



The University of Nottingham

خوش آمدید



Jason Feehily
Asia Business Centre



- **Comprehensive University, since 1920, more or less**
- **5 Faculties**
- **43,561 students (34k UK, 10k Asia)**
- **5th largest in UK**
- **4 UK campuses**
- **2 Asian campuses**
- **28 spinout companies**
- **Turnover GBP570M**
- **Current surplus around £22M**





Global
Top 100
University



The University of
Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

Leadership



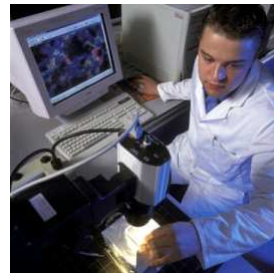
Sir Andrew Witty
Chancellor



Professor David Greenaway
Vice-Chancellor

National Research Rankings

- Engineering and Physical Sciences ranked #3 in UK
- Pharmacy ranked #1 in UK
- Chemistry ranked #2
- Physics ranked #3
- Agriculture ranked #3
- General Engineering ranked #3
- Civil Engineering ranked #4
- Mechanical Engineering ranked #4
- Law ranked #5
- Asian studies ranked #6
- Economics ranked #7
- English ranked #7

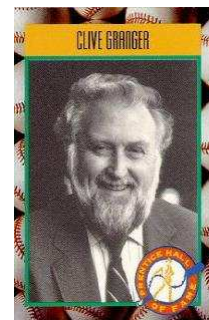


Research Excellence



Sir Peter Mansfield FRS
Nobel Prize for Medicine

- £500M turnover
- £150M research awards pa
- Ranked 7th in UK for Research "power"
- 2 Nobel Prizes in 2003
- 3rd in UK for Engineering and Physical Sciences



Sir Clive Granger
Nobel Prize for Economics



Education/Research Partnerships in Pakistan (not full list)

- Aga Khan University
- Bahria University
- Liaquat University of Medical & Health Sciences
- Mehran University of Engineering & Technology
- University of Health Sciences, Lahore



Partnerships in China



Education/Research Partnerships in China (not full list)

- Tsinghua University
- Fudan University
- Southeast University
- Zhejiang University
- Nanjing University





I. Business Engagement and Innovation Services



Business Engagement & Innovation Services (BEIS)

- Primary outcome from review of Research and Innovation Services
- Launched last year in response to changing operating environment, both in UK and overseas
- Targeted primarily at increasing university income from industry, directly and indirectly
- Update from last roadshow:
 - Mike Carr recruited as Director
 - Team close to completion
 - Already significant integration with schools and departments
 - Consolidating in the SCC Building



BEIS Visioning

External

- BEIS is the primary gateway for global businesses wanting to work with the University of Nottingham to increase their competitive advantage

Internal

- BEIS works with the University's schools and departments globally to optimise their external income through business collaboration based on research and development as well as knowledge and technology transfer

Business Engagement Activities

- £5.4m budget pa
- Targeted at strategic plan objectives
 - Increase £500k+/year partners from 5 (2009/10) to 10 (2014/15)
 - Increase direct research income from industry from £12m to £20m
 - Increase cumulative spin-out portfolio investment £41m to £60m
 - Increase IP related income £5m to £8m
 - Graduate opportunities – corporate and entrepreneurial



Structure

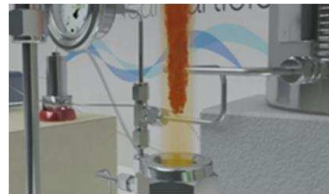
Hardwiring

- IP Commercialisation
- Business Partnerships
- Knowledge Transfer
- Asia Business Centre
- UNIP (oversight)
- Marcoms and admin



Further Sources of Funding

- Operational
- Research Council and Government agency



Business Partnerships - Led by Ben Sumner

Key Activities

- Account management of key business clients
 - In support of schools and departments
 - Undertake partner prospecting
 - Undertake major industrial projects
- Sector based relationship managers
 - Aerospace
 - Energy
 - Food Security
 - Manufacturing
 - Pharmaceutical
 - Digital (ICT and creative)



Key Objectives

- Encourage industrial partnership working and income
- Generate new industrial income streams
- Contribute to University Strategic Plan achievement



IP Commercialisation - Led by Susan Huxtable

Key Activities

- Manage IP disclosure and protection
- Support the translational research portfolio
- Formulate time-lined commercialisation plans based on market intelligence
- Support the formation of spin-out companies
- License technologies in partnership with academic inventors
- Manage distribution of licensing and royalty income
- Operate Nottingham University Consultants
- Manage HERMES Fellowship programme



Key Objectives

- Promote commercialisation activity
- Support departments and inventors
- Optimise ROI from IP
- Contribute to University Strategic Plan achievement



Knowledge Transfer – Dan King

Key Activities

- Management of SME/Mid Cap “gateway” e.g. employer reps, Ingenuity events and KTP programme
- Oversight of national and Local Government activity e.g. TSB, ERDF, Regional Growth Fund, LEP
- Management of University wide CPD strategy
- Oversight of HEIF



Key Objectives

- Encourage SME/CPD partnership working and income
- Generate new income streams
- Contribute to University Strategic Plan achievement



Innovation Park – Led by Bob Scott

Key Activities

- Wholly-owned subsidiary managing Innovation Park accommodation
- Offers front of house support to all business residents on UK campuses
- Supporting wider business engagement and inward investment activities



Key Objectives

- Achieve sustainable trading in line with UNIP business plan
- Contribute to University Strategic Plan achievement



Asia Business Centre – Led by Jason Feehily

Key Activities

Supporting Asian based industry activity based on a project and communication approach, e.g.

- Supporting IP Commercialisation
- Liaison with key businesses e.g. AVIC; CSR
- Supporting China and Asia visit programme
- Inward delegations to UK
- Supporting student placements/recruitment and Asia alumni engagement



Key Objectives

- Encourage two way engagement activity with Asia
- Generate new income streams
- Contribute to University Strategic Plan achievement



Asia Business Centre



Winner of Times Higher Education Leadership and Management Award
2013: Outstanding International Strategy

II. Why Focus on Asia?



UK Trade and Investment with Asia

- UK 'the natural home of Asian investment' Chancellor George Osborne 2013
- Association of South East Asian Nations (ASEAN) are at the heart of one of the world's fastest growing regions as forecast by the World Bank. These markets have a GDP of \$1.5 trillion
- As of July 2012, there were 5 Chinese companies listed on the main board at the London Stock Exchange, with a further 44 on AIM.
- China and the EU are trading more than €1 billion every day



Setting the Scene

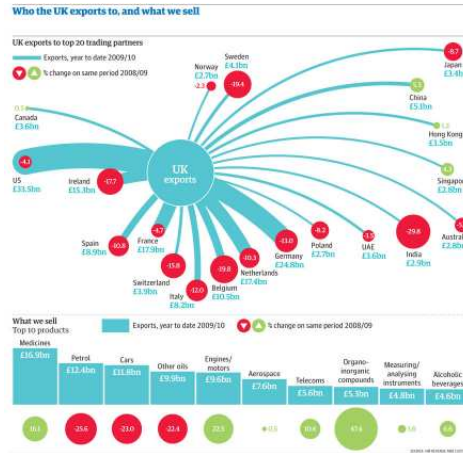
- For the UK, Higher education is ranked as the **UK's sixth largest export**.
- Asia is a significant market for the University: student income, research collaborations and income from Chinese businesses, **accounts for over £60 million** of our total income of £530 million.
- Approximately 3,000 British nationals live in China but **every year around 5,000 Chinese students graduate** from Nottingham - an enormous potential sales force for UK PLC



Benefits for UK



- Income as international HE hub - overseas earnings of £2Bn pa in Russell Group Universities
- Skills + labour
- Trade + investment links
- Science and technology links
- Cultural links



Higher Education is UK's #6 export

Asia-Strategic Approach

Research and Knowledge Transfer Priority Areas

- Biomedical Imaging
- Global Food Security
- Drug Discovery
- Energy Technologies
- Operations in a Digital World
- Advanced Manufacturing
- Aerospace
- Clinical Translational Research





A Partnership for the Long Term

- **Through our local and national partners** – local government, chambers of commerce, investment clubs
- **Through our structures** – overseas campuses, Asia- focused Schools and Asia Business Centre, give us a platform that is second to none, to build relationships and trust, understand Asia and take advantage of opportunities.
- **Through our people** - from the commitment of our Board and leadership team to our academics, students and administrators
- **Through our industry partners** – eg. GSK, BP, SAB Miller; Boots, Benoy, Romax
- **Through our students** –the leaders of tomorrow. They understand the needs of Asia and the benefits that can be gained by working together.



University of Nottingham Malaysia Campus

- Established in 2000 in partnership with Boustead Holdings in Kuala Lumpur
- The University of Nottingham Malaysia Campus won a Queen's Award for Enterprise 2001 and a Queen's Award for Industry (International Trade) 2006
- Highly successful University developing as SE Asia hub
- Transformational innovation: Crops for the Future Research and Technology Transfer Centre





University of Nottingham Ningbo - China Campus

- Established in 2004 in partnership with Wanli Education Group
- Highly successful University, also functioning as China hub
- Transformational Innovation: Marine Economy Research and Technology Transfer Centre



Looking ahead- Role of Business Councils

- Vice-Chancellor -Asia Task Force member
- PVC External Engagement-China Britain Business Council Board
- Regular Engagement with UK India Business Council
- Head-Asia Business Centre speaker on Doing Business in Asia for the UK ASEAN Business Council



Developing Opportunities

- Aerospace
- Energy Technologies
- Digital Technologies
- Advanced Manufacturing
- Commercialisation of Intellectual Property
- Executive Education



III. Knowledge Transfer



Research and Knowledge Transfer Priority Areas

Energy
Manufacturing
Aerospace
Magnetic Resonance Imaging (MRI)
Digital World
Global Food Security
Drug Discovery
Clinical Translation Research

UoN Investment c. £8M pa



University of Nottingham Technology Transfer Metrics

- Disclosures: circa 120 p.a.
- First filings: 25-30 p.a.
- License Deals: 10-12 p.a. – over 50 in the past 5 yrs
- Spin-outs: 2-3 p.a. – 26 in current portfolio
- IP-levered income: £8-10 million p.a.
- Spin-out investment: Over £35 million in the past 5 yrs

Technology Transfer at University of Nottingham

Annual performance

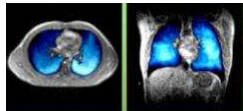
- >100 new technologies per year
- >50 patents
- 3 new spin out companies
- >15 license deals



UoN encourages intellectual property generation and shares the benefits with staff and students:

Revenue sharing principles:

- 40% University central
- 20% Inventor(s) school or Faculty
- 40% Inventor(s)



Working with industry

- One of the UK's top six universities for collaboration with industry
- Joint projects with Government and industry partners
- Intellectual Property development & commercialisation:
 - Feasibility studies
 - Technology transfer
 - Patent licensing

Example: Anti-cancer drug candidate developed at UoN licenced to Changzhou Le Sun Pharmaceuticals Ltd to develop for the Chinese market

- Small and Medium companies
 - UoN supports many start-up and spin-out companies in the healthcare sector
 - Founding partner in BioCity incubator (Nottingham and Scotland)

UoN works with many of the world's major healthcare companies, including:

- GlaxoSmithKline
- Pfizer
- AstraZeneca
- Merck Sharpe Dohme
- Novartis
- Johnson & Johnson
- Novo Nordisk
- Baxter Healthcare
- Novozymes



Main Technology Transfer Models

- Technology licensing
 - Patents and know-how transferred to a company
 - Development project with University
 - Usually global licenses
- Spin-out companies
 - For platform and disruptive technologies
 - Venture investment
 - University retain shareholding



Technologies Available for Licensing 2012

- Healthcare technologies
 - 26 specific technologies
- Food and Agriculture
 - 5 technology platforms
- Engineering, materials, energy
 - 17 specific technologies
- Electronics and IT
 - 11 specific technologies



Spinout portfolio

- 28 companies
- External investment c.
- Many major licence deals
- Recent product launches
 - Cancer diagnostic
 - Foetal heart monitoring device
 - Nano-Salt
 - Glazing films
 - Microwave oil separation
 - Etc



molecular profiles



PrometheanParticles

Formulating solutions with nanomaterials

CRITICAL PHARMACEUTICALS



UNIP Model - University Nottingham Innovation Park



- Opened in 2010, next to the Jubilee Campus, land from the City Council
- 5 Low Carbon Buildings (Aerospace, Mental Health, Geospatial, Renewable energy and Innovation services centre) open or to open in 2012
- GSK and Romax buildings to be added

- Financed by Government grants and EU Regional Development Fund
- Vibrant SME tenant community



Innovation Team for Low Carbon Manufacturing of Automotive Products

- Focus on green manufacturing of auto parts
- Established links with leading local auto parts manufacturing companies and research institutes
- Granted by the Bureau of Science & Technology with a total grant of RMB 9 million



Nottingham-Sondrel School of VLSI Design

- 3rd year UNNC students and recent graduates with relevant qualifications and professional experience
- **\$10m software investment** –Mentor Graphics
- 21 graduates from first course offered jobs with Sondrel
- Experienced senior engineers and professors deliver courses.
- Obtain qualification certificates in EDA



MRI Research Centre

- Objective: To increase the profile UNNC locally and internationally for research and education in MRI
- Working closely with the Sir Peter Mansfield Magnetic Resonance Centre, one of the most highly recognised centres for research in MR internationally



International Academy of Marine Economy and Technology (IAMET)

- Focus on applied research and industrialization in advanced materials, port services and logistics, marine natural products, and marine environment management
- Delivered through Research Innovation Centre and Knowledge Exchange Hub
- Collaboration with Government and WEG
- Draw on the world-class research excellence and global networks
- Well connected to the local marine-related companies



GeoSpatial Centre

- Establishment of Sino-UK Geospatial Engineering Centre
- Technology Transfer is key to future collaboration focuses
- Two “863 Projects” worth more than £4m with UoN’s involvement were awarded by MoST in March 2013



Unveiling in Beijing in 2011



MoST unveiling in UoN in 2013

Guangdong-Nottingham Advanced Finance Institute (GNAFI)

- Partner with Guangdong University of Finance
- A new Institute which will train up to 2000 Chinese financial specialists each year
- provide advanced training to senior managers from industry, commerce, financial institutes and government organisations



Creative Industry at Nottingham

The Institute for Screen Industries Research

Creative Industries : vibrant activities across campuses in the UK, China and Malaysia with expertise ranges across a variety of disciplines:

Global Partnerships with Hollywood : Dolby, Fox, Pixar



Horizon Digital Economy Research Centre

- An initial £40 million **investment** from RCUK
- Challenge to future digital economy (focus on Creative Industry)
 - **mobile** technologies
 - **cloud** computing
 - **human-computer** interaction



The only UK university with partnerships with Hollywood's biggest names and studios

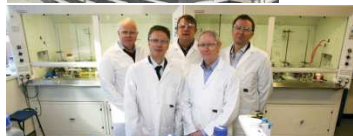


Batman in Nottingham



Bio City – Nottingham An Incubator for Life Science Businesses

- With the changing dynamics of business operations, the BioCity project sets out to provide a flexible structure to help biotechnology and healthcare businesses grow and develop their services, products and commercial strategies.
- Europe's largest bioscience incubators.
- 129,000 sq ft of office and laboratory space
- 70 companies employing 700 people
- £35m of external venture capital
- Mobius Life Sciences Fund



Not for Profit Company
Board majority private sector
background

Life Science focus:

- **Pharmaceuticals, Healthcare, Medical Technologies & BioTechnology**
- **Support services and corporate sponsors**

Training & Talent Development

2013 Science and Engineering Leadership Building (UNNC)

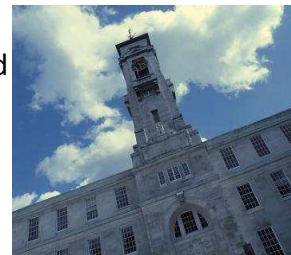
- Part of *National Knowledge Upgrade Project 2010-2020* by Ministry of Human Resources and Social Security of China
- Sponsored by Chinese Academy of Personnel Science and Ningbo government
 - ❖ automotive industry development strategy
 - ❖ Key emerging technologies
 - ❖ Talent development
 - ❖ Team and capacity building

Participants include: FAW, BAIC Motor, SAIC Motor and Dongfeng Motor, as well as key auto part companies in Ningbo



Future Opportunities

- Huge surge in confidence from Asian businesses, ambition and determination to enter global markets
- Looking to world class Universities for IP and technology; talent development; innovative partnership with international connections
- University networks and Campuses offer soft landing zones for new entrants
- Universities and businesses working in partnership in the Asia markets



IV. University Wider International Role

- Universities have much to offer in innovation, trade and inward investment – under-exploited resource
- International reputation, market intelligence, presence on the ground and networks – staff, students, alumni, entrepreneurial tendencies
- Main challenge is sifting opportunities and picking long term winners



Careers and Employability Service – Led by Nalayini Thambar

Key Activities

- Helping students research career ideas, find job vacancies, make effective applications, develop skills and meet employers

- Connect business to talented students and graduates via [online vacancy service](#), temporary jobs through [Unitemps](#).

- [Promote](#) your career opportunities and [engage](#) with our students

Key Objectives

- Maximising graduate opportunities
- Strategic engagement with employers



The Strategic Value of Employability

- Students developing 'employability skills' are likely to engage more effectively with their learning experience
- Employable graduates become powerful alumni
- Graduate destinations influence the institutional reputation and the attraction of good students
- Internship and Graduate Recruitment are low-risk routes to initial company engagement with a university



Delivering Employability

- Annual investment of £2.4M (probably typical for UK Russell Group University)
- Staff involved – 65, many careers professionals/trainers
 - Central Teams - Employer engagement, skills workshops, the Nottingham Advantage Award, Unitemps, Marketing/Information and Stats
 - Faculty teams - Career Consultants, Careers Adviser(s), and employability officers
 - Asia teams - 3 colleagues in Malaysia and 4 in China – predominantly employer engagement



Student Employability

- 2nd most targeted UK university by the Times Top 100 companies (High Fliers 2013)
- 75% of Nottingham 2012 graduates in work moved into professional employment (64% nationally)
- 93.8 % of Home, EU and Overseas UK Nottingham 2012 graduates were in positive outcomes 6 months after graduation. Compared to predicted performance this places us 5th in the Russell Group



The second most
targeted university
by top graduate
recruiters*

*High Fliers Research
The Graduate Market in 2013

Global top 50 in an annual
global ranking measuring
universities performance on
graduate employability

100% of UNNC graduates are
employed or go on to further
education within 6 months
after graduation



Working with Global Recruiters

- **BP** global scholarships – UK – China - Malaysia plus local BP internships
- **Rolls Royce** run skills workshop for Business, Science and Engineering UGs.
- Thematic recruitment events – **Rail, Energy, Aero**
- Eg Rail Industries Events Network Rail, Arup, Bombardier, London Underground, Siemens Rail, Laing O'Rourke
- Global CES team means international roles can be networked across 3 campuses – enhancing graduate mobility and working more like MNC
- **Merlin, McKinsey** and **WPP** - All are hugely over-subscribed in the UK and so see no need to have to increase their brand awareness – its only because we are Global that they are talking to us. They are interested in the UoN/UNMC /UNNC students.



Global Top 100 University

Employers of UNNC Graduates

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Global Top 100 University

Alumni events

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Brunei 2012

Shanghai 2013

Global Food Security Conference

- The first international forum - 'Food Security Challenges and Solutions' - was held on 5th and 6th November Shanghai
- Bring together leading international figures from industry, academia and non-government
 - To identify and debate possible solutions to the global food security threat
 - To initiate an ongoing dialogue and network that facilitates actions which hasten global food security within a realistic timescale



International Centre for Professional Development (UNNC)

International Conference on Atmospheric Science and Air Pollution Control & The 7th Fine and Ultrafine Particles Workshop

- **Current Understanding of the Scientific Problem to Smart Technology and Management Strategy**
 - Atmospheric aerosols
 - Atmospheric chemistry and physics
 - Measurements & modeling of air pollutants
 - Greenhouse gases and climate change
 - Air pollution meteorology and long-range transport of air pollutants
- Impact of air pollution on health
- Smart air quality monitoring technology
- Air pollution control technologies
- Air quality/pollution management



Key Success Factors

- Presence in Asia – visible commitment and political reach
- Internal networks – intelligence gathering, relationship building and trust
- Reputation - research and track record in delivery
- Coherence - in priorities
- Engaged leadership and governing body
- Follow-up capacity



Key Messages

- **UoN welcomes global partnership with international partners**
 - Committed to “local” and “global” economic development
 - Joint development and exploitation of new technologies
 - Joint training of engineers and business professionals
 - Establishment of innovation capacity in partnership with regional and national agencies



Thank you!

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