Panel on

Academia/Industry Interactions: Approaches, Options, and Challenges

Moderator and Panelists

Panel Moderator

Kevin Daimi, University of Detroit Mercy, USA

Panelists

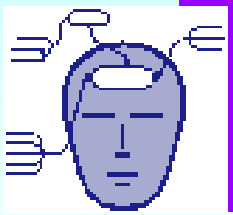
Dimitar Hristovski, University of Ljubljana, Slovenia
Steffen Fries, Siemens AG, Germany
Kevin Daimi, University of Detroit Mercy, USA

Topics

- The Role of Industry Advisory Board: A Partnership Between Industry and Academic Programs (Kevin Daimi)
- Academia/Industry Interactions: Approaches and Options (Steffen Fries)
- Academia-Industry Knowledge Transfer (Dimitar Hristovski)

Questions that will be answered

- What is the role of Industry Advisory Board?
- Why is the Industry Advisory Board important?
- How are the different research scopes of academia and industry mapped to Technology Readiness Level?
- What can we learn from each other and which options are possible to foster knowledge exchange?
- How is academia-industry knowledge transfer in medicine and health care achieved?
- What are the challenges of academia-industry knowledge transfer in medicine and health care?



Academia-Industry Knowledge Transfer

Dimitar Hristovski

Institute for biostatistics and medical informatics, Medical faculty, University of Ljubljana, Slovenia

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Our Department

- Small department at the Medical faculty
- Expertize and academic programs in:
  - Biostatistics
  - Medical informatics

Our Industries

- Hospitals
- Drug companies
- Laboratories
- Government health-related bodies

Examples of Knowledge Transfer - Teaching

- Specialized courses:
  - Statistics (survival analysis, clinical trials, microarrays, ...)
  - Project management
  - Data modeling
  - In the past not-so-specialized, too (Windows, Excel, Word, Access, ...)

Examples of Knowledge Transfer – Statistics

- Statistical consulting and analysis
- Clinical trials

Examples of Knowledge Transfer - Informatics

- Consultancy and developing parts of health-related information systems:
  - Genetic laboratories
  - Biochemical laboratories
  - Clinics
  - Telemedicine
  - Web tools and applications

Organizational Issues

- Statistical part better organized, but yet:
  - No rules for awards and financial stimulation on personal level
  - Our expertize not well advertised
- The role of the department chair
- The role of local policy

Start-ups, Spin-offs etc.

- Medical faculty not welcoming and not stimulating spin-offs
- Other faculties (e.g. computer science) provide much more stimulating environment (not only in Slovenia, but also elsewhere …)

Conclusions and Questions

- A lot of possibilities for knowledge transfer between a medical faculty and health related industries
- A lot of challenges and issues on the way:
  - Marketing?
  - Organizational?
  - Policy?
  - …

The Role of Industry Advisory Board: A Partnership Between Industry and Academic Programs

Kevin Daimi
University of Detroit Mercy, USA

Industry Advisory Board

- The board is composed of members of various industries
- Members from the Army and Health Sector could be added
- A mixture of Alumni (graduates of the university) and Non-Alumni
- A Voluntary work – Nothing is paid
- Programs create their own Advisory Boards
- It is a forum where ideas are exchanged and recommendations are made
- When selecting members, business relevance to the academic program objectives be considered

Board-Academic Program Interaction

- Annual Meetings: discuss normal agenda
- As-needed Meetings: discuss urgent matters
- Social Media Arrangement: exchange ideas
- Emails: used for non-urgent matters or when it is hard to arrange a meeting
- Meetings are attended by industry experts (members) and program faculty

Role of Industry Advisory Board

- Providing advice on curriculum development
- A link between academic programs individual faculty and industry professions in the field
- Identify actions the programs should take to meet the demand in industry
- Help with co-op assignments: Students are required to have 2-3 cooperative education assignments during their study – working in a company during summer
- Help with course teaching: using members as part-time faculty when there is a need
- External Evaluator for program assessment

Role of Industry Advisory Board

- Provide real-life projects for students in various courses
- Assist and evaluate Program Objectives and Outcomes
- Collaborative Projects between faculty and industry Professions
- Grants to improve labs: Convince their companies to provide grants to the academic program
- Faculty Internship: Faculty will spend 6 - 12 months working in a company – i.e. no teaching load during this period
- Speakers at various courses
- Supporting student research
- Job Shadowing: acting as industry advisors for students

Panel Discussion Infosys

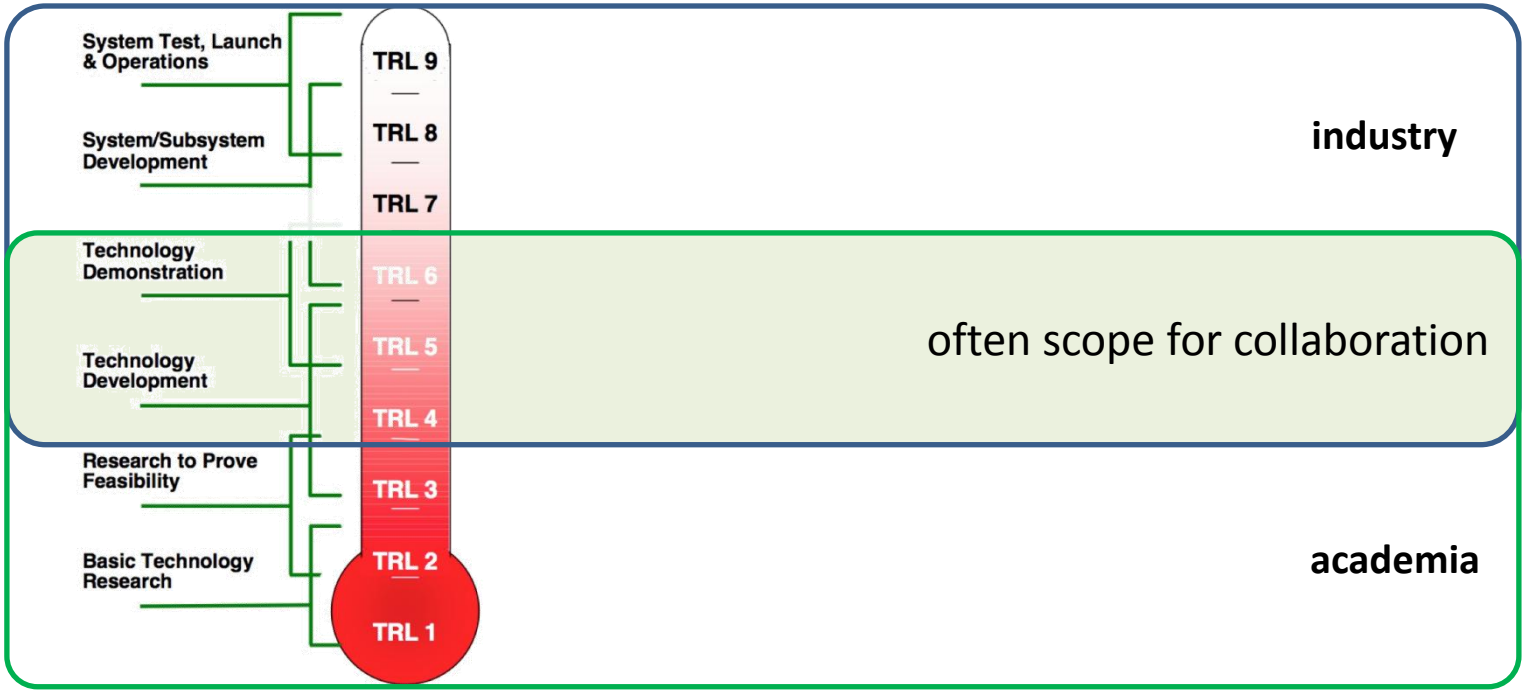
Academia/Industry Interactions – some thoughts on approaches and options

Steffen Fries, Siemens AG, Germany

May 24th, 2017

academia & industry – different scope in research

- **technology readiness levels (TRL)**
  - define maturity of a technology
  - used by the NASA since the 80s
  - applied also by the US DoD and DoE as well as in EU research program Horizon 2020
  - also defined in ISO 16290
  - TRLs reflect the status of R&D activities
  - Industrial and academic research are typically at different TRLs
  - Collaboration with industry can help to move academic research towards industrial application in products and solutions



academia & industry – different scope in research

- **example: experiences form the funded project ZESAN (2008) concerning wireless sensor networks → different requirement settings as base for solution definition and design**

	Academic WSN	**Industrial WSN**
Deployment	Random	Planned
Infrastructure	Often no	Yes
Operation	Unsupervised	Supervised
Application area	Public spaces	Access restricted areas
Self-organization	Yes	Only to a certain extend
Integration	Usually no issue	Big issue
Number of nodes	10.000+	Tens or hundreds

https://www.researchgate.net/profile/Rudolf_Sollacher/publication/274377835_From_Academia_to_the_Field_Wireless_Sensor_Networks_for_Industrial_Use/links/5527cadf0cf2779ab78ab8d0/From-Academia-to-the-Field-Wireless-Sensor-Networks-for-Industrial-Use.pdf

academia & industry – interactions

mutual motivations and benefits (examples)

- revenue for university
- broaden experience in industrial applications
- explore demands of the commercial world
- products utilizing research results
- recognition of research results with no immediate influence on products
- disruptive ideas for existing business
- talent scouting

challenges (examples)

- selection of funding sources , e.g., public funding vs. industry funding
- partner exploration
- co-ordination of interests
- ownership of intellectual property
- continuity of collaboration

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Academia/Industry Interactions: Approaches, Options, and Challenges

Summary

The relationship between industry and academia is like the relationship between head and tail of a coin. If any of these is missing, we do not have a coin.

Academia needs industry to improve their programs to meet the market needs, and industry needs academia to provide them with the qualified graduates. If this relationship is missing or weak, universities will provide graduates that are not needed by industry, and industry will not have qualified personnel to improve their industry and technology.