ADVOCATE PROJECT 7th WORKSHOP

'Taking research beyond academia'

Aims and Objectives

This workshop is organised in the framework of the Advocate Project Conference (In Situ Remediation '14). This particular event will present a series of talks and discussions on the following topics:

> introducing early stage researchers to intellectual property rights and commercialisation, the journey of creating a product for commercialisation and the pitfalls of establishing a spin-out company;

> presenting the idea of entrepreneurship and innovation to young researchers, options and ways of how and why one would pursue disruptive innovation and to be an entrepreneur;

> investigating the commercial / industrial / business / NGO / regulatory organisation's point of view on corporate-academic relationships and discussing the aspirations of non-academic organisations of why, when and how they establish relationships with academia;

> discussing the mechanisms and the journey of expert witnessing, as another alternative of applying expertise.

Date 14.00 – 17.30 Thursday, 4th September 2014

(Buffet lunch provided between 13.00 and 14.00)

Venue Queen Elizabeth II Conference Centre

Schedule*

14.00 – 14.05 Introduction (Dr Steve Thornton, Advocate Network Coordinator, UoS, UK)

14.05 – 14.45 IP, commercialisation and spin-out companies (Dr Andy Maiden, UoS, UK)

14.45 – 15.25 Disruptive innovation and innovation management (Dr Ahsan Khan, UoS, UK)

15.30 – 15.50 Break

15.55 – 16.35 The role of corporate-academic relationships (Jörg Frauenstein, UBA, DE)

16.35 – 17.15 Expert witnessing (David Hall, Golder Associates, UK)

17.15 – 17.30 Further Q&A and closing remarks

* For each talk 30 minutes presentation time and 10 minutes Q&A is allocated.

Additional information and notes

Alternative to patenting

Registered Community design (RCD)

https://oami.europa.eu/ohimportal/en/designs-in-the-european-union

Prelude

Dr Andy Maiden, University of Sheffield

Andy Maiden arrived at Sheffield University in 2007, fresh-faced and armed with a shiny new PhD. He was lucky to join in the very early development stages of a new form of microscopy, with the tongue-twisting moniker 'ptychography'. He designed and built the first prototype microscope based on this technique and after patenting his designs through the University research office, he left to become the first employee of Phase Focus Ltd, a spin-out aiming to commercialise this work. Andy returned after a year to a post-doc position at the University, but continued to work closely with Phase Focus and filed several patents that were subsequently purchased by the company. This led to a second foray into the commercial sector when in 2011 he returned to Phase Focus for 2 years, during which time the company made its first microscope sales and grew from 3 to around 15 employees today. In 2013 he obtained his current position as a lecturer in the Electronic Engineering Department at The University of Sheffield.

In his talk Andy will tell the story of these oscillations between industry and academia. He will give his perspective on the pros and cons of the commercialisation process and attempt to shed some light on the murky world of intellectual property.

Dr Ahsan Khan, University of Sheffield

Ahsan works as a Business Development Manager at the Department of Civil and Structural Engineering, University of Sheffield. He has a vast and considerable technological and business experience in the construction industry with a diverse and influential network of industrial collaborators and working relationships with other academic institutions. Prior to joining The University of Sheffield, Ahsan secured funding from the TSB for the development of inter-seasonal storage systems as well as EU funding for building integrated renewable energy technology and the development of next generation thermoelectric devices. Besides his work with the university, Ahsan is an entrepreneur in the private sector.

Ahsan's presentation, 'Innovation: From Lab to Market', investigates challenges of innovation development and market acceptance. This talk will explore the challenges associated with the development of research outputs and the transition to market adoption. The discussion will focus on the likely routes for commercialisation of (i) in situ remediation, (ii) better sampling technologies to determine the effects/severity of contamination and (iii) preventive technologies to avoid contamination and it's spreading in the environment.

Jörg Frauenstein, German Federal Environment Agency

Jörg is the deputy Head of Section of Soil Protection at the German Federal Environment Agency (UBA). For more than 20 years he gained professional experience in contaminated land management, remediation of soil and groundwater, Brownfield development as well as project management, coordinating and conducting national and European research programs and projects. On the national level he represents the

German Environmental ministry in the governmental program “Environmental Aspects on the Reuse of Former Mining Areas” and he is the German representative within "Common Forum", the European Network of Contaminated Land Management.

In this talk, Jörg will discuss examples of his academic collaborations and outcomes arising from such projects. It is essential to ensure an uninterrupted innovation adoption lifecycle. However, there are significant differences between research outcomes and requirements for executable administrative and technical solutions in terms of a legal compliant enforcement. There is also a serious need to overlook and consider important secondary environmental impacts. Moreover there are different levels of interest and maturity in both groups. Better communication, dissemination and a common understanding among academics and administrators might be suitable ingredients, to avoid time consuming and cost-intensive mistakes in adopting scientific approaches, innovations and appropriate techniques.

From personal observations and experiences the talk will discuss related aspects, opportunities, chances as well as limitations in collaboration. We have to pay attention to remaining challenges to bridge the gap between research and administration. A couple of recommendations will be aiming to draw up future perspectives.

David Hall, Golder Associates

What is involved in being called as an Expert Witness?

This presentation, by David Hall of Golder Associates (UK) Ltd, focuses on the situations when you could be called to give expert witness services, the procedures followed in the main arenas (be they criminal law, civil law, public inquiries or contract mediation), what to expect, and how to conduct yourself. David has prepared evidence for a number of criminal cases including the groundwater pollution aspects of the Buncefield Oil Storage Depot explosion in 2005, as well as some major civil/contact cases and numerous public inquiries.

David will look at the responsibilities of an expert, their qualifications, the role they play, the likely work flow of a large case, and some of the procedures involved, illustrated throughout with examples from cases that he has dealt with.

David is a hydrogeologist specialising in groundwater contamination, waste management and contaminated land. He has over 38 years of experience; he is a Chartered Geologist and a past chairman of the Society of Brownfield Risk Assessment.

Inventions and Patents:

Pros and Cons for a Scientist

Mario Schirmer

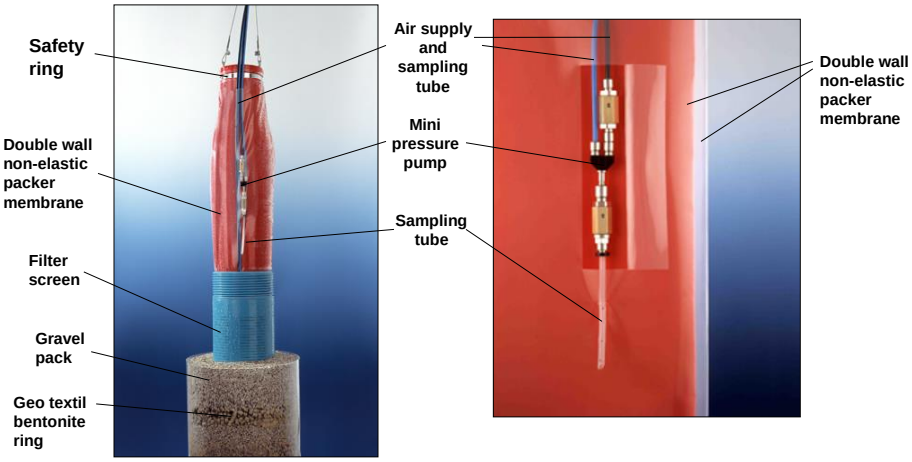
eawag
aquatic research

Invention for depth-specific groundwater sampling using a multi-level-packer-system

eawag
aquatic research

Example: Depth discrete groundwater sampling

The Multilevel-Packersystem (MLPS)

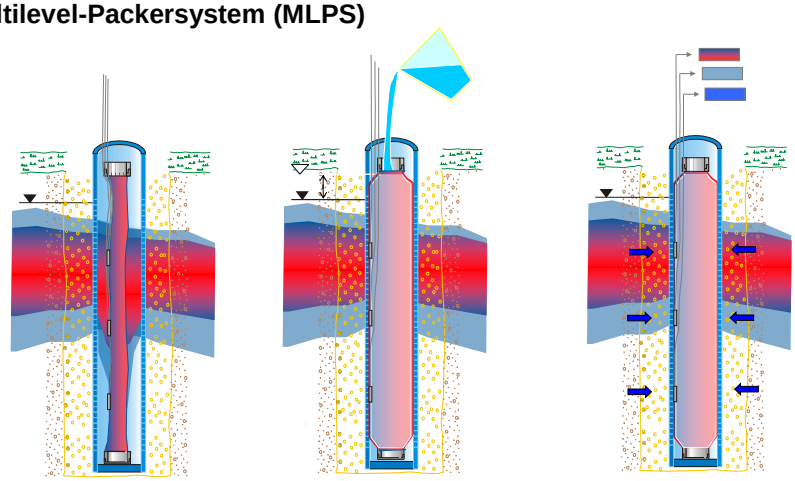


JCH Schirmer et al., 1995; Schirmer et al., 1998: US Patent 5,725,055; IM Weiß

The Multilevel-Packersystem (MLPS)

Example: depth discrete groundwater sampling

Multilevel-Packersystem (MLPS)



JCH Schirmer et al., 1995; Schirmer et al., 1998: US Patent 5,725,055; IM Weiß

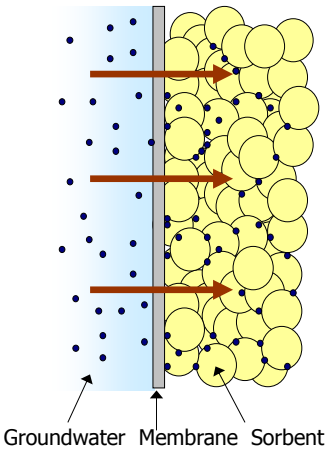
Invention for passive groundwater sampling using the toximeter

eawag aquatic research

Time-integrated passive sampling

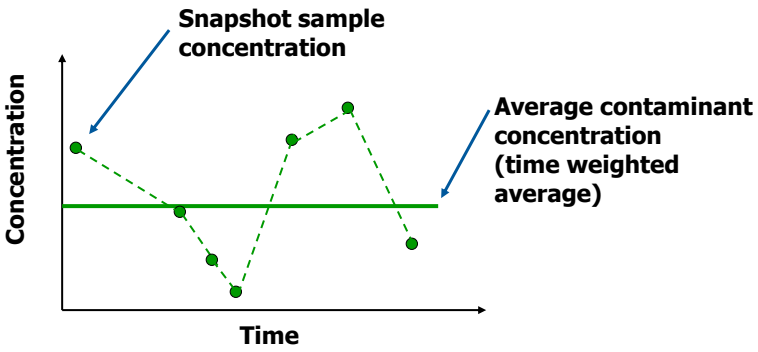
Passive sampler

- enrichment of compounds along a diffusion gradient onto selective sorbents



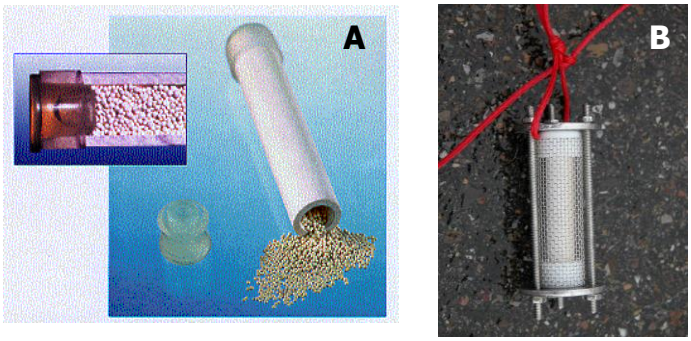
Time-integrated passive sampling

- depending on the capacity of the sorbent samplers can be used as time-integrative samplers



Ceramic Dosimeter

[Grathwohl et al. 1999; Martin et al. 2003]

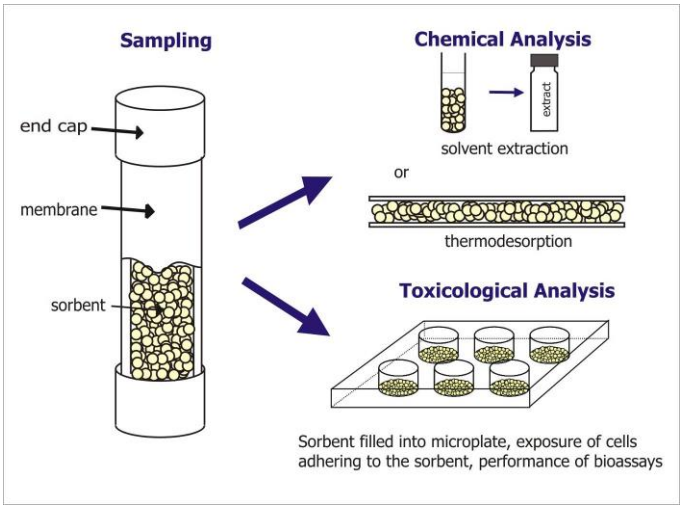


Ceramic tube with sorbent (A) and stainless steel protective cage (B)
(imw, Tübingen, Germany; http://www.im-weiss.de)

Focus up to date: Chemical analysis

- chemical analysis focuses on certain substances
- toxicologically relevant compounds might be overlooked
- toxicological analysis of the samples would be an important complement

Toximeter concept



Inventions and Patents: Pros and Cons for a Scientist

Pros:

- **Patent can be good for your CV: combines science with business**
- **Invention is protected**
- **Companies can sell a protected good (potential company might not be interested if anybody else can also produce it)**
- **You might earn money (very seldom the case)**

Cons:

- **You cannot publish anything about your invention until patent is applied for (not even talk about it at a conference or to colleagues)**
- **Patent application costs money (but perhaps your university / institute is covering some or all of the costs)**

eawag aquatic research

Mario's experience with the two patents

Multilevel-Packersystem (MLPS) [invented 1991]:

- **Great learning experience but very time consuming**
- **First paper came out more than three years after invention (1995)**
- **Over first five years, the costs were about Euro 11000**
- **A company got interested and bought patent (reimbursed us the for the costs, but nothing more)**
- **At least some systems were sold**

Toximeter [invented 1997]:

- **Great fun to work with biologists (own wife and her supervisor)**
- **University of Waterloo helped a lot (paying a patent lawyer to write the patent and paid for all patent costs up to date)**
- **Company got interested and is allowed to sell toximeter**
- **No toximeter sold commercially yet**
- **Time not ready?**
- **Time from invention to a commercial product might be very long**
- **Patent is getting very expensive the longer you keep it**

eawag aquatic research

Thanks for your attention!

Any individual questions, please contact Mario directly

eawag aquatic research