2013

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International Collaboration on Design Innovation - Stanford Faculty Visit USTC in 2011





2011

2012

2013

2014

2015

SIEMENS



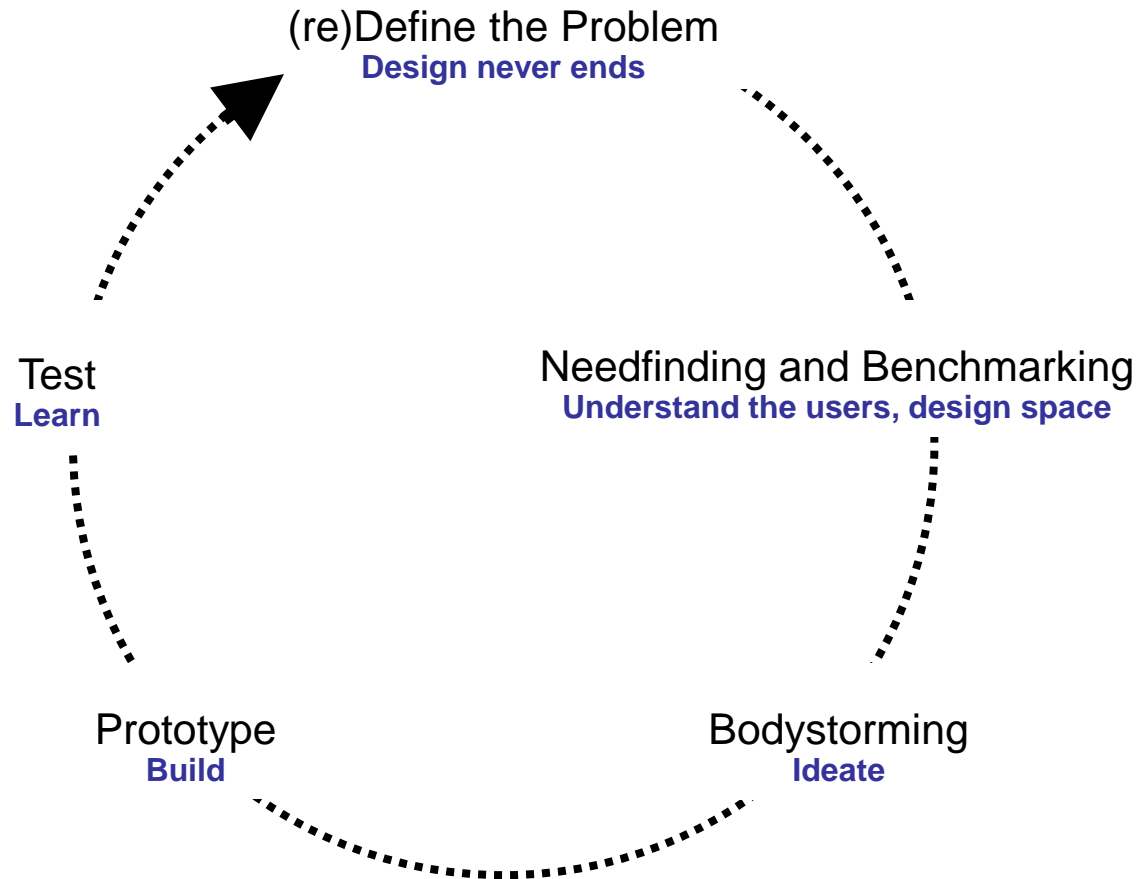
ABB



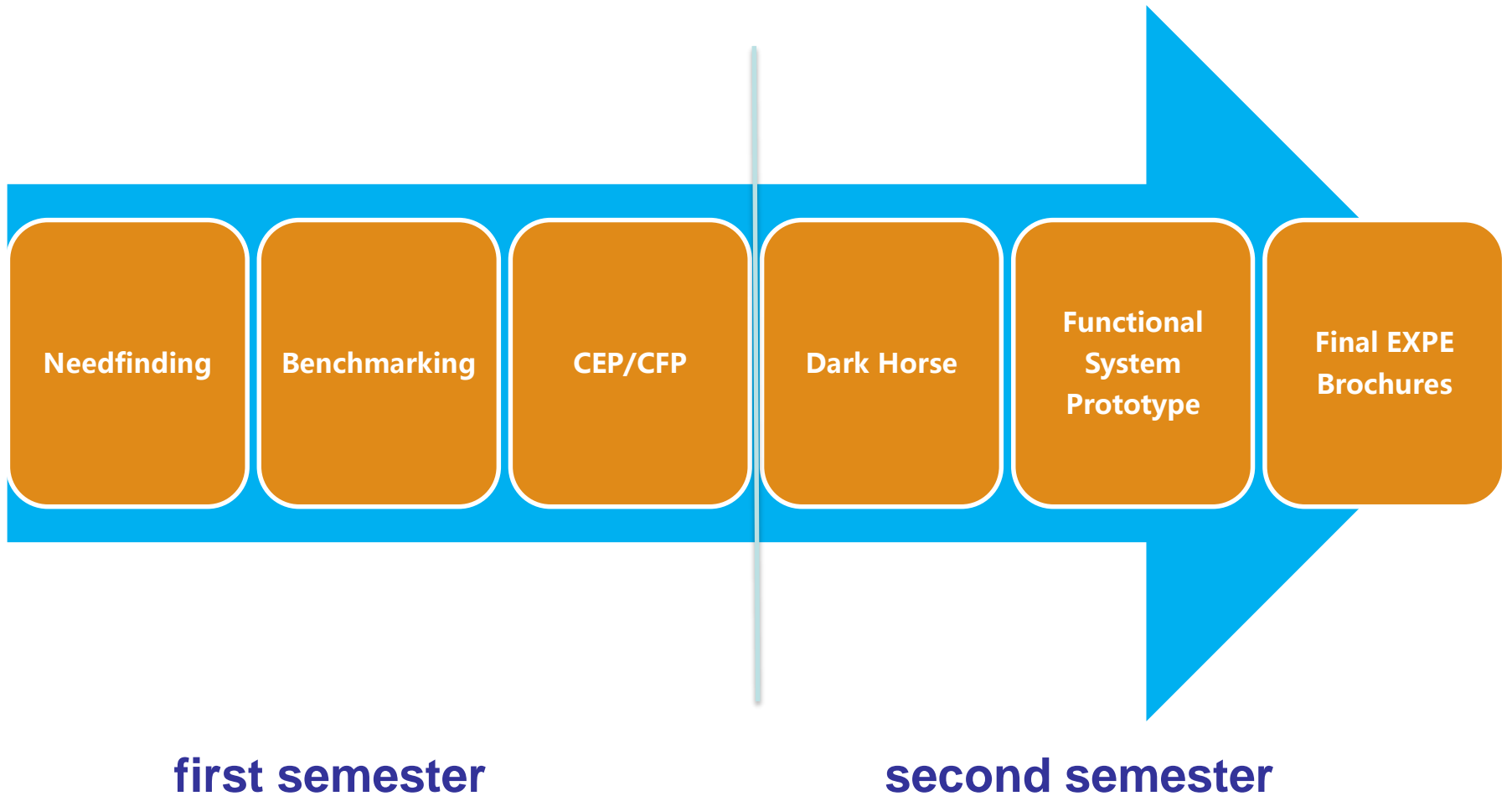
Panasonic
ideas for life



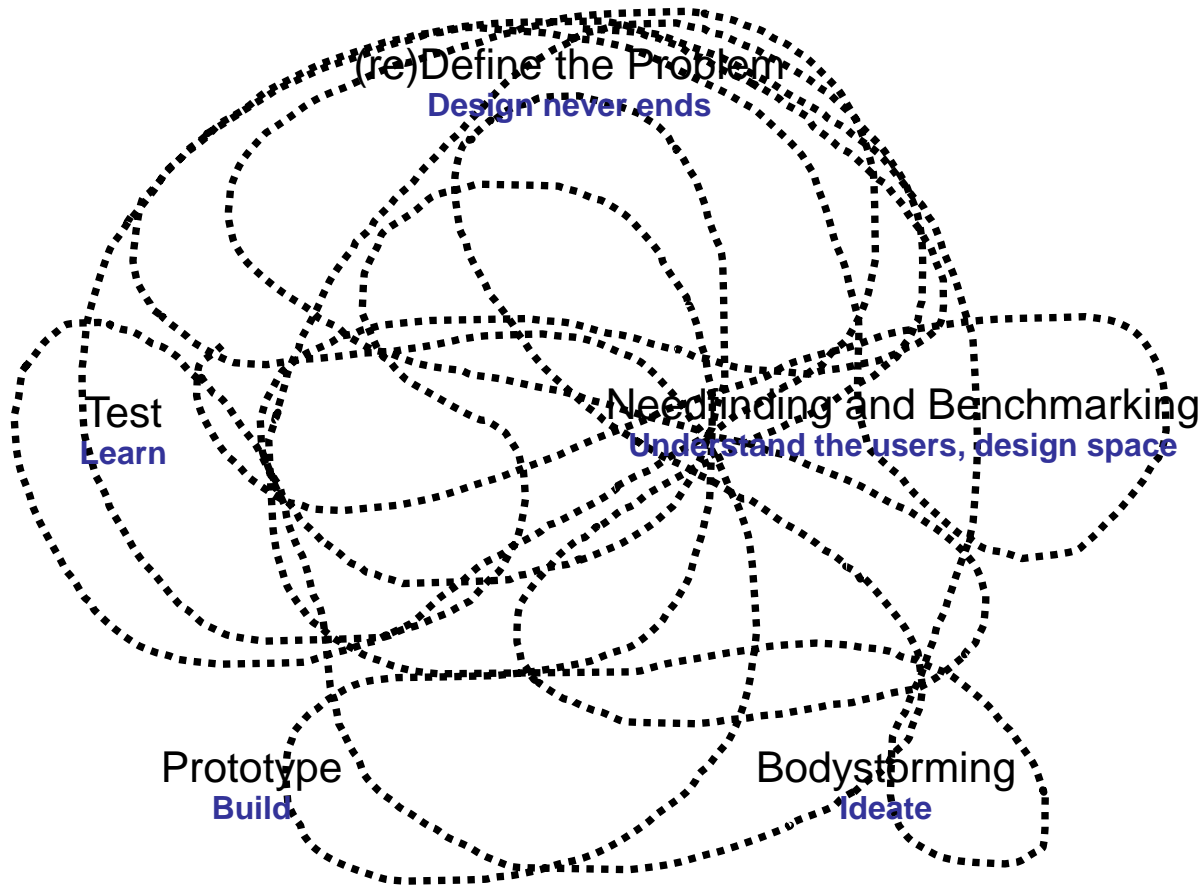
design process



execution steps

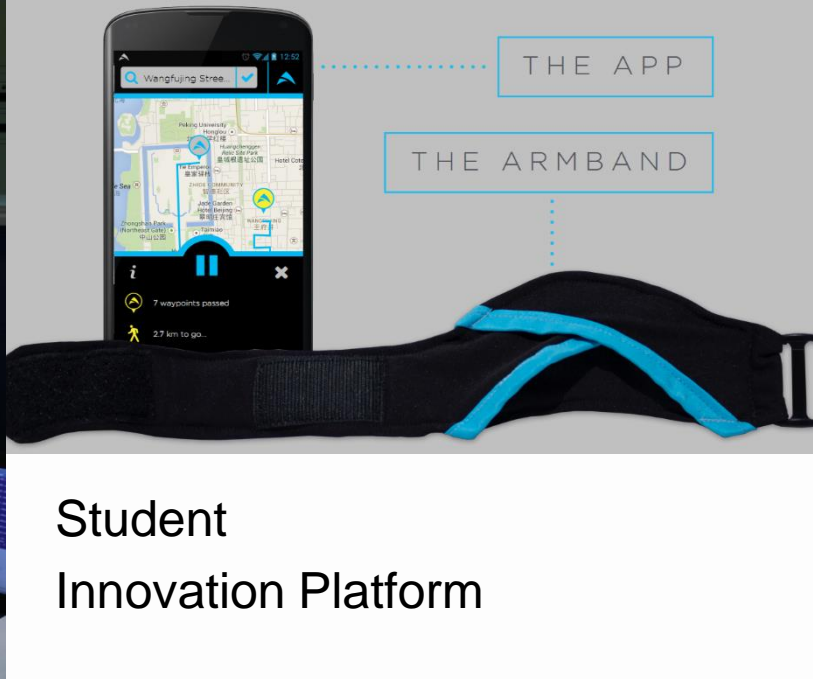
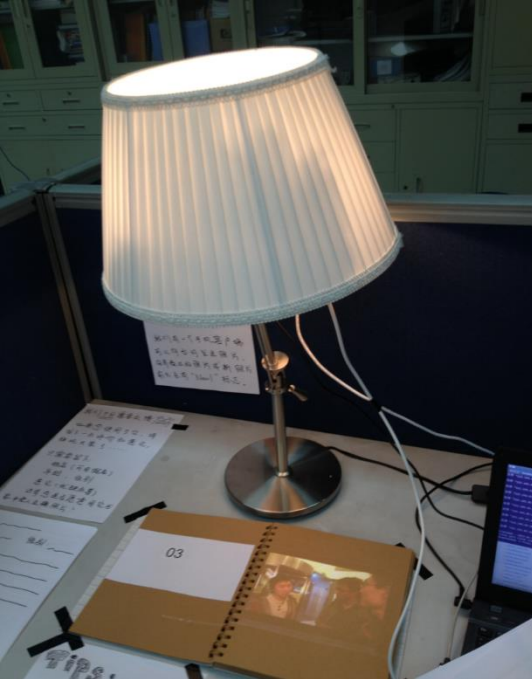


in reality

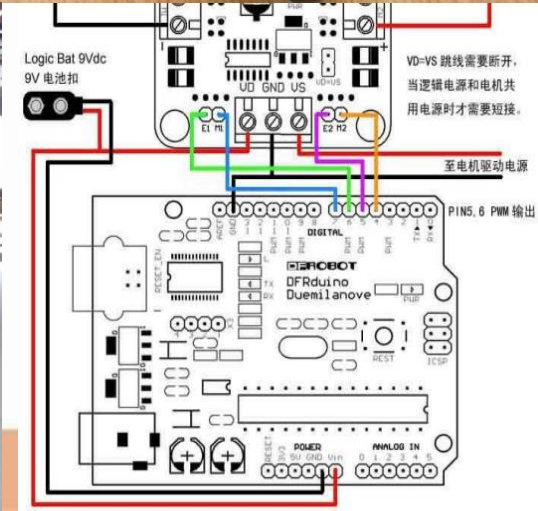
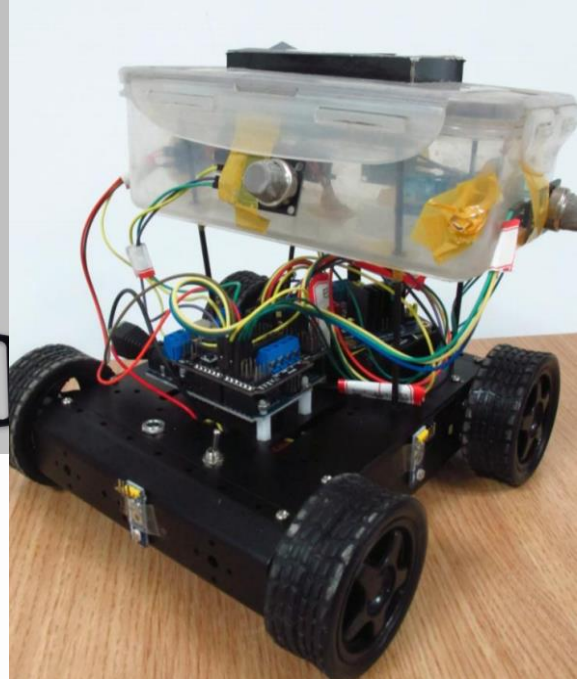




International Collaboration on Design Innovation



Student Innovation Platform



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Case Study

2012~2013: Bridge the gap between physical world and digital world



Through needfinding, benchmarking, and prototyping, the student team from USTC and Stanford came up with a design of a family album

Case Study



case study

re-imagine wearable electronics

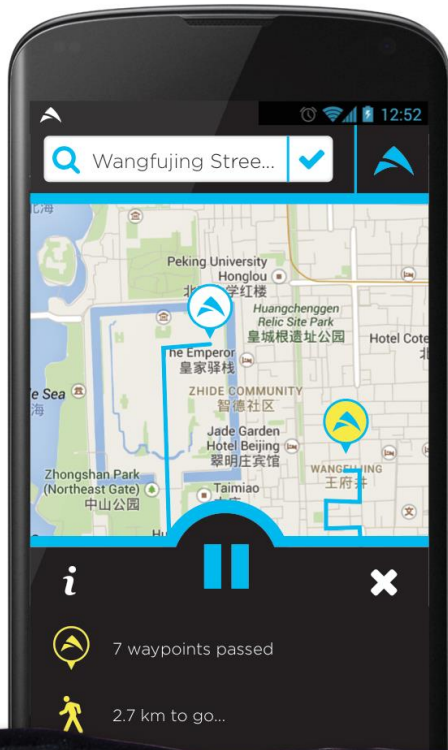
ME310 2013-2014

THE USER



THE TRAVELER IN ALL OF US

WHAT IS ROMU?



THE APP

THE ARMBAND



THE FEATURES OF ROMU

Comfortable and expressive



THE FEATURES OF ROMU



Comfortable and expressive

Haptic notifications

**how about a haptic dialog
information sensed, not read**





Boehringer
Ingelheim

“How to transform the
go-to-market model for
prescription medicine products?”



University of St.Gallen



UNIVERSITÄT
LIECHTENSTEIN



中国科学技术大学
University of Science and Technology of China



中国美术学院
China Academy Of Art



Yannick Gächter
Entrepreneurship



Rebecca Meile
Business



Christoph Spicher
Management



Shilin Wu
**Electrical
Engineering**



Shengzhe Jiao
**Electrical
Engineering**



Yuxi Zhang
Physics



Chujie Liu
Geophysics



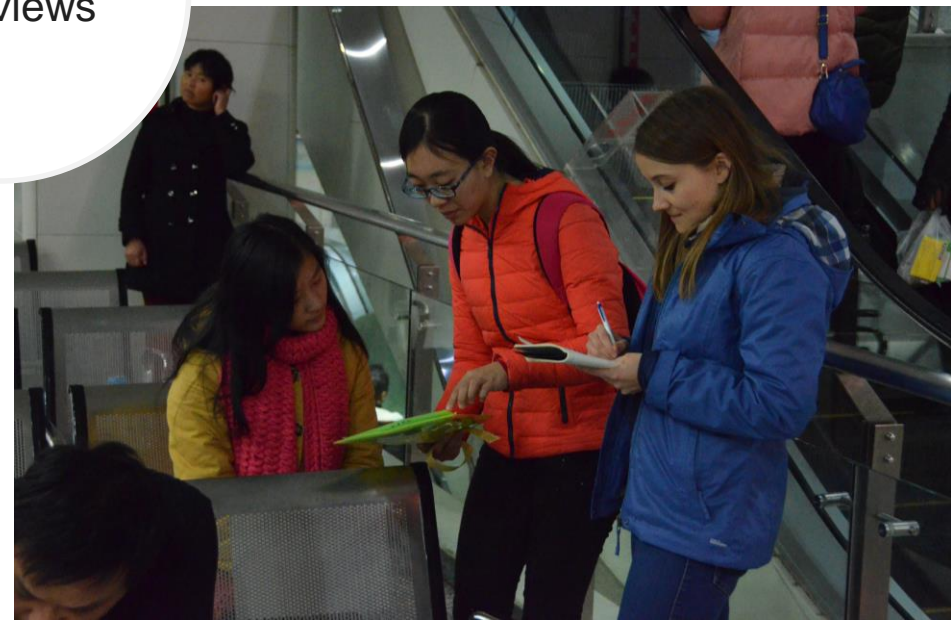
Chengliang Dai
**Interactive
Design**



Peng Cai
**Interactive
Design**



Needfinding
Interviews



Sale Reps——Hard to gain trust from doctors

Pharma——High cost & low efficiency

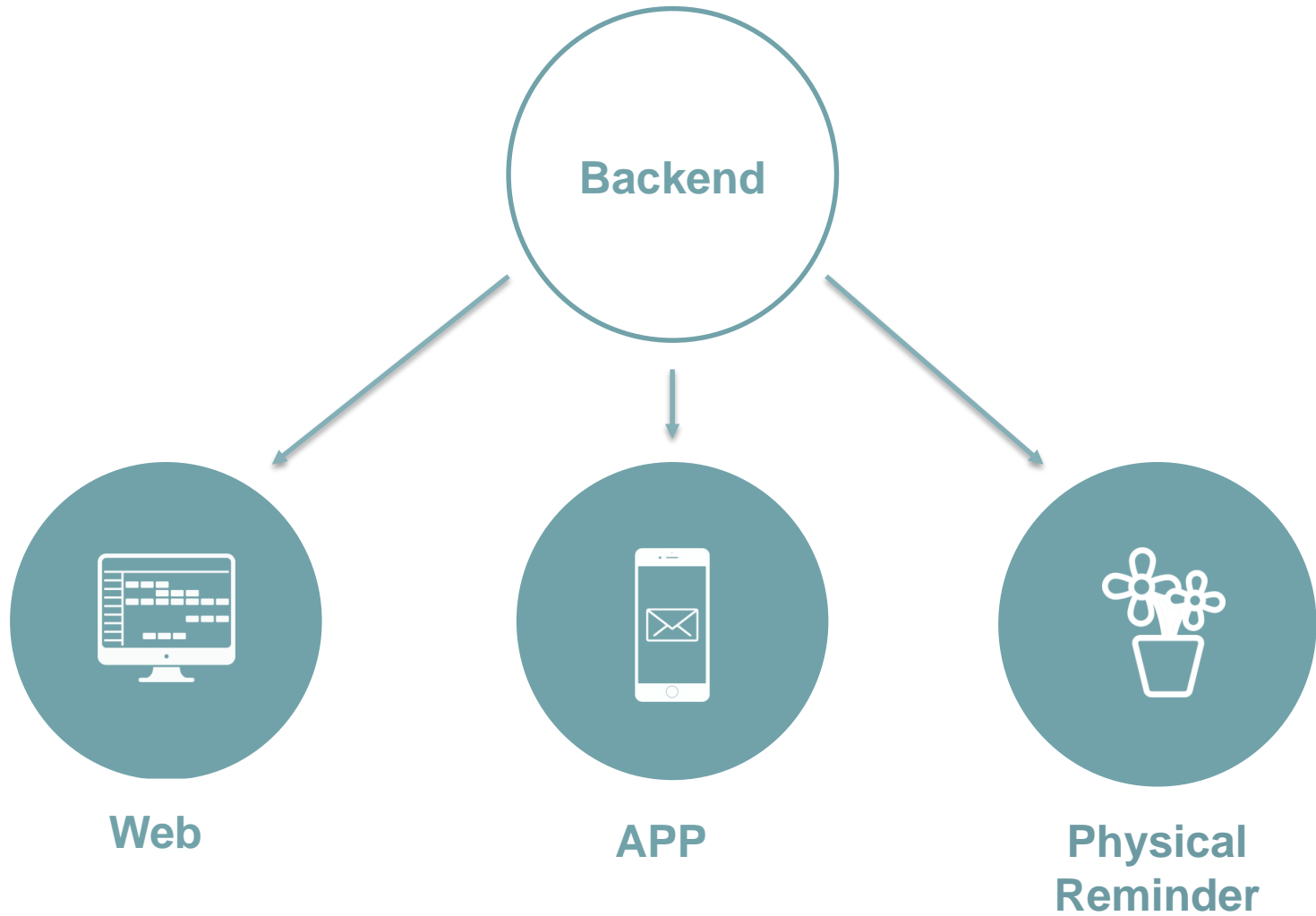


Needfinding
Results



Doctors——Too busy to search for info

Medi Info——Too many chaotic channels





Web



糖尿病

搜索

丁香日报 | 医疗品牌高峰论坛 | 丁香诊所 | 丁香园微信 | 医学时间

心血管 神经 肿瘤 消化 骨科 普外 胸外 泌外 肾内 妇产 皮肤 重症
内分泌 呼吸 血液 感染 整形 神外 麻醉 眼科 风湿 儿科 口腔 康复

论坛导读

丁香客

找工作

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调查

文献

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丁香通

丁香导航

丁香播报第十六期

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「胆固醇月」

护士节专供：2本协和出版社新书低至5折

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ONCOLOGY	DERMATOLOGY	UROLOGY	NEUROLOGY
PULMONARY DISEASE	PLASTIC SURGERY	PEDIATRICS	CARDIOLOGY

done

WELCOME BACK DR. MÜLLER

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What are you looking for?



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Short article without a picture

Reporting on the results of a phase III international clinical trial, Johns Hopkins Medicine physicians say use of a...

[Read more](#)



#cardiology JournalXY | 50 Likes

New study of olrug XYZ shows something new.

Reporting on the results of a phase III international clinical trial, Johns Hopkins Medicine physicians say use of a cardiac clot-busting drug to treat strokes that cause brain bleeding...

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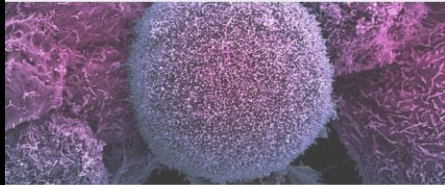


#tag JournalXY | 50 Likes

Revolutionary thing was found somewhere

Reporting on the results of a phase III international clinical trial, Johns Hopkins Medicine physicians say use of a cardiac clot-busting drug to treat strokes that cause brain bleeding...

[Read more](#)



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Clot-Busting Drug Reduces Death Risk in Hemorrhagic Stroke Patients

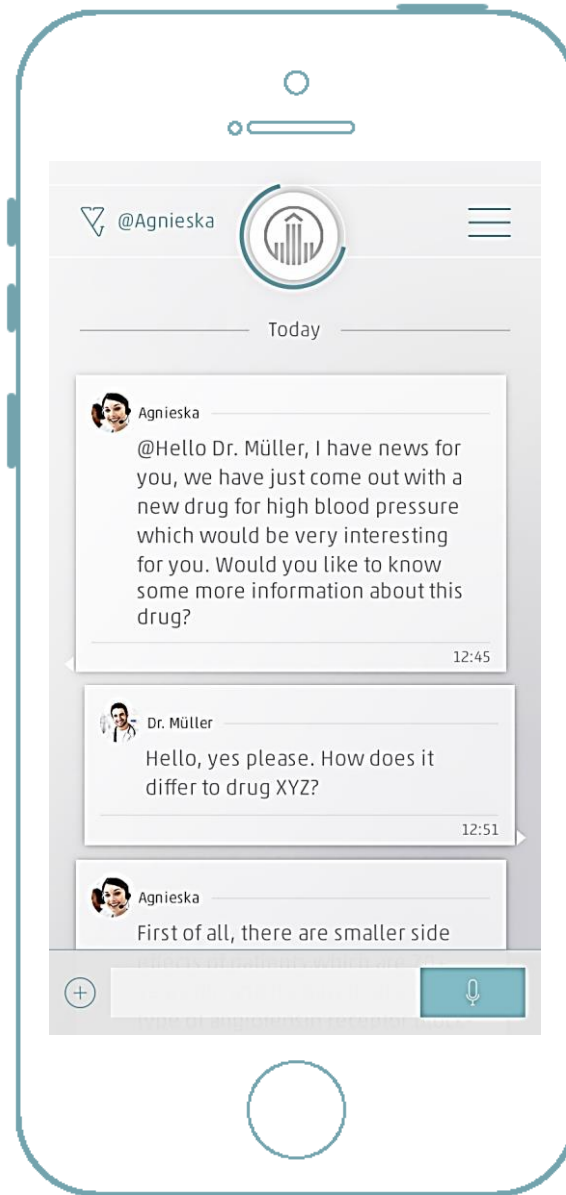


#news JournalXY | 50 Likes

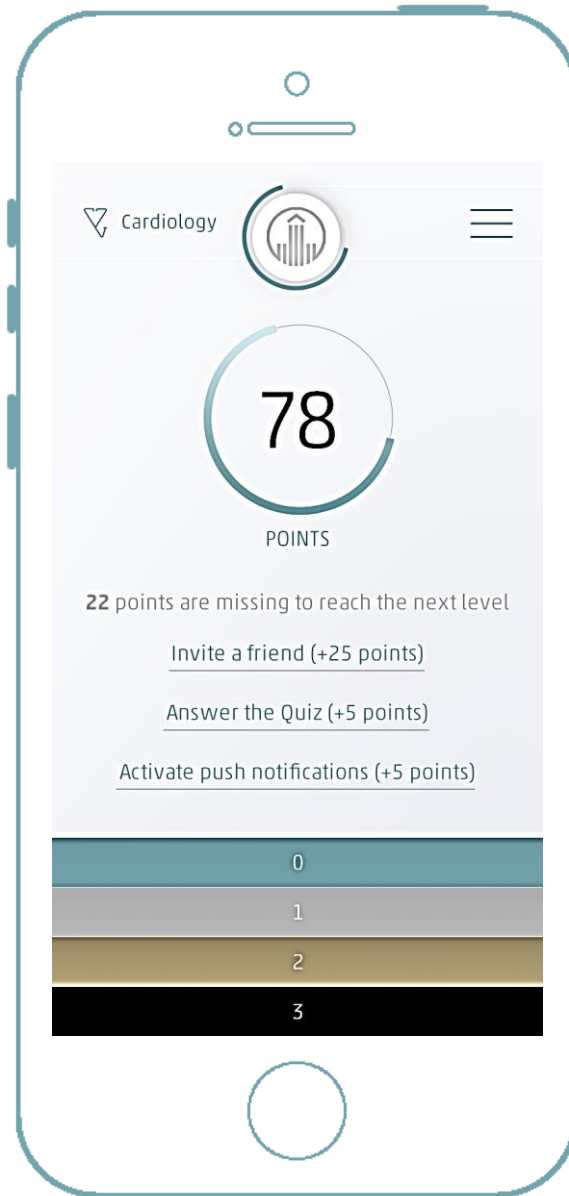
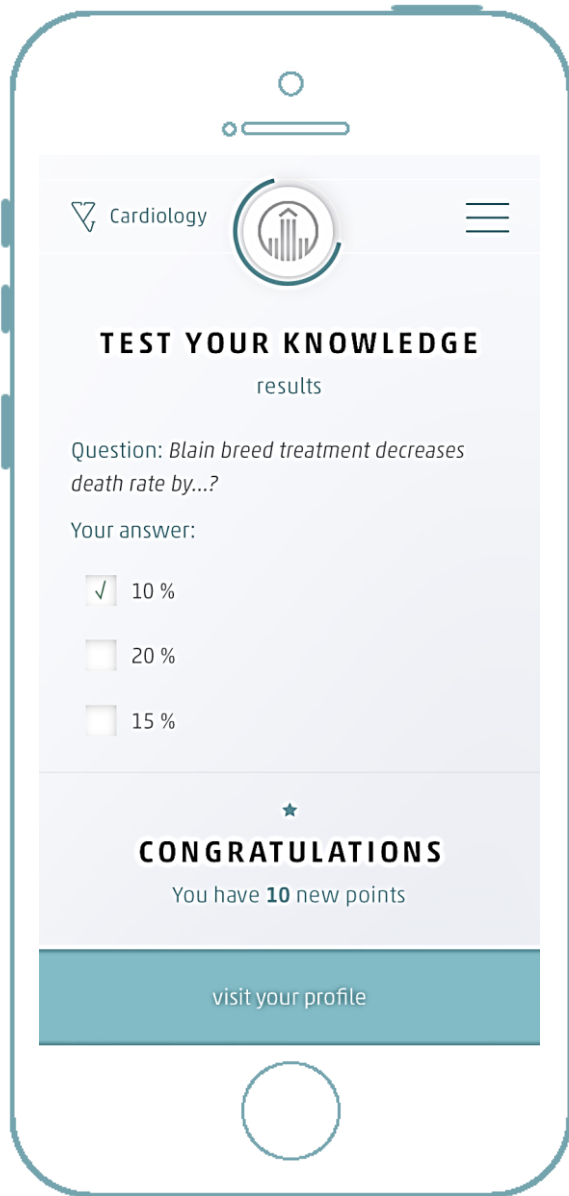
Short article without a picture



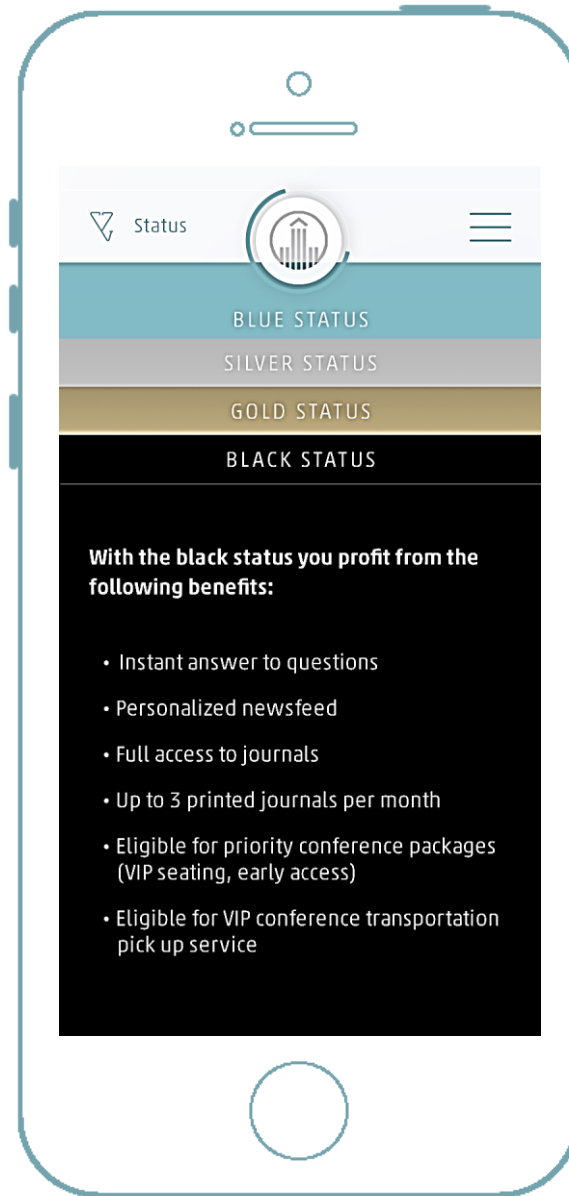
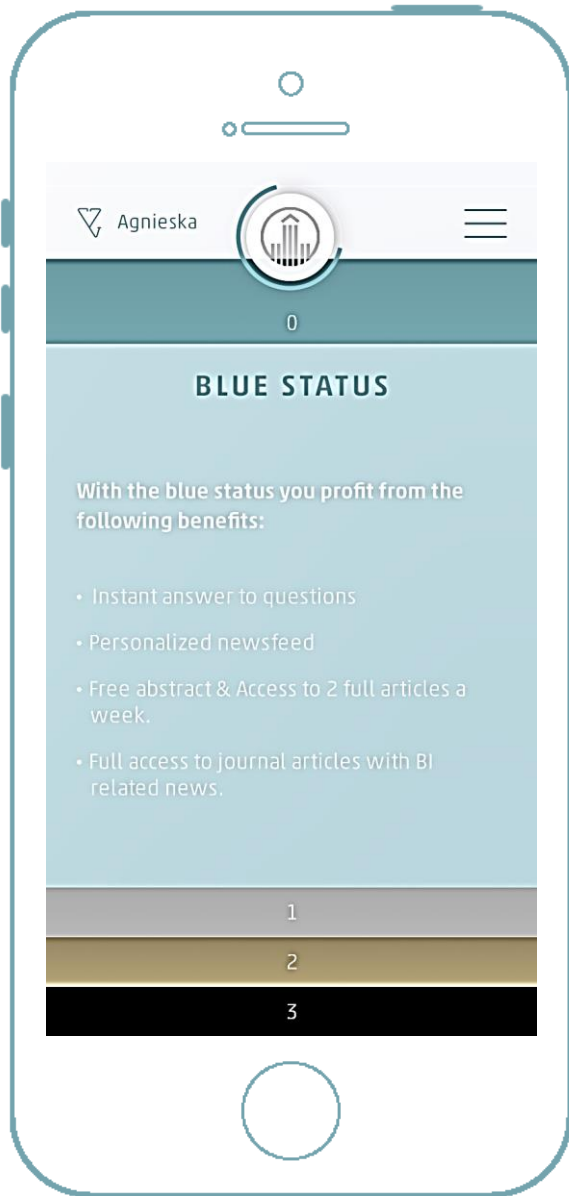
APP



Direct Chat With BI



Gamification



Status



**Physical
Reminder**





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Innovative ideas



Needfinding



Time management



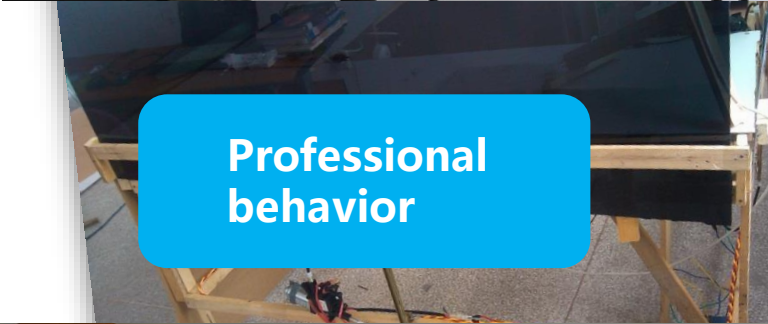
Design thinking



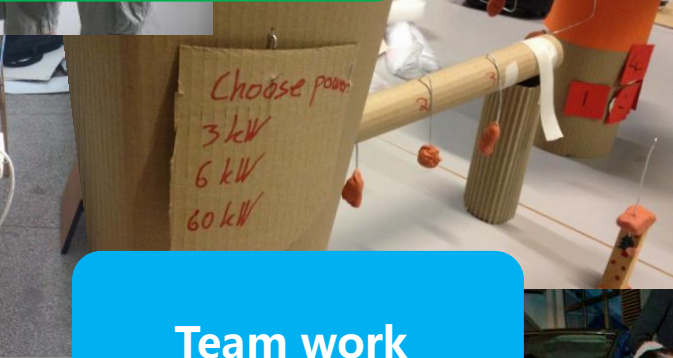
Hands on experience



Presentation skills



Professional behavior



Team work



**If you want to learn a subject,
teach a course on that subject!**

Thank
You!

