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# Intellectual Property Rights and commercialising the outcomes of your research

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# Outline

- What is Intellectual Property?
- Types of Intellectual Property
- Technology Transfer
- Commercialising your research

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# What is intellectual property (IP)?

- IP is the product of **thought, creativity and intellectual effort**
- Ownership of IP is no different from owning any other type of property, e.g. a house or a car
- IP can be bought, sold, licensed, etc.
- Intellectual Property Rights (IPR) exist to enable you to protect any IP you generate

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# Types of IPR

| Registered | Unregistered |
|---|---|
| Patents | Copyright © |
| Registered Designs | Unregistered Designs |
| Trade Marks ® | Trade Marks ™ |
| | Knowhow |

# IP Ownership

- An employer owns IP generated by its employees (1977 Patent Act)
- Cardiff has revenue sharing policy with employees for IP income:

| | Inventor(s) | School(s) | University |
|---|---|---|---|
| Net Revenue | % | % | % |
| First £2000 | 100 | 0 | 0 |
| Next £40,000 | 60 | 20 | 20 |
| £42,000 - £200,00 | 50 | 25 | 25 |
| Over £200,000 | 30 | 35 | 35 |

- Collaboration agreements with research sponsors/collaborators normally determine IP ownership
- Not addressing IP ownership up front can cause problems

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# Student generated IP

- Students are generally **not** considered to be employees
- Students own any IP they produce (subject to any other agreements)
- Needs to be identified early so problems can be avoided!!

# Patents

Monopoly up to 20 years

*Government* ⇢ *Inventor*

Technical description

- Deal between government and inventor
- Valid for up to 20 years
- Must be **novel, inventive** and **commercially applicable**
- **Vital** to keep your invention a secret before filing

# Copyright

- An **automatic right**
- Protects the **expression of an idea**, not the idea itself
- Includes:

  Literary, musical and dramatic works

  New protocols, questionnaires

  Papers/documents for publication

  Computer software code

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# Design Rights

- ‘What it looks like’
- Must be **original**
- Prevents others from using the design
- Includes:

  Shape

  Texture

# Trademarks

- Trade marks are an **indication of origin**
- **Distinguish** one company's goods or services from another company's
- Includes:

  Shapes

  Sounds

  Words

  Logos

  Smells

- Can't describe the product

NIKE®

Amoxil®

# Knowhow

- Also known as confidential information or trade secrets
- Information which is important, but is not in the public domain
- Your "expertise"
- Example - KFC

*'11 herbs and spices'*

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## Trade Secrets

- Recipe

## Patents

- Manufacturing process
- Packaging


## Registered Trade Mark

- Brand name
- Logo

## Copyright

- Font of Label

## Registered Design

- Bottle shape

# Copyright Infringement

- Photos hosted on Wikimedia Commons
- Photographer sued for copyright infringement
- Courts found that these images could not be protected by copyright due to the fact that the ‘author’ was not human

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# Commercial Development of your Research

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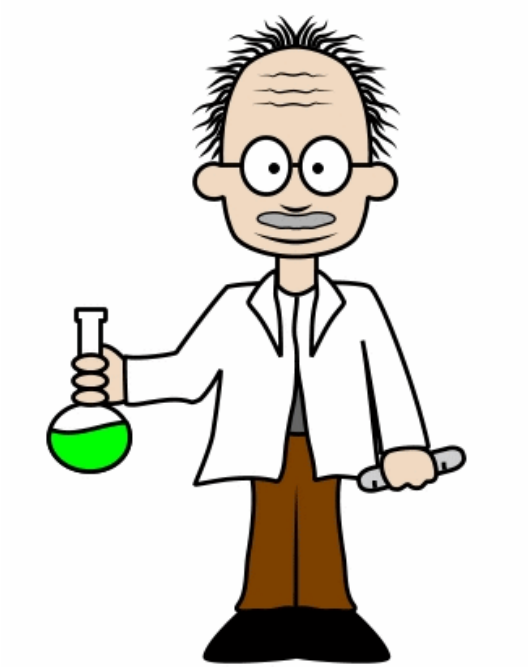
# Technology Transfer



"The commercial development of research ideas and intellectual property into commercially viable products or processes that meet defined market needs"

Fundamental Research → Adoption

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# Benefits of Technology Transfer

- **Helps bring a sense of 'real world' relevance into fundamental research**
- Research Excellence Framework - Impact
- Can act as a spur to further innovation e.g. by attracting funding and investment
- Encourages external collaborations
- Create opportunities for employment
- Generates income

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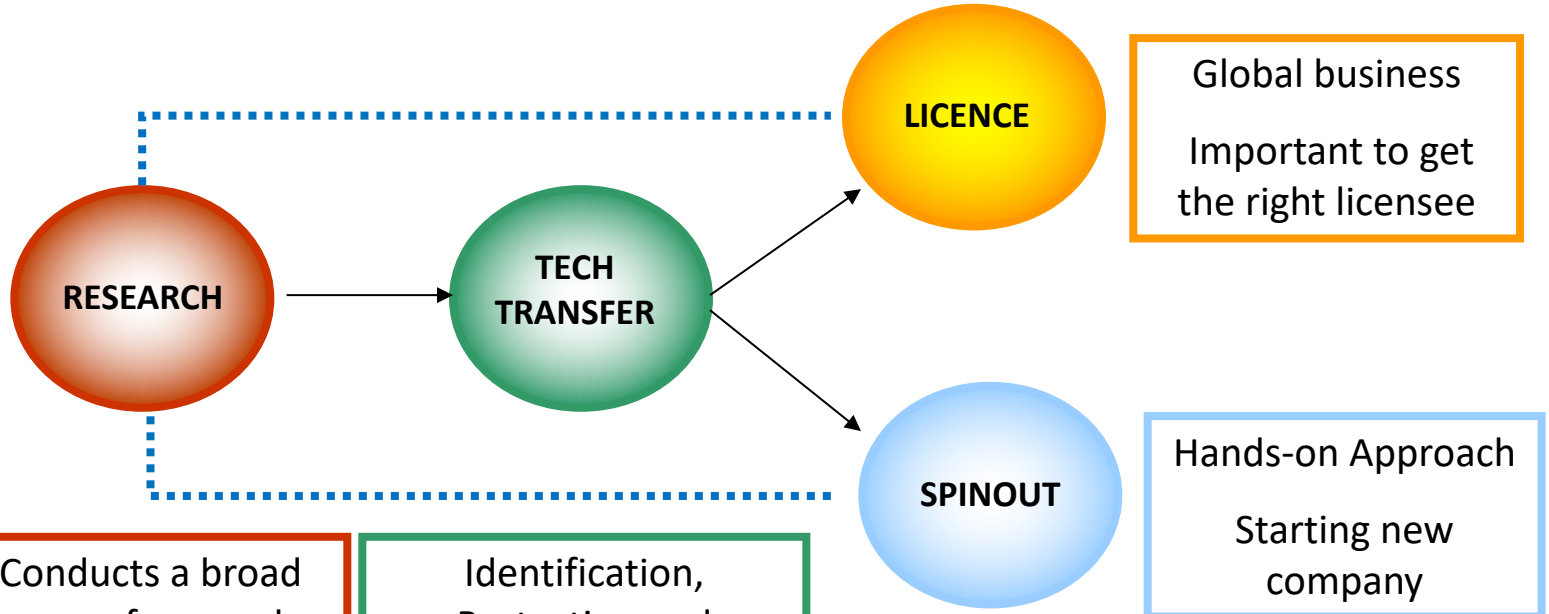
# Technology Transfer Process

Fundamental Research → Adoption



# Who can help me?

- Cardiff University –
  Research and Innovation Services (RIS)
- Swansea University –
  Research Engagement and Innovation Services (REIS)
- Aberystwyth University –
  Research, Business and Innovation (RB&I)
- Bangor University –
  Research and Enterprise Office (REO)

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# How can we help?

Responsible for the identification, protection and commercialisation of outputs from the University's research base.

- Technology review and assessment
- IPR filing and maintenance
- Translation or development funding
- Commercialisation by the appropriate route (e.g. spinout, licencing)

# What now?

- Has the invention been reduced to practice?
- Is further research required?
- Is further funding required for prototyping/testing?
- Cost of development – regulatory requirements, clinical trials?
- Where will you get the money from? – Funding bodies/industry?
- Timescales, milestones and key deliverables must be defined to make the project an attractive proposition for investment

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# Commercialisation: Licencing

- Give a company permission to use your IP in return for payment
- Company will be an established business in the same sector as your technology
- ‘Arms length’ approach may be favoured by academics
- Low risk/low return
- Cardiff University licence/royalty income last year £1.82M
- 277 licence agreements were negotiated last year

# Example: Myoview (Heart Imaging Agent)

- Initial collaboration with Amersham Intl. (now GE) 1987
- Licence agreement concluded in 1994
- Royalties paid on actual sales from 1995
- Market leading product (accounts for 40% of the global market for diagnostic heart imaging)
- Sales worth > £1.3 billion
- Cardiff's royalty income to date is >£4.5M

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# Revenue Sharing

| | Inventor(s) | School(s) | University |
|---|---|---|---|
| Net Revenue | % | % | % |
| First £2,000 | 100 | 0 | 0 |
| Next £40,000 | 60 | 20 | 20 |
| Next £158,000 | 50 | 25 | 25 |
| All further net benefits | 30 | 35 | 35 |

# Commercialisation: Spinout

- Licencing to a new company specifically set up to exploit the technology
- Disruptive technology with little existing market
- Inventors have direct control over development of product or service
- Requires a greater demands on inventors time
- Financial rewards less diluted

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# What makes a good spinout?

1. Motivated inventor (spinout not dragout)
2. Demonstrated proof of concept
3. Invention meets a compelling unmet need
4. Large, growing market (>£100m total market)
5. Strong IP that gives clear differentiation in the market
6. Clearly definable route to market with attainable milestones
7. Believable revenue model
8. Strong business case
9. An exit plan

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# Examples of Welsh University Spinouts

CholesteniX™

Naturiol

alesi surgical

MedaPhor

**Oncomorph Ltd**

IRYStec™
Perception Is Reality

WELSH WOUND INNOVATION
ARLOESEDD CLWYFAU CYMRU

LUCILIA pharma

# Spinouts: Alesi Surgical (Asalus)

- **2009**: UK provisional patent filed
- **2010**: Company founded, raised £1m
- **2012**: Raised £700K investment
- **2013**: Raised £1.25m

  Trade Marks Innervision™/Ultravision ™
- **2014**: CE mark achieved

  Further £3m investment raised

  First Sales achieved
- **2017:** Additional £5.2m through equity fundraising

  Further £4m from European investors

  US subsidiary company Alesi Surgical Technologies Ltd

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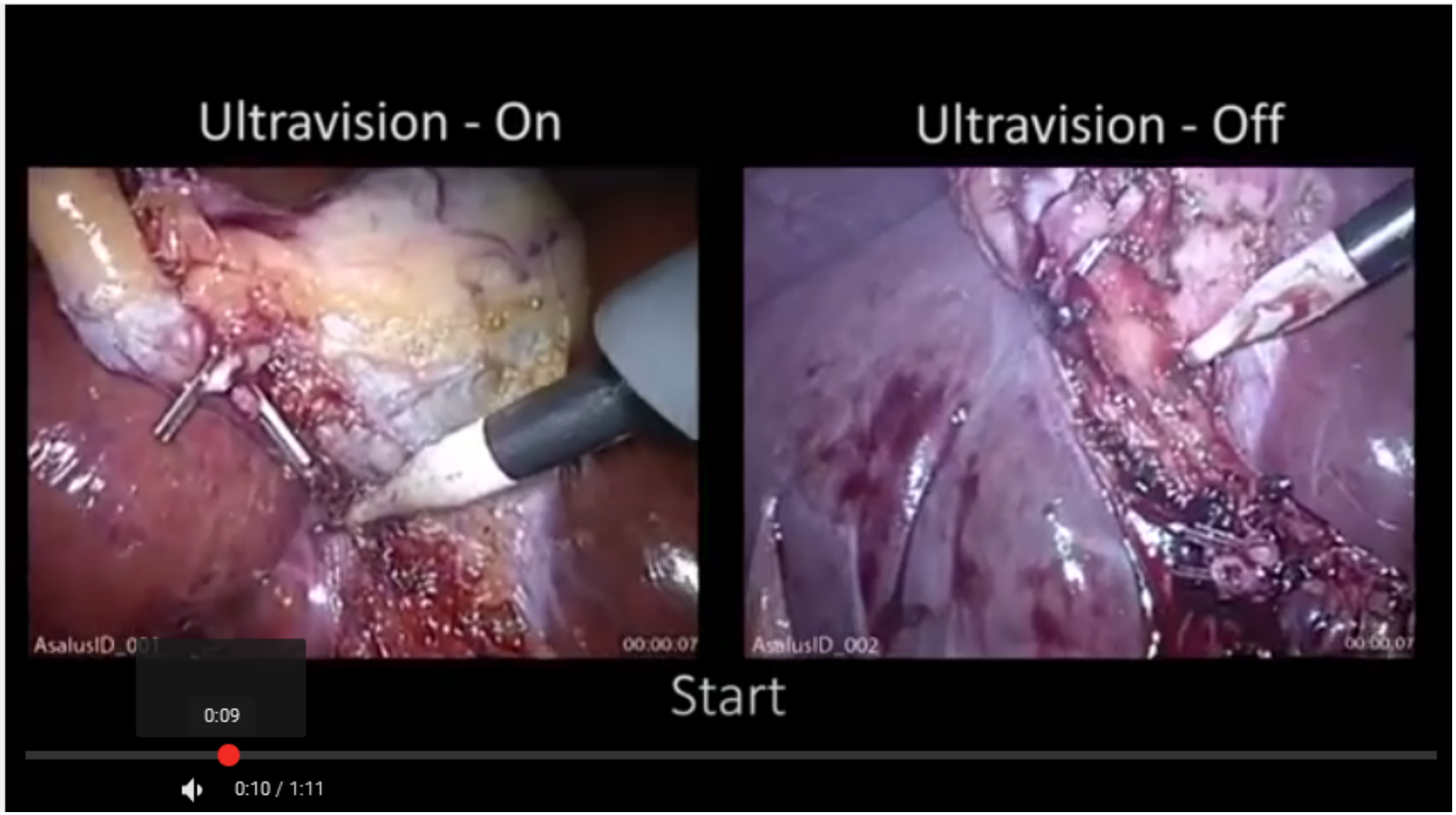
# Alesi Surgical – Ultravision



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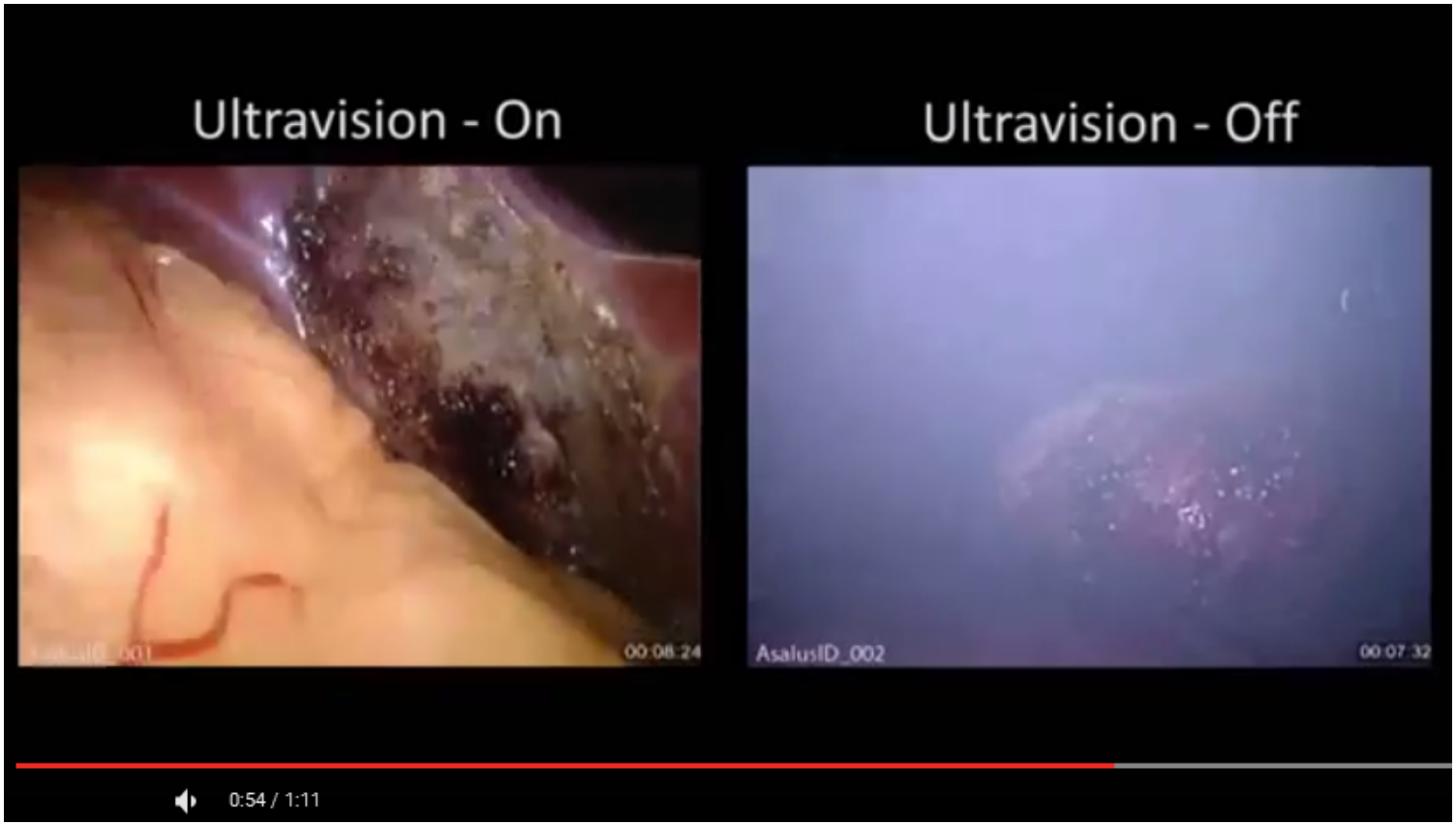
# Alesi Surgical – Ultravision



# PulmonIR Ltd

- Based on technology which can quickly and easily diagnose COPD
- Recent spinout from Swansea
- Investment from IP Group, Development Bank of Wales and Swansea Innovations
- Clinical trials started in August 2016 with Cwm Taff University Health Board
- This was funded through a Welsh Government health technology fund
- Further investment will be needed to validate the system and market product

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# Points to take away

- IP isn't just for industrial-based work
- Patent then publish
- Make sure you are aware of the "inventors" of the technology
- Exploiting IP can occur via different routes, namely licences and spinouts
- Commercial exploitation can be a lengthy process, but rewarding

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# Questions??