



DANISH PATENT AND TRADEMARK OFFICE

## Training systems for Commercializing scientific research and developments (CSR D)

IP awareness  
Supporting the technology transfer

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## DANISH PATENT AND TRADEMARK OFFICE

### Agenda

- Technology Transfer Offices (TTO)
- IP awareness & IP culture
- Raising IP awareness
  - IP days at the university
  - Lab pre diagnosis by NPOs
  - IP search session between Inventor/TTO and NPO
  - Pre-screening of inventions from a patentability point of view
- IP protection
  - Choose and capitalize on the right invention
  - Provisional patent applications



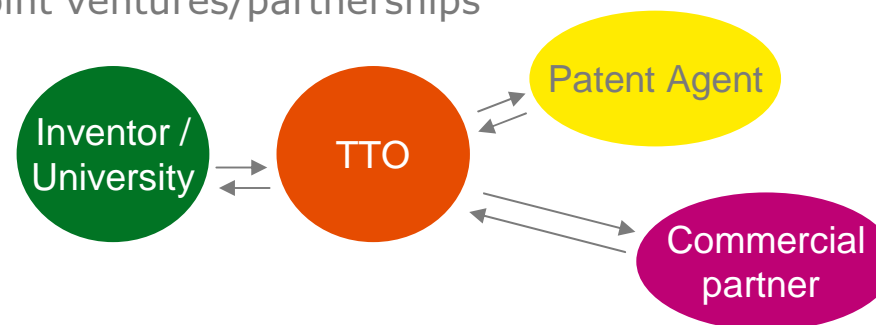
## Technology Transfer Offices (TTO) I

- Role of TTOs:

### Helping inventors understand business and IP processes

- Administrative (IP management)
- Technical (consulting, strategic vision)
- Business role
  - licensing or sale agreements
  - setting up joint ventures/partnerships

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## Technology Transfer Offices (TTO)

- TTO can be classified according to
  - their priority function
    - IPRs focus
    - Commercialization focus
    - Collaborative research focus
  - their status
    - University department (more IPRs focused)
    - Business company (more commercialization focused)





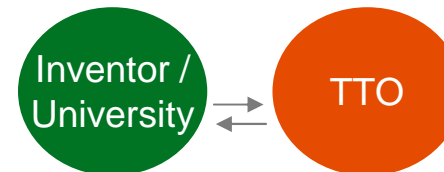
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### General IP awareness

#### The conflict of Patent >< Academic Publication

- Patenting or publishing is always a question in academic spheres
- Scientific publications are carrier promoting/ promotes the scientific carrier

- TTO problem:



- Convince students and researchers of the importance of patenting
- Combine the researchers interests to publish and the need to protect inventions for potential technology transfer

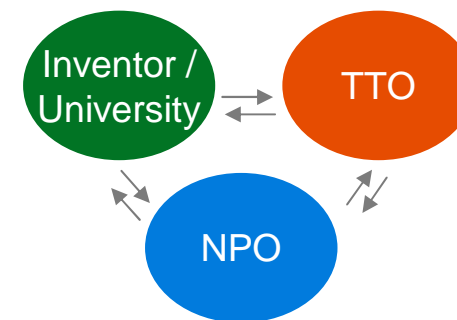


## IP culture means IP awareness

IP awareness is a starting point for a development of IP culture among students and researchers at the university

- IP education is essential for de-mystification of IP issues
- Regular methods for raising IP awareness in public research institutions and universities:
- Integration of IP in university education on
  - Risks of publishing data
  - Importance of patent protection
  - Patent systems

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### General IP awareness

- Early IP awareness:
  - Competitions for High school students / University students

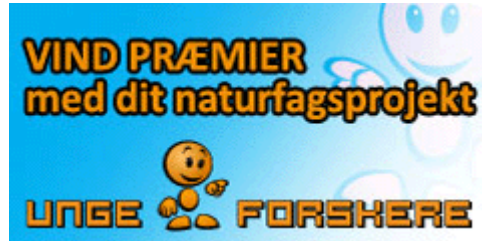
Example from DK:

Young Scientists and inventors (pre and high school students)  
University competitions (Best Business plan, DTU)

- Initiatives rewarding/encouraging innovations
  - National level: "National Inventor Award"
  - EPO organise "European Inventor Award"



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Source: <http://www.formidling.dk/sw44350.asp>



## McKinsey Cup Winners Best Business plan, DTU 2010



### McKinsey & Company VC Competition - Price Winners, DTU: Best business plan 2010

From McKinsey & Company: Left wing: Hans Henrik Knudsen, PhD, M.Sc.

#### DTU students from left to right:

2. prize winners: safe Central venous catheter: Jonas Falck Frederiksen, Rasmus Ljungmann Pedersen, Allan Johnsen, Magnus Edvard Frederiksen

1. prize winners: Green Pavillion: Hildur Arna Magnúsdóttir, Pia Michelsen, Line Kagenow Svenstrup, Agnes Asvaldsdóttir

3. prize winners: Body Posture Monitoring System: Vladimir Bakalov, Sergio Gutierrez Lazaro-Carrasco, Cristian Pandeale, Mihaela Borta. Not present: Bogdan Năcută

Source: <http://www.entrepreneur.dk/>

**EUROPEAN  
INVENTOR  
AWARD 2011**  
PRESS  
INFORMATION



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Source: <http://www.dallenergy.com/Awards.39.aspx>

Danish Prime Minister Lars Løkke's closing speech before the Danish Parliament's summer holiday:

*... "In the city of Bogense 6,000 people get their heating from a special biomass oven. They are warmed by that. And I am warmed by the fact that the inventor of the oven has been awarded the European Patent Award."*

*Winner: Jens Dall Bentzen*



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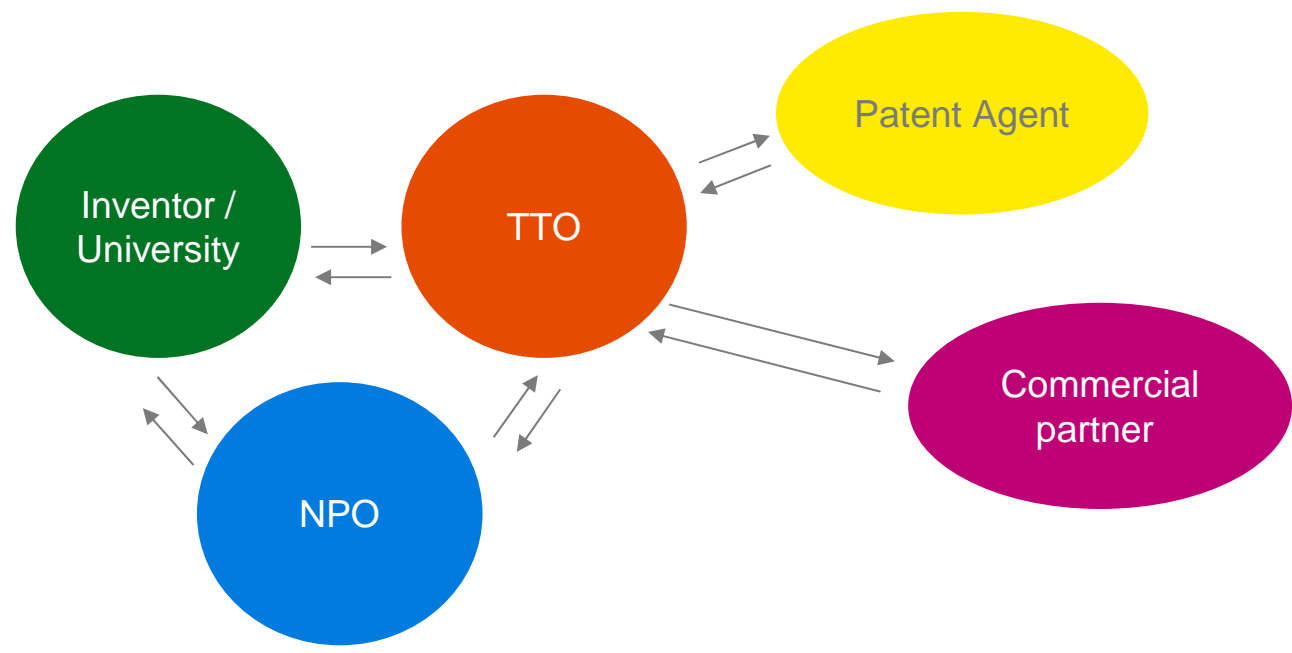
### General IP awareness

- Rewarding inventors those who want to invest more time in making their result outcome transferable in a market economy context
  - Economic reward for the inventor at time of filing patent application
  - Paying inventors upon the royalty returns (often long term oriented)
- Elaboration of a new carrier promoting indicator allowing researcher community to be evaluated also on the innovation side (accepted by society)



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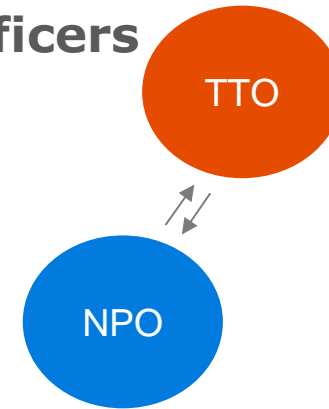
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## Education of Technology transfer officers

- Training in the IP system and Patent strategies
  - The IP systems
    - Patent, Trademark, Design?
    - When & what?
  - Patent systems
    - National, Regional, International patent filling
  - Strategies
    - IP costs
    - Which "route" to take when money is scarce?
  - Specific Patent related issues
    - Software, Second medical use, Lack of unity..



Capacitating prior to contact to patent agent



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## **Alternative methods for raising IP awareness** IP days at the university I

Example from Portugal

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- NPO arranges awareness and training sessions for students and/or researchers
- Faculties of relevance
  - Science/Engineering
  - Economics/Business
  - Law
- Open to a wide audience
- Topics are selected by the TTO according to identified needs within the academia



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## **Alternative methods for raising IP awareness** IP days at the university II

- One-to-one training of researchers/students
  - sessions concerning the general national IP status
  - the University's specific procedures/needs
    - Why is IP important in research?
    - Drafting claims
    - Patents in biotechnology
    - Confidentiality, secret know-how and patents
  
- Open to one or a few researchers/students



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## **Alternative methods for raising IP awareness**

### Lab pre diagnosis by NPOs I

Example from France

- Method of approaching IP
  - For each situation
  - Drawing on the expertise of the researcher/NPO (not a repetitive type questionnaire)
  
- Evaluation of the issues of IP in the specific research team
  - Literature searches
  - Licensing possibilities





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### **Alternative methods for raising IP awareness**

#### Lab pre diagnosis by NPOs II

##### Result:

- Helps TTO to implement an IP policy
- Allows the TTO to identify courses of action
  
- Helps the laboratory director to implement an IP policy
- Identifies the skills within the laboratory for the implementation

##### Cost:

- Pre-diagnosis amounts to € 1 500 which is funded by the NPO
- The service is totally free for the university



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**Alternative methods for raising IP awareness**  
IP search session between Inventor/TTO and NPO I

Example from Denmark

Method:

- Invention disclosure form Inventor/TTO
  - Detailed description of the invention
  - Keywords /Synonyms / Search terms
  - Areas of use/Related uses
  - Prior art (if known by inventor)
  - Competitors / collaborators

## Invention Disclosure Form

### 1. Title of invention

### 2. Description of the invention

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• What is the invention?</li> <li>• Which problems does the invention solve?</li> <li>• Who are the end-users?</li> <li>• Are there other solutions/treatment methods for the problem?</li> </ul> | <ul style="list-style-type: none"> <li>• Are there other possible areas of application for the invention?</li> <li>• Key aspects of the invention that make it unique and generate benefits.</li> <li>• Possible problems/barriers to the project's development.</li> </ul> |
|--|---|

**You are very welcome to attach an extended electronic version.**

### 3. Developmental stages

Describe the invention's current developmental stage (theoretical concept, *in vitro* data, *in vivo* data, clinical data, proof-of-concept, prototype, etc.) Elaborate on your response and attach data for support.

### 4. Documentation of the invention

When did you make the invention?

Please describe where and how the invention is documented:			
<input type="checkbox"/> Laboratory records	<input type="checkbox"/> Computer files	<input type="checkbox"/> Photographs, graphs, other visualisations	
<input type="checkbox"/> Correspondence			
<input type="checkbox"/> No documentation other than this report form			
<input type="checkbox"/> Other documentation:			

### 5. Publication

Please state below whether there is a description of the invention in documents that in any way are in a published form. In case any form of publication has been made, please include date of publication, which media it is and where to retrieve the information (This could give implications for the possibility of patenting the invention.)

### 5. Grants and cooperation

Please indicate if the research has been financed through external sources and if the invention is made as part of a research collaboration.

Has/have the inventor(s) applied for or received research grants related to the invention?

Yes  No

If yes, please specify:

Is the invention part of research collaboration? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, is the collaboration regulated by agreements that describe and clarify rights issues regarding the invention or parts thereof? <input type="checkbox"/> Yes <input type="checkbox"/> No <b>It is very important to attach all relevant documentation</b>		
<b>6. Use of information, materials, equipment, etc. from external parties</b>		
Is the invention wholly or partially based on information, materials, equipment, software, etc. from other individuals/organisations outside of The Capital Region of Denmark's hospitals: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please tick all of the relevant boxes below:		
<input type="checkbox"/> Information	<input type="checkbox"/> Materials	<input type="checkbox"/> Software
Description:	Type of material:	Type of software:
Is this information: <input type="checkbox"/> Publically available <input type="checkbox"/> Achieved as part of a consultancy service provided, scientific advisory activities or other relation to a company <b>Describe the conditions regarding rights:</b>	<input type="checkbox"/> Biological material <input type="checkbox"/> Equipment <input type="checkbox"/> Animal <input type="checkbox"/> Unit <input type="checkbox"/> Drug or chemical <input type="checkbox"/> Other:  Were the materials used: <input type="checkbox"/> Purchased <input type="checkbox"/> Acquired as a gift or part of an informal agreement. <b>Describe the conditions regarding rights:</b>	<input type="checkbox"/> Open source <input type="checkbox"/> Proprietary <input type="checkbox"/> Other: <b>Describe the conditions regarding rights:</b>  Was the software used: <input type="checkbox"/> Purchased <input type="checkbox"/> Acquired as a gift or part of an informal agreement <b>Describe the conditions regarding rights:</b>
	<input type="checkbox"/> Acquired under an MTA (Material Transfer Agreement) or other form of contract <b>Describe the conditions regarding rights:</b>	<input type="checkbox"/> Acquired as part of a Software Agreement or other form of contract <b>Describe the conditions regarding rights:</b>
<b>IMPORTANT: Please attach a copy of all relevant contracts and any other documentation regarding the existence of informal agreements</b>		
<b>7. Literature and patent application</b>		
Literature		
1. Describe relevant keywords regarding the invention, in English:		
2. List other leading researchers (industrial and academic) in the field of the invention:		
3. If possible, attach own articles, abstracts, and reviews that are relevant to the invention, either as background for the invention or publication of it.		
4. If possible, attach any articles, abstracts, and reviews by other parties that are relevant to the invention and other information that you feel may be relevant to an assessment of the invention.		
<b>8. Inventors</b>		
Contact information, work		Contact information, private (optional)
<b>Inventor 1:</b>		
Name:		Address:
Title:		
Connection to The Capital Region of Denmark's hospitals:		e-mail:
<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Status:		Telephone, private:
<input type="checkbox"/> Permanent employee	<input type="checkbox"/> Post doc	

**Signature(s)**

### Declaration of secrecy

It is of utmost importance that there is no publication of the invention in any way before submitting a patent application. All of those involved have a duty of secrecy until the time of such application submission and as the inventor you must complete the declaration of secrecy that is a part of this report form. After submitting a patent application, you may of course publish your invention in any way.

By signing this document, the inventor(s) and department management pledge to refrain from publishing or disclosing, to any third party, information regarding the invention (as described in this document), or information that may be seen as related to the invention, until the patent application or utility model application regarding the invention has been submitted, unless Tectra has granted prior permission to do so.

In case Tectra notifies the inventor(s) in writing that, the hospital or psychiatry administration does not wish to assume the invention in accordance with the Danish Law on inventions made at public research institutions, this declaration of secrecy is void.

**Signature:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_  
(dd/mm/yy)

**Date:** \_\_\_\_\_  
(dd/mm/yy)

The information provided in section 12 is correct

The information provided in section 12 is correct

**Department manager**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_  
(dd/mm/yy)

All of the persons listed in section 8 must sign above. Please send the signed original form and an electronic copy of the completed form.

**For internal use by Tectra:**

Date received:

Signed on behalf of Tectra



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**Alternative methods for raising IP awareness**

IP search session between Inventor/TTO and NPO II

Identification of prior art relating to the invention;

- invite inventor/TTO to an introductory search together with a experienced NPO examiner
- introduce the search tools
- discuss the invention with the inventor
- conduct the search in patent databases
- evaluate the identified prior art together with the inventor



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### **Alternative methods for raising IP awareness** IP search session between Inventor/TTO and NPO III

Result:

- Qualify invention – relevant for final decision  
Patent > < Not patent  
Choose the right invention to commercialise
- Educate inventors and TTOs in patent protection issues
- Capacitating invention prior to contact to patent agent and commercial partner
- Cost and delivery:
  - Search result within few days
  - 400 Euro (paid by the TTO)



## DANISH PATENT AND TRADEMARK OFFICE

### Alternative methods for raising IP awareness

#### Pre-screening of inventions from a patentability point of view

Example from Hungary

- Interview of the TTO staff with the inventor (Structured) in order to quick screen patentability aspects (Help from NPO)
    - Basic screening of factors that disqualify patenting
    - Process and map key problem areas at a patent filing
    - Simplified examination of patentability (novelty, inventive step and industrial applicability)
- =>
- Support the invention disclosure with information
  - Support the patent filing process with information





## DANISH PATENT AND TRADEMARK OFFICE

### **IP protection**

Choose and capitalize on the right invention

TTOs have to select among the invention disclosures received

- To choose on which a TTO is going to invest (time, money on IP)
  - it is important to know
  - the state of the art
  - the emerging fields of technology
  - the competitors
  - find the right patent attorneys



## DANISH PATENT AND TRADEMARK OFFICE

### IP protection

Choose and capitalize on the right invention

Example from Denmark

- Prior art search

Example from Max Planck - Germany

- Local institute/Laboratory pays all expenses for patenting => only very promising and commercialisable inventions are "given in"

Example from Portugal

- Use filling of preliminary patent applications for all inventions (getting early priority date) – selection before publication (18 months) or priority year (12 months)



## Provisional patent applications I

- In some countries "provisional patent applications" are possible
- Interesting for early stage academic inventions,
  - Quick
  - Relatively inexpensive
  - Needs no formalism to declare an invention
  - Rapid and low cost answer to secure inventions (just before a publication or public presentation during a conference)
  - an educational tool for universities to raise IP awareness of their researchers



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## Provisional patent applications II

- First step to protect inventions
- Convince academic inventors of the compatibility of IP procedures with their mission of publishing
- Increase the number of national patent application (converting academic papers into patent applications)

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Thank you for your attention

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