

*Engaging with Industry:
Why should an academic
researcher be interested?*

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and Cambridge KT



This talk

- Introduce me
- Why engage with industry?
- Models of engagement
- Maintaining good relationships
- Importance of networks
- What makes an entrepreneurial researcher (Case studies from Cambridge)?

My background

- Consultant in Knowledge Transfer and IP
- Academic bio-medical research
- R&D and product development in a small UK biotechnology company and big US pharmaceutical company
- Clinical trials in oncology
- University and PSRE technology transfer offices
- Universities and regional economic development
- More than 30 years in technology transfer, including co-founding Praxis (now PraxisUnico in 2002)
- 2007 Queen's Award for Enterprise Promotion

Why engage with industry?

- Fulfil university mission
- Access to industry resources
- Satisfaction of seeing research benefiting others
- Learn about societal needs
- Re-invigorate research
- Financial reward?
- Promotion reward?

Modern Universities

"Cambridge is no longer an "ivory tower" of research. We recognise that our research must benefit society and the economy."

Professor Sir Leyzek Boresevicz
Vice-Chancellor
2 March 2012

Partnering models

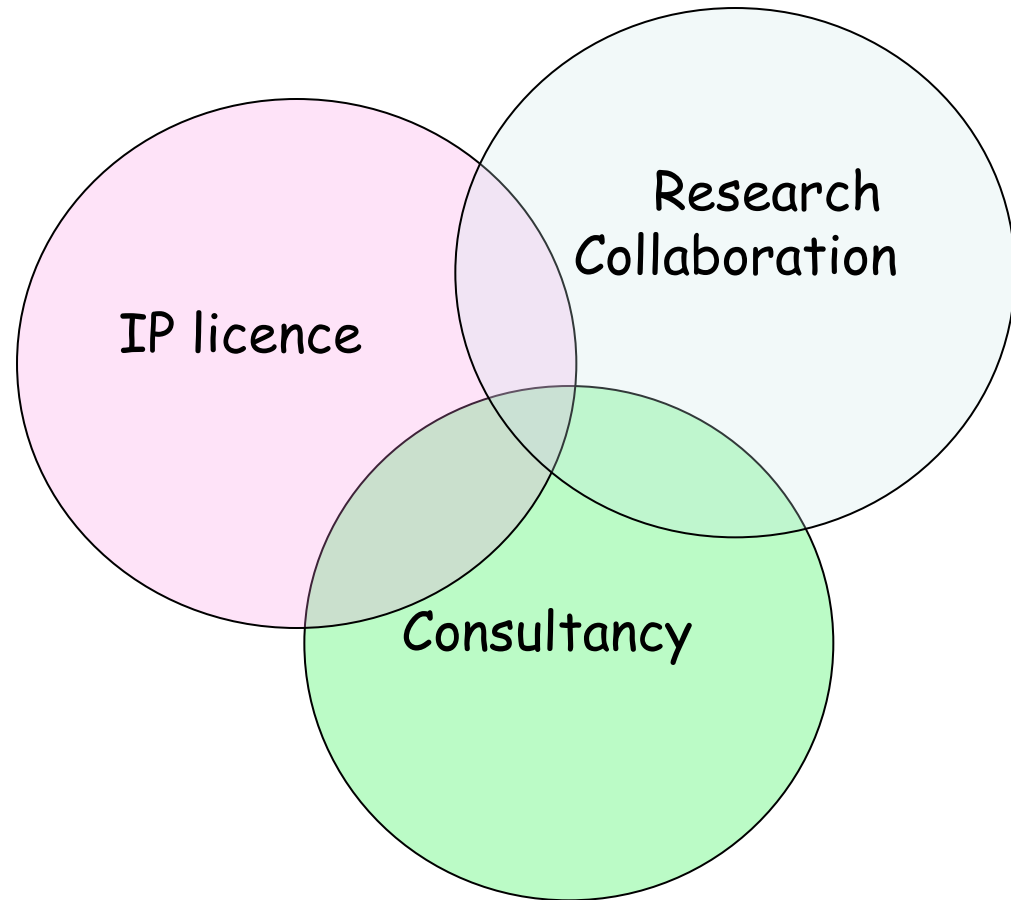
- Licensing
- Spin-out companies
- Collaboration
- Consultancy
- CPD
- People exchange
- Incubation
- Access to facilities

UK Universities provided £3 billion-worth of services to business in 2008/09

- Consultancy services £332 million
- Contract research £937 million
- Collaborative research £732 million
- Access to specialised facilities £110 million
- CPD £559 million

(HEBCIS)

Multiple channels



Choosing the model #1

- What's your strategy?
 - University
 - TTO
 - Academic
 - Other
- What benefit do you want to achieve?
 - E.g.
 - Revenue
 - Access to know how and resources
 - Studentships
 - Achieving certain metrics
 - Who sets these and why?

Choosing the model #2

- Market need
 - What unmet need does this fill?
 - What competitive advantage will it give?
 - To whom?
 - When?
 - How much more work does it need from your side?
 - How unique is your proposition?
 - What resources will industry need to bring to take this to market?
- Is this viable?

Licensing

- Evaluate the opportunity
- Market need?
- IP position?
- Freedom to operate?
- Stage of development?
- What does the academic want?

New company

- Why?
- Leadership & ownership
- Finance
 - Investment
 - Bootstrap
- Return on Investment timelines
- Conflicts of Interest

Collaboration

- Benefits
 - Know how
 - Kit and equipment
 - IPR sharing
- Leveraged funding
- Further transactions

Fee for service

- Fully costed and priced
- Target driven
- Grant of rights

Consultancy

- Advice
 - SABs
 - Reviews
 - Expert opinion
 - Written reports

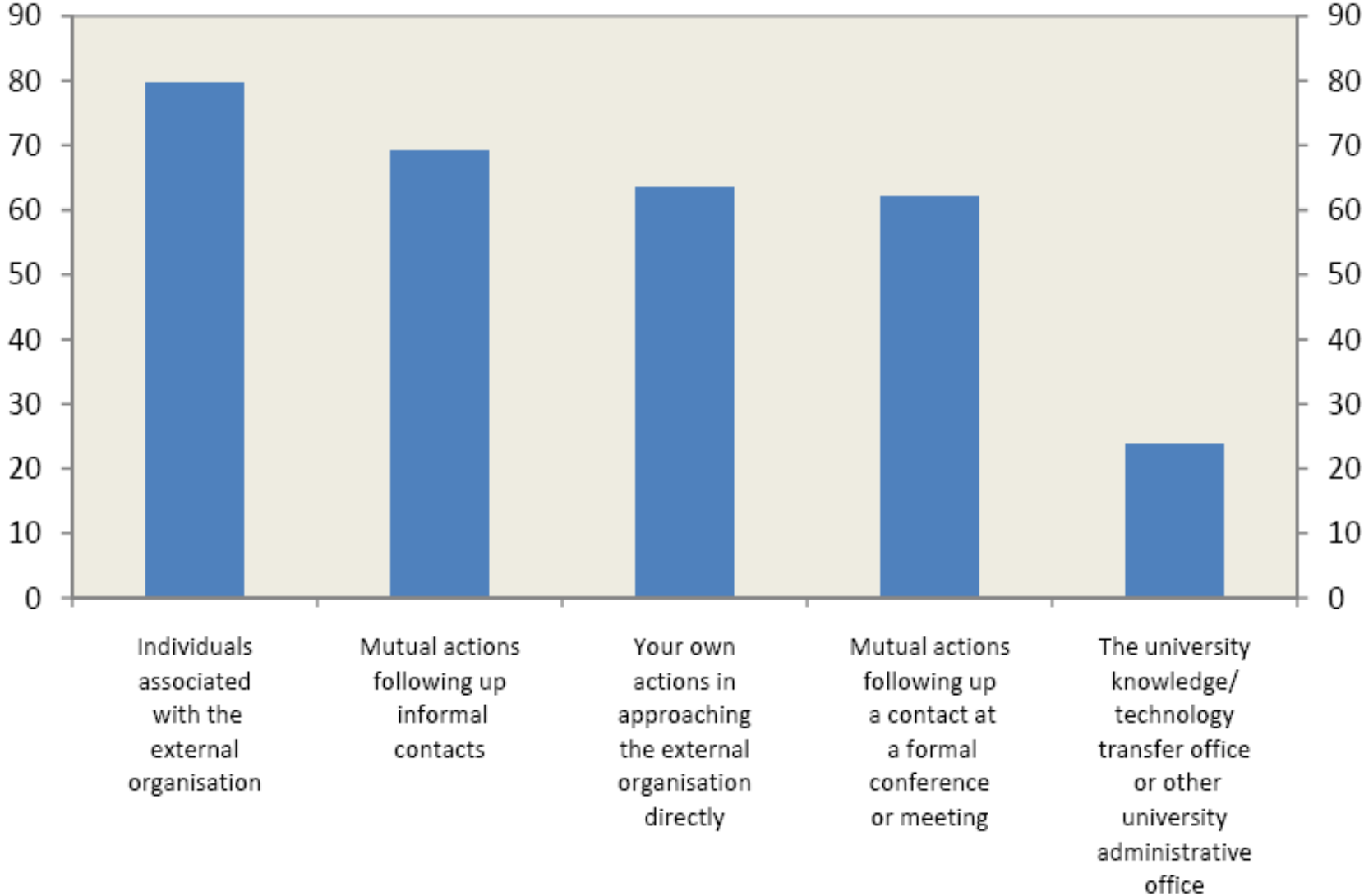
Professional Development courses

- Continuing Professional Development (CPD)
 - High volume
- Executive Education
 - Bespoke for client
 - Lead in to other relationships

Underpinning agreements

- MTAs
- CDAs
- Options
- Licences
- Investment agreements
- Service level agreements
- Research Collaboration agreements
- Clinical trials agreements
- Consultancy

Exhibit 19 Ways in which external activities were initiated (% of respondents)



Negotiating

- Develop a personal relationship
- Meet face-to-face to discuss the key aspects of the partnership
- Follow up with a Memorandum of Understanding
- Check consensus at this stage **BEFORE** drafting a written agreement

For Western Audience

"Before everything else, getting ready is the secret of success"

Henry Ford

For Japanese Audience?

- Don't prepare too much
 - "The best is the enemy of the good"
- Keep dialogue going
- Don't worry about being polite

Managing the relationship

- Prime contact at each location
- Regular reports to track progress (email good for this!)
- Regular tele- (video-) conference
- Address problems early
- Meet face-to-face as often as possible (conferences?)
- Celebrate and publicise success!

A few examples

Toshiba
Hitachi

Kyoto University

Boeing / Sheffield
Siemens / Lincoln

HITACHI
Imagine the Next



Local Networks

- Chambers of Commerce
- Foreign and Commonwealth Office (FCO) Science and Innovation Network (SIN)
- British Council
- JETRO
- PraxisUnico
- The Cambridge Network

International Conferences

- The best networks - and the worst!
- "Small is beautiful"
- For big conferences:
 - Target your interest
 - Set up meetings in advance
 - Use your friends to introduce you
 - The meals may be more useful than the lectures
 - Don't stick together with your colleagues (but check back regularly)

When things go wrong

- Talk!
- Meet
- Use an intermediary to check if there is a communication problem
- Go back to first principles ("Why are we doing this?")



What is Intellectual Property?

- Intangible work of the mind or intellect
- Not
 - Real property - land
 - Personal property - book

Purpose of Intellectual Property Rights (IPR)

To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries

Intellectual Property Rights (IPR)

- Trademarks
- Copyright
- Designs
- Patents
- (Other)
- (Trade secrets)

Trade Marks

Words and logos that distinguish goods and services in the marketplace





Microsoft®

Disney



Trade marks

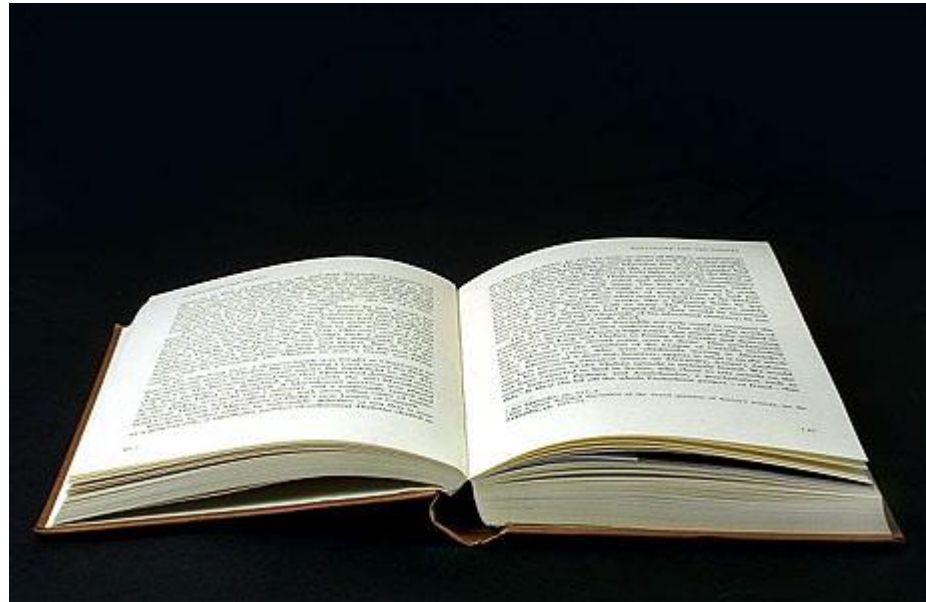
- Unregistered
 - Free
 - distinctive
 - Passing off

- Registered
 - An asset
 - No need for novelty
 - Some limitations
 - £200 in England
 - Renewable



Copyright

An automatic right that applies when the work is fixed - written or recorded in some way



Copyright complicated in the digital age

- Napster
- Spotify
- Etc.
- Copyright **DOES** apply to the internet
- May be registrable, but not required

Designs

- Protect the appearance of a product/logo, from the shape of an aeroplane to a fashion item.
- Can renew every 5 years for a total of 25 years



Patents

(12) **United States Patent
Gardner**

(10) **Patent No.: US 7,290,627 B1**
(45) **Date of Patent: Nov. 6, 2007**

(54) **EXTENDED RANGE MOTOR VEHICLE
HAVING AMBIENT POLLUTANT
PROCESSING**

(76)

Inventor: Conrad Oliver Gardner , 22905 108th Ave. W., Edmonds, WA (US) 98020
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **08/896,514**

(22) Filed: **Jun. 23, 1997**

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/273,114, filed on Jul. 7, 1994, now abandoned, which is a continuation-in-part of application No. 08/140,507, filed on Oct. 25, 1993, now Pat. No. 5,346,031, which is a continuation of application No. 07/867,412, filed on Apr. 13, 1992, now Pat. No. 5,301,764.

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4,021,677 A *	5/1977	Rosen	290/40 R
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Primary Examiner—Lesley D. Morris

Assistant Examiner—Daniel Yeagley

(74) <i>Attorney, Agent, or Firm</i> —Conrad O. Gardner

Patents are a deal ...

- Between the state and the inventor
- 20 years of monopoly, in return for
- Full disclosure of the invention
- Protection of the law for the inventor

Patents must be ...

- Novel
- Non-obvious - to person skilled in the art
- Capable of industrial application

Novelty

- NO prior disclosure (some exceptions if Grace Period)
- Means written publication, talk or presentation, non-confidential conversation WITH ANYONE!
- So use CDA/NDA (confidential disclosure agreement)
- (SOS is OK!)

Patents must not be ...

- a scientific or mathematical discovery, theory or method
- a literary, dramatic, musical or artistic work
- a way of performing a mental act, playing a game or doing business
- the presentation of information, or some computer programs
- an animal or plant variety
- a method of medical treatment or diagnosis
- against public policy or morality.

How can your TTO help you?

- Provide expert advice
- Talk through options with you.
- Identify IP and ways of protecting it
- Help you with valuation of your IP
- Introduce you to companies
- Negotiate with companies on your behalf

Scientist or Businessman??



How much does a patent cost?

- "Getting even a simple patent approved -- a process known as 'prosecuting' the patent application -- can cost up to \$100,000 or more for worldwide rights..."

Jeffrey Labovitz, acting director, UCSF,

- "About 97 percent of patents generate less revenue than the patent costs."

Andy Gibbs, CEO of PatentCafe.com Inc.

But that is only the beginning!

- "An average patent case will cost between \$3 million and \$10 million, and take two to three years to litigate."

Sylvia Hsieh

Questions to consider

- Is the information or product proper subject matter for a patent?
- What is the commercially valuable life of the information or product?
- How susceptible is the information or product to "reverse engineering" or independent discovery?
- Is the information or product sufficiently novel to warrant a patent?
- Can you afford the cost of obtaining a patent?
- Would you be able to afford the costs of enforcing a patent, if it issues?

How did I get interested in IP?

- Academic researcher MRC
- Interested in applications of new medical research technology
- Made invention
- Happy at first when MRC said "Not patentable"
- Got worried!
- Filed scientific manuscript

My first patent

United States Patent [19]

Secher et al.

[11]

4,423,147

[45]

Dec. 27, 1983

[54] **MONOCLONAL ANTIBODY TO INTERFERON- α**

[76] **Inventors:** David S. Secher, 2 Nightingale Ave., Cambridge, England, CB1 4SQ;
Derek C. Burke, 41 Portland St., Leamington Spa, Warwickshire, England, CV32 5EY

[21] **Appl. No.:** 333,856

[22] **PCT Filed:** Apr. 13, 1981

[86] **PCT No.:** PCT/GB81/00067

§ 371 **Date:** Dec. 10, 1981

§ 102(e) **Date:** Dec. 10, 1981

[87] **PCT Pub. No.:** WO81/02899

PCT Pub. Date: Oct. 15, 1981

[30] **Foreign Application Priority Data**

Apr. 11, 1980 [GB] United Kingdom 8012096

[51] **Int. Cl.³** G01N 33/54; G01N 33/68; C12Q 1/00

[52] **U.S. Cl.** 435/68; 435/7; 435/172; 435/811; 436/518; 436/536; 436/178;

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Primary Examiner—Benjamin R. Padgett

Assistant Examiner—M. Moskowitz

Attorney, Agent, or Firm—Cushman, Darby & Cushman

[57]

ABSTRACT

A monoclonal antibody is described characterized by its specificity to interferon- α (leukocyte interferon). Preferably the antibody has specificity to human interferon-

Learn from your mistakes

Embrace failure

What is your business plan?

- How get external finance?
- Sell your patent? (Assign)
- License your patent? To whom?
- Sell your company?
- How will you use the legal protection of a patent?

Hauser Forum, Cambridge - PraxisUnico HQ



About PraxisUnico

- **PraxisUnico** encourages innovation and acts as a voice for the research commercialisation profession, facilitating the interaction between the public sector research base, business and government

About PraxisUnico

- **PraxisUnico** is led by a volunteer advisory board of technology transfer directors and professionals

Feedback from India - 2011

"It was an incredible experience"

H K Mittal, Secretary,
Technology Development
Board (TDB)



Membership statistics

- 111 universities and public sector research establishments
- 46 firms of lawyers, patent agents, venture capitalists and other professionals
- 2600 individuals who are responsible for promoting and licensing the intellectual property arising from academic research
- More than 97% of UK university research funding is spent in PraxisUnico member institutions

PraxisUnico training

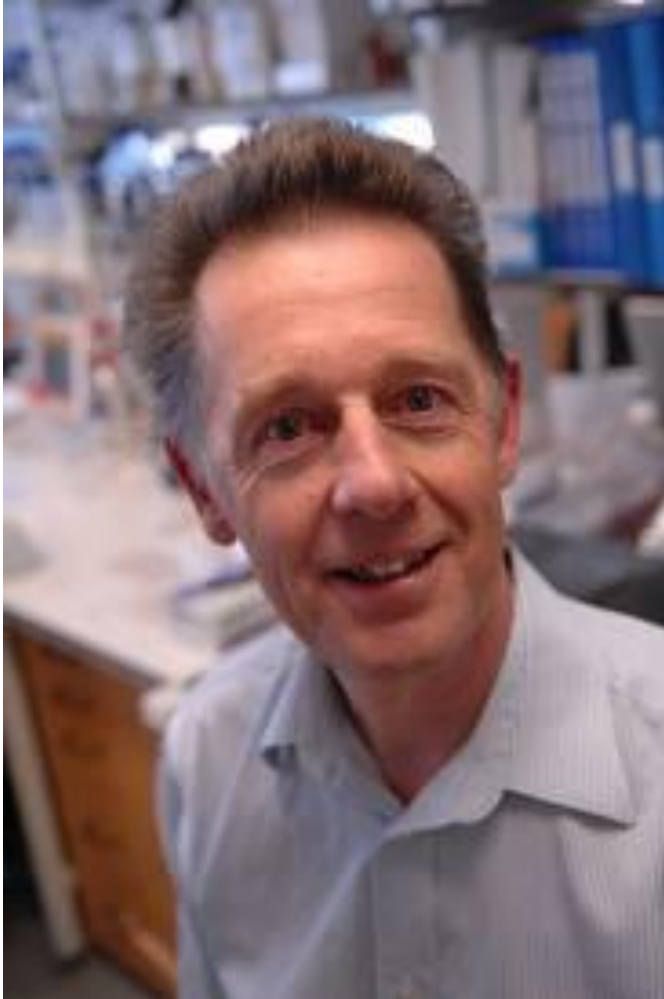
PraxisUnico has trained over 2300 commercialisation professionals have attended one, or more, PraxisUnico course, in the UK and overseas including:

- Republic of Ireland, Australia, Sweden, South Africa, India and Japan

How to be a successful academic entrepreneur?

- Either:
 - Work on applied science
 - Develop relations with industry
- Or:
 - Work on fundamental science
 - Be alert to unexpected applications

Professor Chris Lowe



- Affinity chromatography
- Biosensors
- 6 spin-out companies:
 - Affinity Sensors
 - Purely Proteins
 - Cambridge Sensors
 - ProMetic Biosciences
 - Smart Holograms

Sir Gregory Winter

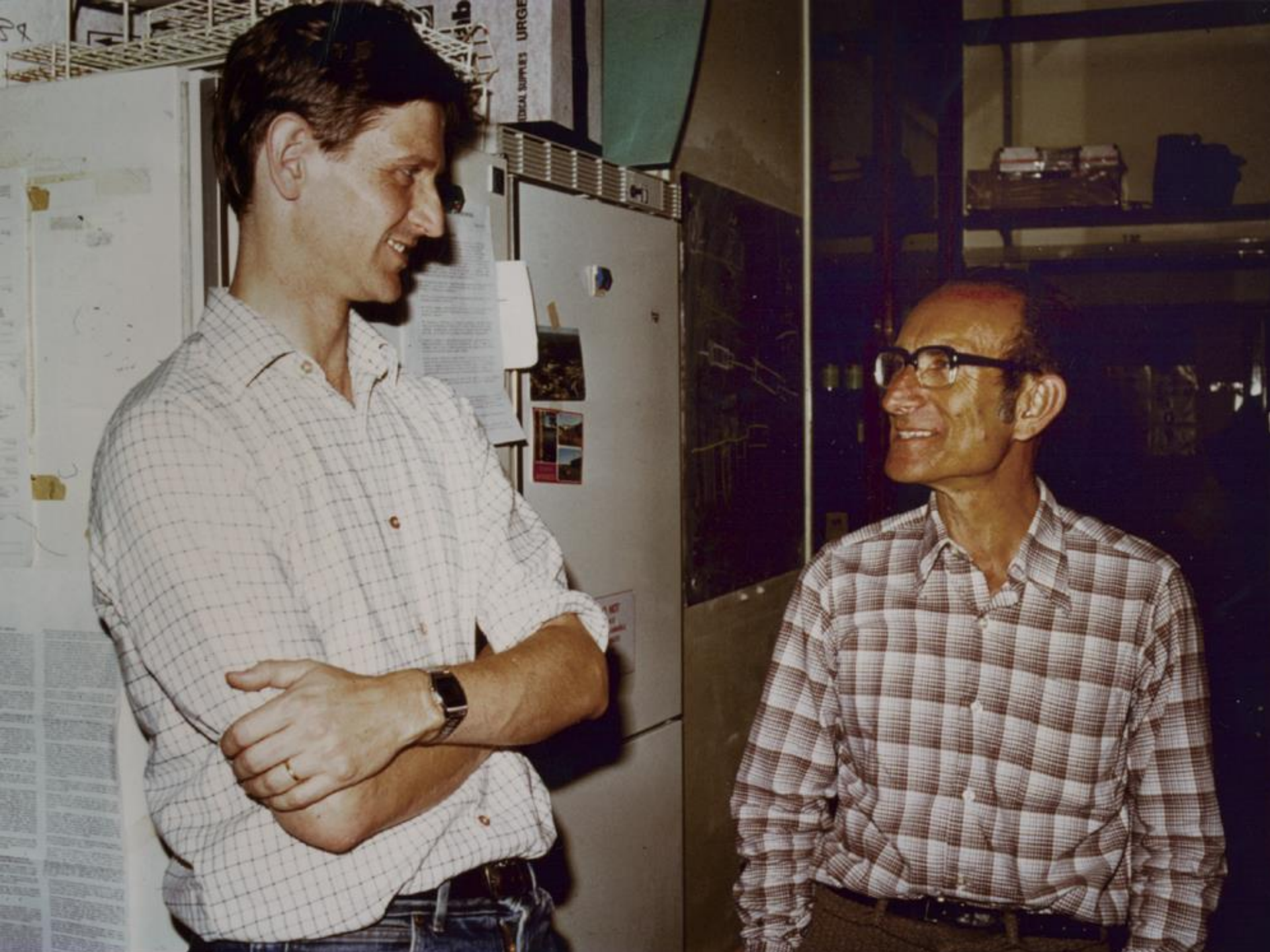


- "How can I develop new technology to solve major problems"
- Spinouts
 - CAT (AstraZeneca)
 - Domantis (GSK)
 - Bicycle Therapeutics

Sir Richard Friend



- Plastic electronics
- Flexible displays
- Spinouts
 - CDT
 - Plastic Logic



Dr Cesar Milstein



- Not interested in business
- Made a fundamental, Nobel Prize winning discovery
- The industry that resulted is worth billions

Sources of Information

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- www.uspto.gov
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- www.iphandbook.org

Thank you!

Questions?

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