

# The Realisation of Research



# The **Realisation** of Research

“UK Technology Transfer at work – a UCLB perspective”

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# Overview

- ❑ UK overview
- ❑ Enterprise at UCL – the broader agenda
- ❑ UCL Business (UCLB)
- ❑ What we do, how we approach it and examples;
  - Service to UCL (and others)
  - Licensing
  - Company creation
  - Product development to market
- ❑ Future

# Preamble

**‘It was the best of times, it was the worst of times .....’**

Charles Dickens – A Tale of Two Cities

# UK Overview

- ❑ UK recovering from double-dip recession (perhaps triple!)
- ❑ Large UK national debt
- ❑ Quantitative easing
- ❑ Unstable Eurozone creating uncertainty
- ❑ More austerity measures expected
- ❑ Investors remain cautious
- ❑ UK Government focus on Innovation and Wealth Creation to help stimulate economic recovery
- ❑ Good translational grant support through Research Councils and Technology Strategy Board

# UK Overview – HE sector

- ❑ New tuition fee structure – early days
- ❑ Top tier seems stable but others?
- ❑ Pressure to share services – hub and spoke models
- ❑ Research Excellence Framework 2013 includes ‘impact’
  - TTO activity plays a role
- ❑ UK Government expects HE sector to drive economic recovery
- ❑ Higher Education Innovation Funding (HEIF) focussed

# UK Overview – TTO's

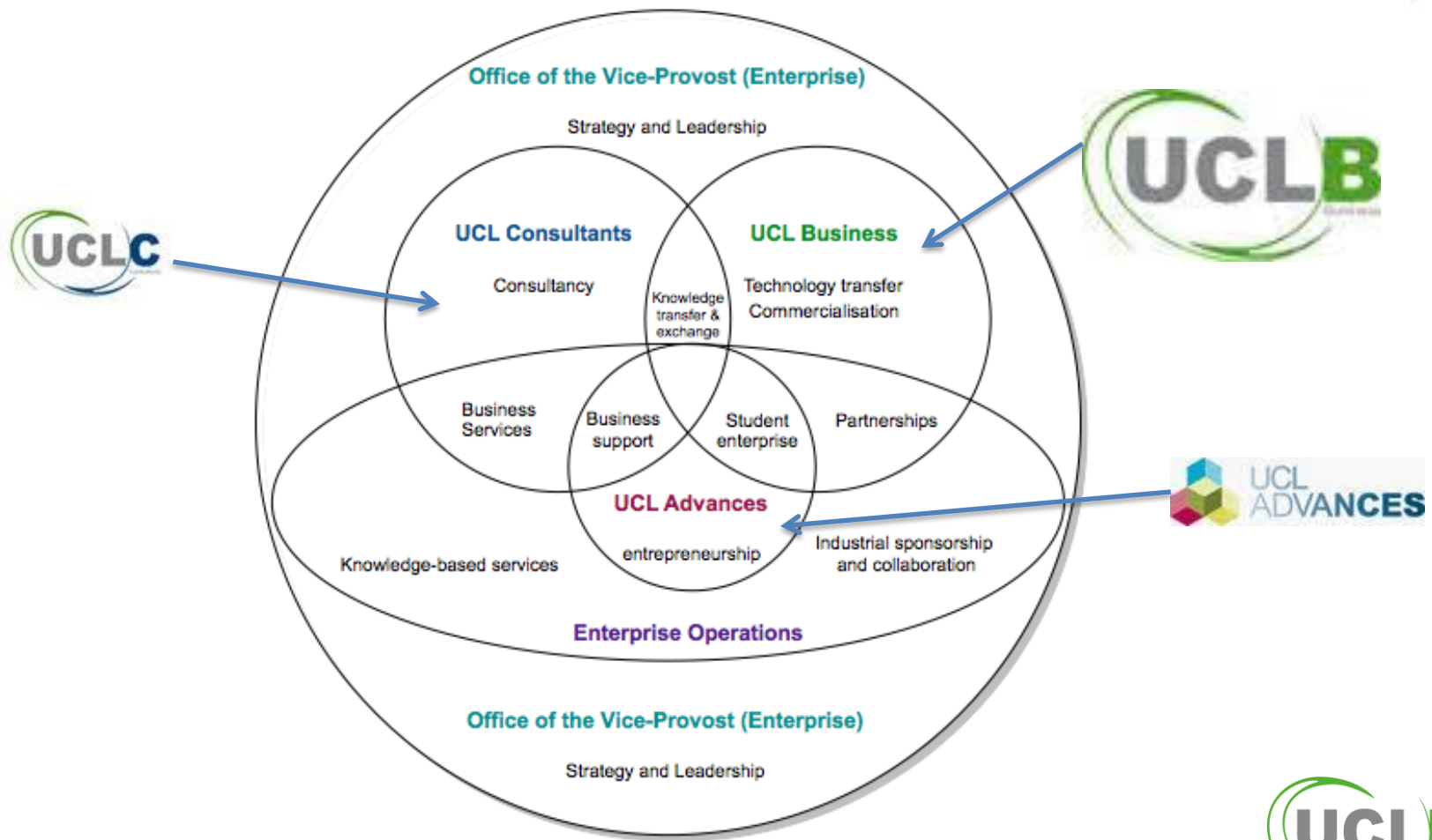
- ❑ Smaller offices
- ❑ Larger offices – usually embedded with research office
- ❑ TTO - Company
- ❑ TTO - Hub and spoke
- ❑ Major UK TTO's evolving - TTO 'Extra' others softening
- ❑ Have some lost their way?

# UCL – London's Global University

- ❑ Established over 180 years ago
- ❑ First university in England to
  - ❑ admit students of any race, class or religion,
  - ❑ welcome women on equal terms
  - ❑ teach experimental science, modern European languages, Laws...
- ❑ Today – over 4000 researchers and
- ❑ Ranked **4th** in the QS World University rankings for 2012 and **21st** in the Academic Ranking of World Universities - 2012 (**3rd** in Europe)

# Enterprise at UCL is evolving

## UCL ENTERPRISE TEAM AND ACTIVITIES



The Realisation of Research

# UCLB – the company

Incorporated 1993 as FreeMedic PLC

- ❑ 1995 - first spin out IPO
- ❑ 1997 - major royalty settlement
- ❑ 2000 - first university supported MBO
- ❑ 2003 - name change UCL BioMedica
- ❑ 2006 - name change to UCL Business

**Experimenting, learning  
and evolving**

# UCLB – the company

Current status :-

- ☐ Wholly-owned by UCL
- ☐ IPR commercialisation arm of UCL
- ☐ Governed by service agreement with UCL
- ☐ Financially self-sufficient
- ☐ Profitable
- ☐ Independent but closely aligned with UCL

## Previous 'experiments' :-

- ☐ Cradle to Grave approach
- ☐ Devolved business managers
- ☐ Entrepreneurs in Residence
- ☐ Contract Research
- ☐ Clinical Trials
- ☐ Dedicated fund
- ☐ Chemistry offering
- ☐ Private Consultancy offering

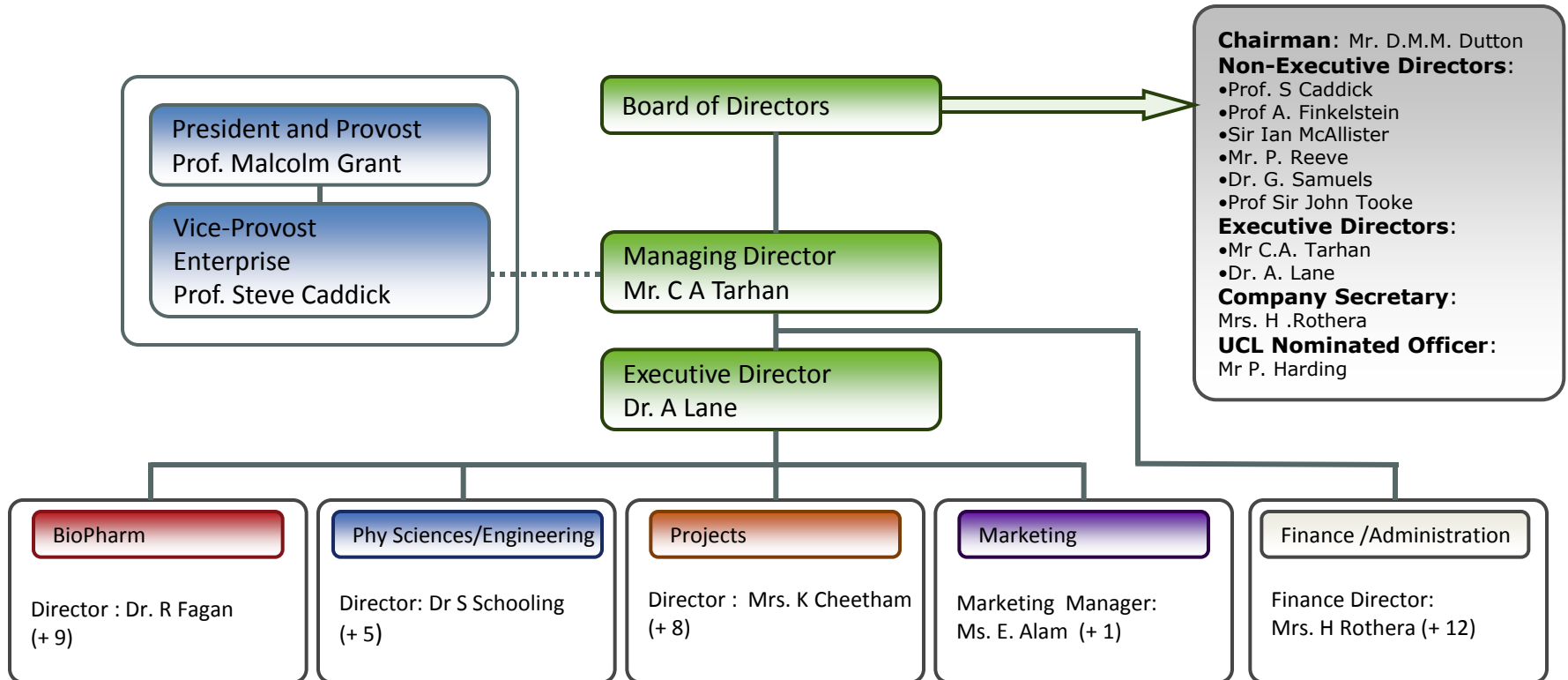
**Kaizen**

# UCLB – 2013 mission objectives

- ❑ Realising the ‘**value**’ of UCL’s IP
- ❑ Increasing UCL’s ‘**impact**’
- ❑ Providing a ‘**service**’ to UCL
- ❑ Mitigating UCL’s ‘**risk**’
- ❑ Making ‘**money**’

Annual review to test  
and balance

# Organisation Chart



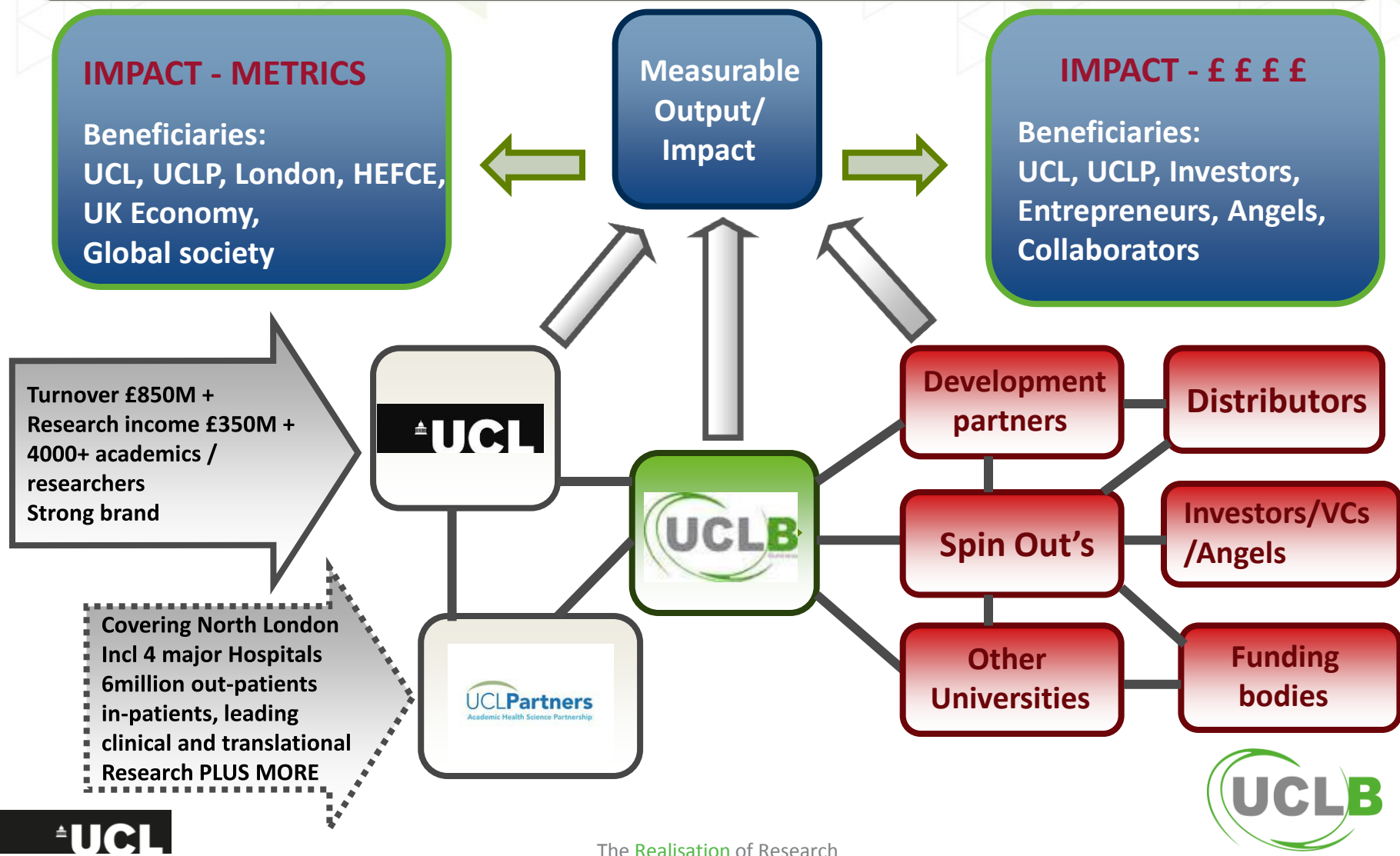
## UCLB – TTO ‘Extra’

- ❑ Investment – PoC and follow on
- ❑ Therapeutics portfolio targeted for licensing – supported with in-house research at UCL
- ❑ Obtain translational grants and external funding
- ❑ Provide dedicated project management
- ❑ Capacity to develop products incl. CE mark
- ❑ Work collaboratively and Licence in IP too
- ❑ Actively support and engage with spin outs
- ❑ Value portfolio

**It's a business.**

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# The 2012 'Business' environment



# Our Service business - for UCL (and others)

- MTA / CDAs
- Project Management
- Technology transfer
- Facilitate and help with complex initiatives/bids
- Consultancy
- General advice and guidance on commercial contract IP issues.
- Social Enterprises
- Raise profile – eg. UCL @iTunesU, Lotus in the Quad.

**Deliver an efficient service - keep researchers engaged**

# Lotus in the Quad



**Make it fun!**

# Our Investment business

- ❑ Review and select viable projects
- ❑ Provide Proof of concept (PoC) funds and subsequent investment
- ❑ Provide project management and expertise
- ❑ Actively manage the portfolio to;

**Build commercially valuable licenses from research**

**Create spin-out companies**

**Deliver de-risked/market ready products**

# UCLB Licensing Portfolio

Over 250 potential license and licensed projects

- ❑ Principally biomedical – long term/high value/high risk
- ❑ Various stages of development from IDF to commercial products in clinical development.
- ❑ Some on market – saving lives

£25m +

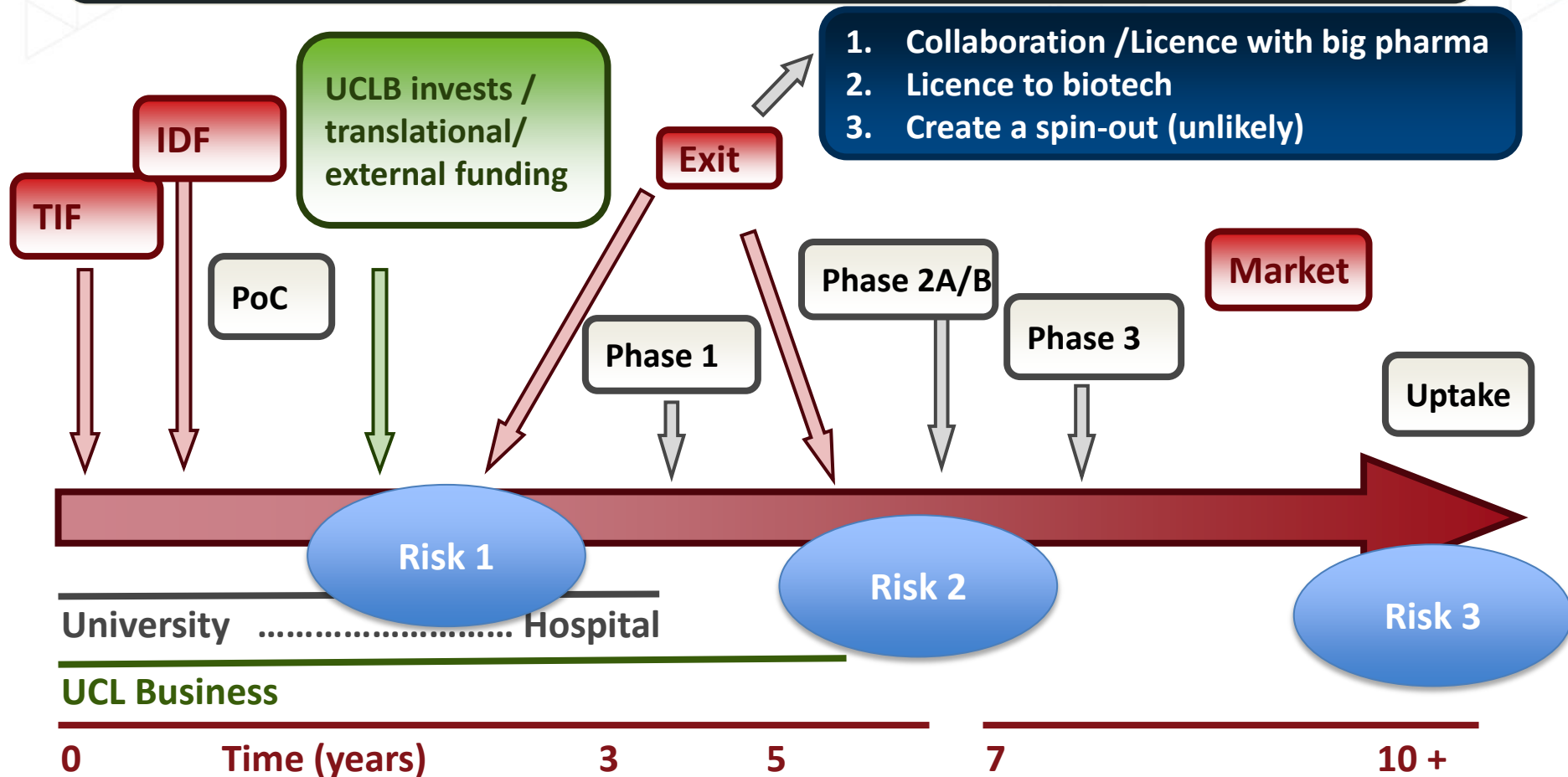
250,000 +

 **NOVARTIS**



**Making a difference**

# UCLB – commercialising therapeutics



# Licensing case study

- ❑ Therapeutic area - liver failure (annual market >\$500M)
- ❑ Initially invested ≈£60K PoC funds to validate and secure IP position
- ❑ UCLB then committed £500K mile-stoned funding
  - Efficacy studies on new formulation (PK/PD)
  - Toxicology studies (outsource)
  - GMP production for First in Man
  - CTA to MHRA
- ❑ Helped to secure £750K from a MRC Experimental Medicine grant
- ❑ Licensed in December 2008
- ❑ Phase 1 completed successfully. Phase 2 initiated.

# Licensing case studies

## ☐ Regenerative Medicine

- ☐ Therapeutic area – Age Related Macular Degeneration
- ☐ License to Pfizer in 2010
- ☐ Phase 1 study imminent

## ☐ Gene Therapy

- ☐ Therapeutic area – Haemophilia A and B
- ☐ License to BioMarin Inc in Feb 2013
- ☐ Background UCL and St Jude Children's Research Hospital <http://www.youtube.com/watch?v=11maHFwC35s>
- ☐ Clinical studies expected to start shortly

# Licensing case study - complex

- ❑ Therapeutic area – Amyloid disease
- ❑ Operating through a virtual company structure – Pentraxin Therapeutics Limited
- ❑ UCLB committed £1m over five year period via loan – now fully repaid
  - Covered Patent costs
  - Acquired rights from Roche
  - Production of cGMP product
  - Proof of concept funding – early stage clinical studies
  - Significant translational funding secured
  - Two licences to GSK
  - Third product in pre-clinical development

# Licensing case study - complex

## Basic Research

### MRC Programme Grant since 1979

Identification of serum amyloid P component (SAP) as a diagnostic tool for amyloidosis and potential therapeutic target in amyloidosis, Alzheimer's disease and type 2 diabetes

### Outcomes

- Invention and clinical implementation of SAP scintigraphy
- Invention of anti-SAP therapy for amyloidosis
- Identification of hereditary systemic amyloidoses
- Demonstration of precursor product relationship in amyloidosis

## Applied Research

### Collaboration with Roche

Development of novel palindromic bis(D-Proline) drug

### Clinical studies of CPHPC

Targeted pharmacological knockout, a new mechanism of drug action  
Clinical efficacy in systemic amyloid  
SAP depletion from CSF in Alzheimer's

### Out-licence to GSK in 2009

Combined CPHPC + anti-SAP for treatment of systemic amyloidosis

### Wellcome Trust Seeding Drug Discovery Initiative in 2007

£3.9 million for development of drugs targeting transthyretin (TTR) amyloidosis

### MRC DCS Grant 2010

£3.8 million to develop drugs targeting C-Reactive Protein.

### Out-licence to GSK in 2010

Mds84 to stabilise TTR amyloidosis

## Healthcare Practice & Policy

### UK NHS National Amyloidosis Centre at UCL/Royal Free

Established 1999

Department of Health funding via NCG now >£3.5 million per year

Diagnosis and management advice on whole national caseload

### Outcomes

- Patient throughput >2000 per year
- Best patient survival in the world
- Major ongoing contribution to all aspects of diagnosis and treatment
- Liver transplantation for hereditary amyloidosis
- Discovery of IL-1 inhibition as first effective therapy for Muckle Wells syndrome
- World leading periodic fever syndrome expertise

### Other Outcomes

- Numerous Publications including three *Nature* papers 2002, 2006 and 2010
- Established UCL spin out company, Pentraxin Therapeutics Ltd

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# UCLB Company creation

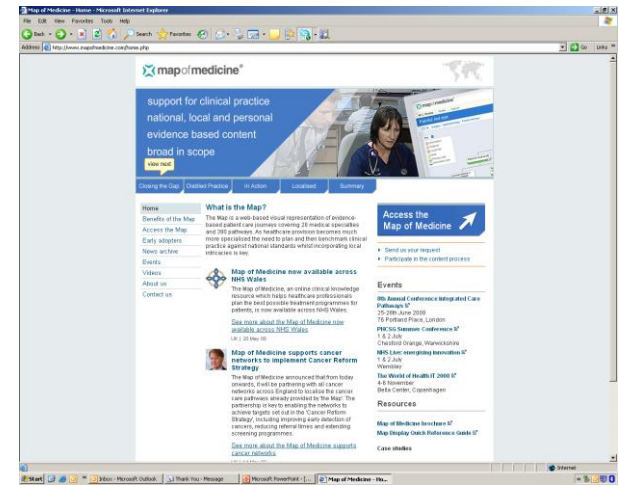
- ❑ > 100 companies
- ❑ 50+ in portfolio
- ❑ Broad portfolio incl. Bio, services, engineering, software
- ❑ New spin-outs classified as;
  - ❑ UCLB supported
  - ❑ UCLB facilitated and
  - ❑ others

**Its not about the quantity  
but the quality**

# Company creation: Medic-to-Medic Ltd



- ❑ Incorporated 2000
- ❑ Created the Map of Medicine
- ❑ Direct investment by UCLB of £1.7M
- ❑ Active involvement on Board
- ❑ Concept adopted by the NHS
- ❑ 2005 - Sale to Informa PLC
- ❑ 2008 – Acquired by Hearst Corporation in US



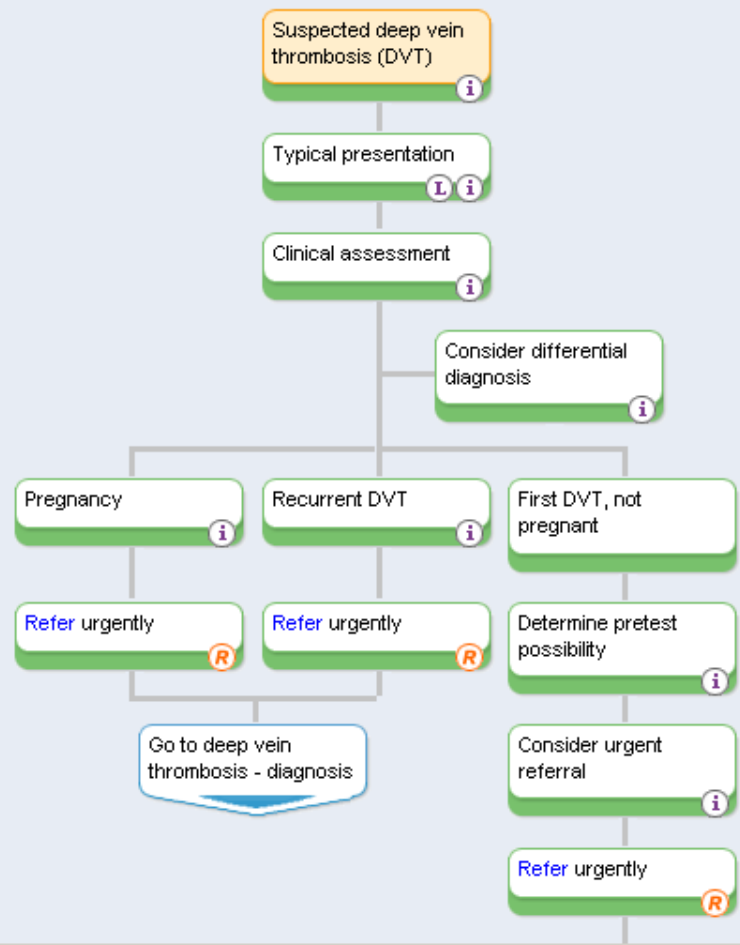
# Deep vein thrombosis - primary care

[Print page](#)
[Feedback \(3\)](#)
[Referral Letters](#)
[Return Home](#)

Medicine / Haematology and haemostasis / Deep vein thrombosis

Search:  [Search](#)

Key



## Suspected deep vein thrombosis (DVT)

[Quick info](#)
[Notes](#)
[Add local info](#)

### Definition:

- DVT is defined as a total or partial blockage by a blood clot of a deep vein in the legs – calf DVT affects the veins of the calf and proximal DVT affects veins above the knee

### Incidence:

- the annual incidence of DVT is approximately 1/1000 people

### Risk factors include:

- age
- recent surgery
- immobility including air travel
- past history of DVT

[Search National Library for Health](#)

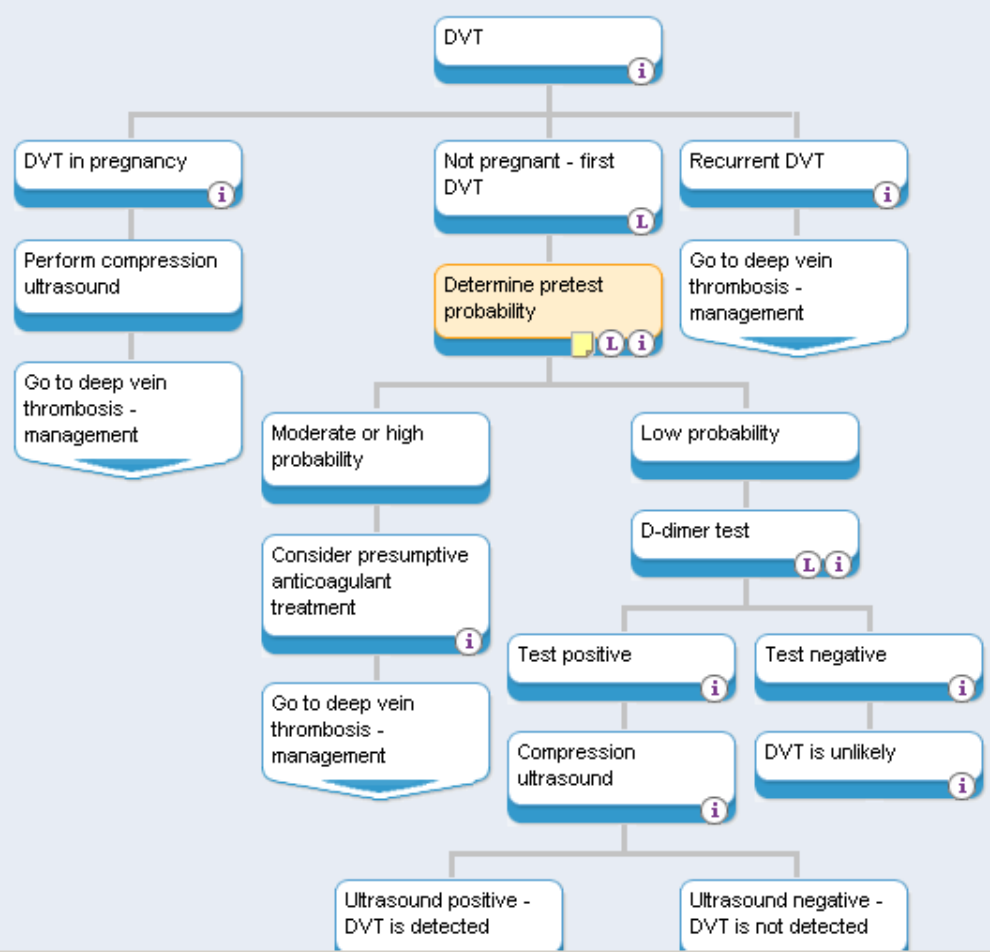
# Deep vein thrombosis - diagnosis

Print page | Feedback (3) | Referral Letters | Return Home

Medicine / Haematology and haemostasis / Deep vein thrombosis

Search: (e.g. asthma or "chest pain") Search

Key



## Determine pretest probability

Quick info | Notes | Local info

### Local administrative information

[Link to local pretest probability scoring system](#)

Alternatively:

Call the Haematology Registrar on Ext 2311 or bleep 7788 for further information as needed.

S-Devon | 08-May-2008

[Edit local admin info](#)

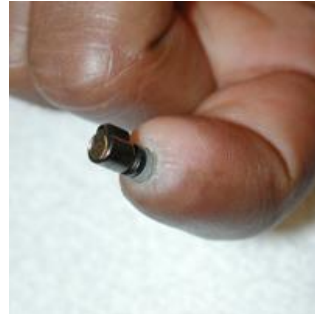
Search National Library for Health

# Company creation: Medic-to-Medic Ltd

Map of Medicine product now available to **52 m UK residents**  
at <http://www.nhs.uk> and going international.

# Company Creation (Real): Stanmore Implants Worldwide Ltd

- ❑ Spin Out Company 1996
- ❑ Orthopaedic implants with new IPR for attaching prosthetics direct to bone
- ❑ UCL loan of £1.2m
- ❑ 2007 - UCLB invests £500k and restructures Board
- ❑ Trade Sale in 2008

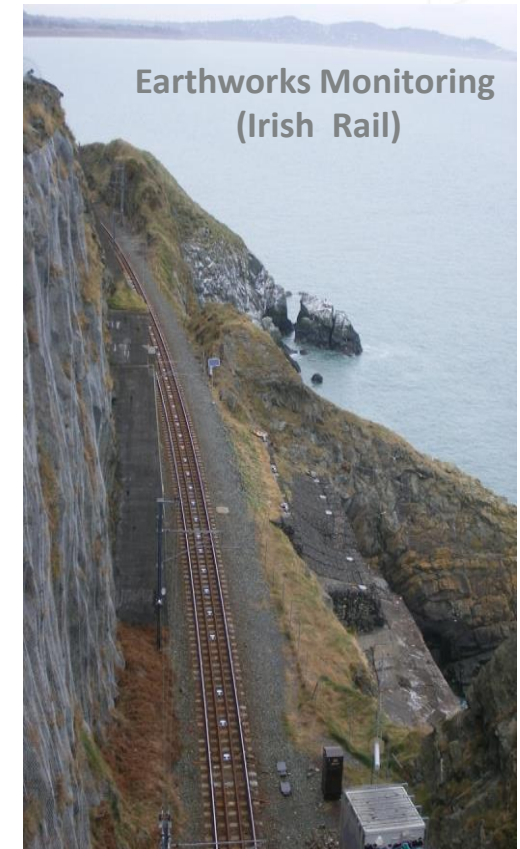


<http://www.youtube.com/watch?v=C90OY12cN14>

# Company Creation: Senceive Limited



- ❑ UCL Spinout commercialising mesh-enabled wireless sensor network technology.
- ❑ Providing wireless enabled condition monitoring solutions.
- ❑ Small investment.
- ❑ Organic Growth
- ❑ Work in progress



# Company creation (Real): Abcodia Ltd



- ❑ Incorporated 2010
- ❑ Licensed in IPR and pre-existing licence
- ❑ Enhanced valuation
- ❑ Identified management
- ❑ Secured VC funding alongside UCLB
- ❑ Essential for company to work with UCL
- ❑ Winner of four awards in December 2012



# Company Creation: BioVex sale to Amgen

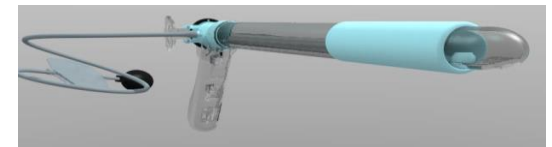


27 January 2011

“University College London cancer vaccines spin-out BioVex has been bought by US biotech company Amgen in deal worth up to \$1 billion”.

# UCLB Product development

- ❑ Supported by in-house Projects team and consultants (regulatory, marketing, distribution and design experts)
- ❑ 10 Medical devices in development
- ❑ Capacity to CE Mark products
- ❑ Manufacturing partners in UK, China and Poland, Distribution partners worldwide
- ❑ Products already on market include;
  - ❑ Disposable self-lit scopes
  - ❑ Various versions of UCL graduated compression socks



**Develop UCL ideas into products - and sell!**

# Evolution of UCL socks

- ❑ Idea developed by surgeons and scientists at UCL
- ❑ 'Saphena Medical' graduated compression socks now selling 80,000 + pairs per month to NHS
- ❑ 'SaphenaGrip' launched 2012.
- ❑ Retail market – Tesco's + others
- ❑ Sports market – Evexar Sports socks



Medically developed, comfortable, graduated compression sock for sport, travel, maternity and everyday wear



# Novel Nano-composite Polymer

- ❑ Developed in-house
- ❑ Numerous applications - some in clinic
- ❑ Characteristics include;
  - ❑ Bio-compatibility
  - ❑ Exceptional strength
  - ❑ Viscoelastic properties
  - ❑ Can be formulated to encourage cell growth for tissue scaffolds

First artificial transplant of Trachea using UCL's polymer  
announced 7<sup>th</sup> of July 2011 <http://www.bbc.co.uk/news/health-14072829>



# New spin out and new App

Latest UCL spin out – Asio Limited



- From UCL's Dept of Computer Science.
- **Chirp** an incredible new way to share your stuff – using sound.
- Chirp sings information from one iPhone/iPad/iPodtouch to another.
- **Share** photos, webpages, contacts: all from your built-in speaker.



# The Future for UCLB

- ☐ More than just numbers (and £££'s) its about 'impact'
- ☐ Benchmarking 'impact'
- ☐ Manage 'expectations'
- ☐ Manage 'trends'
- ☐ Extend services
- ☐ Deliver real outcomes
- ☐ Long term game - yes but!

**Adapt to survive**

Questions?

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