

Dealing with IP in the School of Life Sciences

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- **Hopefully you will have learned something useful today that will be of use in your future careers**
- **IP is important and its not just us KT people who are saying this!**
- **But excellence in research comes first**
- **The KT team's role is to help you turn that excellence into something with even more value**
 - **To you**
 - **To the School**
 - **To the University**
 - **To the world outside**
- **So what should we be doing at Bradford?**

If you think you may have IP..

- **Please contact Kevin Adams or Lynsey Grieveson in the RKTS office, before disclosing the invention to others**
- **The KT team will assess and protect the IP as appropriate**
- **This can include**
 - **If not patentable - alternatives**
 - **Investigating the commercial potential of the invention**
 - **Explore freedom to operate issues**
 - **Help identify potential synergies with other researchers,**
 - **Look into further funding options**
 - **Assessing companies to contact**

Know How is a form of IP

- **Expertise in a particular subject**
- **Trade secrets, formulae, customer contacts, recipes**
- **Confidential Information (may be protected by a CDA)**
- **Basically anything useful protected by keeping it secret in some way**
- **May be released for a price or sold repeatedly as a service (e.g. BBB)**

Confidentiality - Success Stories



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Company



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Company

Filing patents

- Filing date is called priority date, when protection originates from
- Further 12 months before you have to make decisions on international filing and any amendments
- Chance to do more research and improve the patent (and subsequent publication!)
- Early identification is therefore important
- Once published will constitute as prior art for further developments

Patent Searching

- Essential to uncover prior art and freedom to operate
- As a first option can do own search, e.g. Esp@cenet
- However
 - Patents are written in legalese and tend to be tedious, boring and difficult to understand
 - You are likely to miss relevant patents
 - The KT team will do it all again anyway!!
 - Let a professional do it for you!
- Need to look at scientific papers and other forms of publication too – academic may be best person for this.

Patent Filing

- Time to progress from initial filing to grant/refusal 3-5 years
- Costs can mount up quite rapidly
- Initial application approx £1-3k
- Development and maintenance £80-100k over 20 years
- University has a budget but it is not limitless
- Only worth filing if patents show a potential return on investment (see Lisa's examples!)

Publish and Be Damned!

So what constitutes a publication?

- Learned papers
- Abstracts
- Theses
- Internet
- Poster displays
- Exhibitions
- Oral and casual disclosures
- Confidential disclosure to many people!

Patent v publication conflict

- Inevitably there is a conflict between academic desire to publish and need to protect IP
- Minimisation of conflict through
 - Early identification and filing of IP
 - Recognition of inventors and value to School/UoB, e.g. In RAE
 - Patents count as publications – get 2 for the price of 1
 - Understanding value to funding bodies
 - Rewards to academic inventors

Patent v publication conflict

- Potential rewards to inventors can be substantial
 - In many Universities it is a positive help in career progression
 - Can provide more resources, e.g. through Industrial Collaborations – equipment, studentships
 - More research funding options
 - Direct financial rewards include share in revenues from
 - licensing,
 - assignment,
 - sale
 - spin-out

IP Routes to Commercialise

- Licensing
 - Exclusive and non-exclusive
 - Allow use of IP for fee and/or % of royalty
- Assignment
 - Transfers ownership
 - Up-front fee and/or royalty agreement
- Sale
 - Total transfer of ownership
 - One off payment
- Spin-out
 - Company formation – will generally include assignment
 - Requires investment but potential big gains

UoB Licence Revenue Sharing Scheme

Net Revenue *(£k)	Inventor (%)	School (%)	University (%)	Venture Fund (%)
0 - 5	100	0	0	0
5 - 50	60	15	10	15
50 - 500	45	25	10	20
>500	35	25	10	30

*After direct costs, e.g. patent filing, market research, legal costs.

Revenue is cumulative per invention.

First £5k received distributed directly to inventors without deduction of any costs.

UK vs. US

- First to invent NOT first to file counts
- May have to prove when the invention was made
- Two important criteria to US law:
- Conception and reduction to practice
- Have to provide evidence for both of these aspects and this is normally in the form of a laboratory notebook
- Witness to recordings in notebook essential

Laboratory Notebook

- Use a bound book with numbered pages that cannot be removed or added to
- All writing in ink (no pencil)
- Date clearly and state every part of experiment in a factual manner
- May be necessary to draw certain parts and if results are printed out they should be glued and sign over the join
- Include any formulae and calculations as necessary

Laboratory Notebook

- Include facts not opinions in the book
- Get it counter-signed regularly by someone who can understand it
- Any errors – delete with a line through them, original still legible, sign and date
- NEVER EVER use correcting fluid
- Keep the book in a safe place – lockable cupboard preferably
- Any supporting electronic data should be backed up regularly

Laboratory Notebook

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Tris + Imidazole in Lu+H₂O₂+PIP reaction Oct. 15, 1993

I Reagents

- Lu+H₂O₂ in Tris buffer (0.1M, pH 8.6)
- HRP 1mg/ml stock and 1:50,000 dilution in dist H₂O
- PIP 20mM in DMSO stock 1:10 dilution in dist H₂O
- Imidazole 800 mM, PH 8.5

II Procedure

	Lu+H ₂ O ₂	PIP	Imidazole	HRP	dH ₂ O	Tris mM	Imidazole mM
1	100ul	—	—	—	40ul	71.4	0
2	100 "	—	—	10ul	30 "	"	0
3	100 "	10ul	—	—	30 "	"	0
4	100 "	10 "	—	10ul	20 "	"	0
5	100 "	10 "	5ul	—	25 "	"	28.6
6	100 "	10 "	5ul	10ul	15 "	"	28.6
7	100 "	10 "	10ul	—	20 "	"	57.1
8	100 "	10 "	10 "	10ul	10 "	"	57.1
9	100 "	10 "	15ul	—	15 "	"	85.7
10	100 "	10 "	15ul	10ul	5 "	"	85.7
11	100 "	10 "	20ul	—	10 "	"	114.3
12	100 "	10 "	20 "	10ul	—	"	114.3

III Results

	1	2	3	4	5	6	7	8	9	10	11	12	T = 0
B	0.94	14.92	6.07	4.01	3.08	2.77							
S	1.65	0.63	0.45	0.84	0.68	0.74							
S/B	1.8	25.7	6.4	4.8	4.5	8.7							

Robert A. Stephens,
Oct 15, 1993

Witnessed, Read + Understood
Warren B. Jones
October 18, 1993

Laboratory Notebook

- Looking into trial supply of Laboratory Notebooks from KT budget
- An alternative is the use of electronic notebooks – now gaining more popularity
- Particularly useful for chemistry based researchers who use lots of structural diagrams and chemical pathways
- ICT is looking at introducing this system – again may be something we could roll out in other areas of the School of Life Sciences

In the ideal world

- Use laboratory notebooks
- Disclosure to IP manager/anyone on KT team
- Conduct any external discussions under a Confidential Disclosure Agreement (CDA)
- Get appropriate IP protection put in place
- Ensure Freedom To Operate
- Improve patents in first 12 months
- Assess market and route to commercialise
- Licence agreements to provide reward to both the UoB and Inventors

What can the KT group do for you?

- KT Team can provide
 - Appropriate forms for internal disclosure of inventions (we'll even fill most of it in for you!)
 - Confidentiality agreements
 - Patent agents to do the searches and filings
 - Cash to do it
 - Help writing grants to support R&D for commercialisation (just done one for £530K)

What can the KT group do for you?

- KT Team can provide
 - Market research
 - Marketing your expertise
 - Help with drawing up contracts
 - FECing it!
 - And some nice labs to set up your spin-out company in....

Summary

- Inventions and other forms of IP arise from all areas of research
- IP if protected and used properly can be used to support further research
- IP if exploited correctly, can generate both financial and non financial rewards
- **Encourage you all to consider IP (especially before publishing)**
- **Please come and ask if you are not sure**

Contact

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