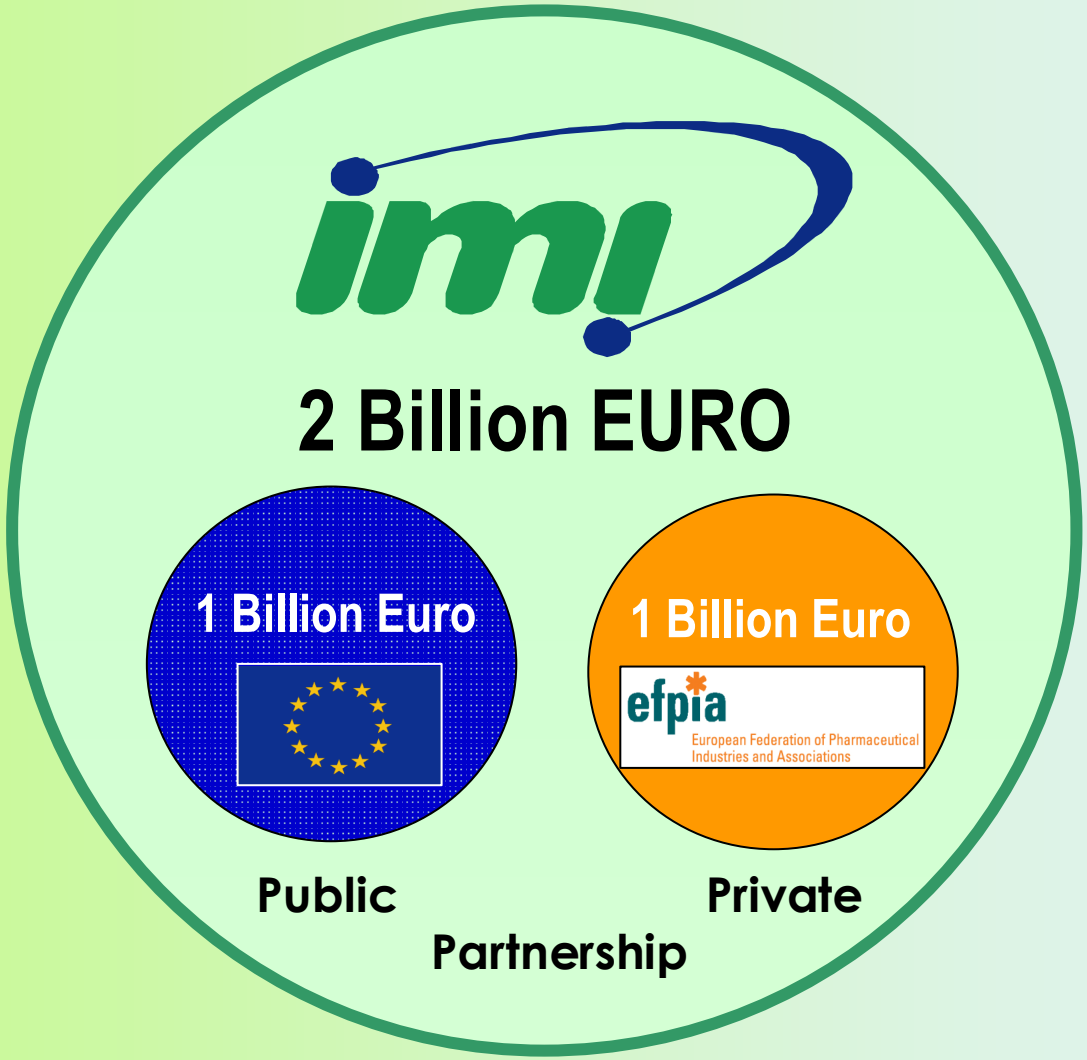
# Innovative Medicines Initiative (IMI) and other Public Private Partnerships: Educational Ambitions

**Oslo EAFP**

**19 June 2009**

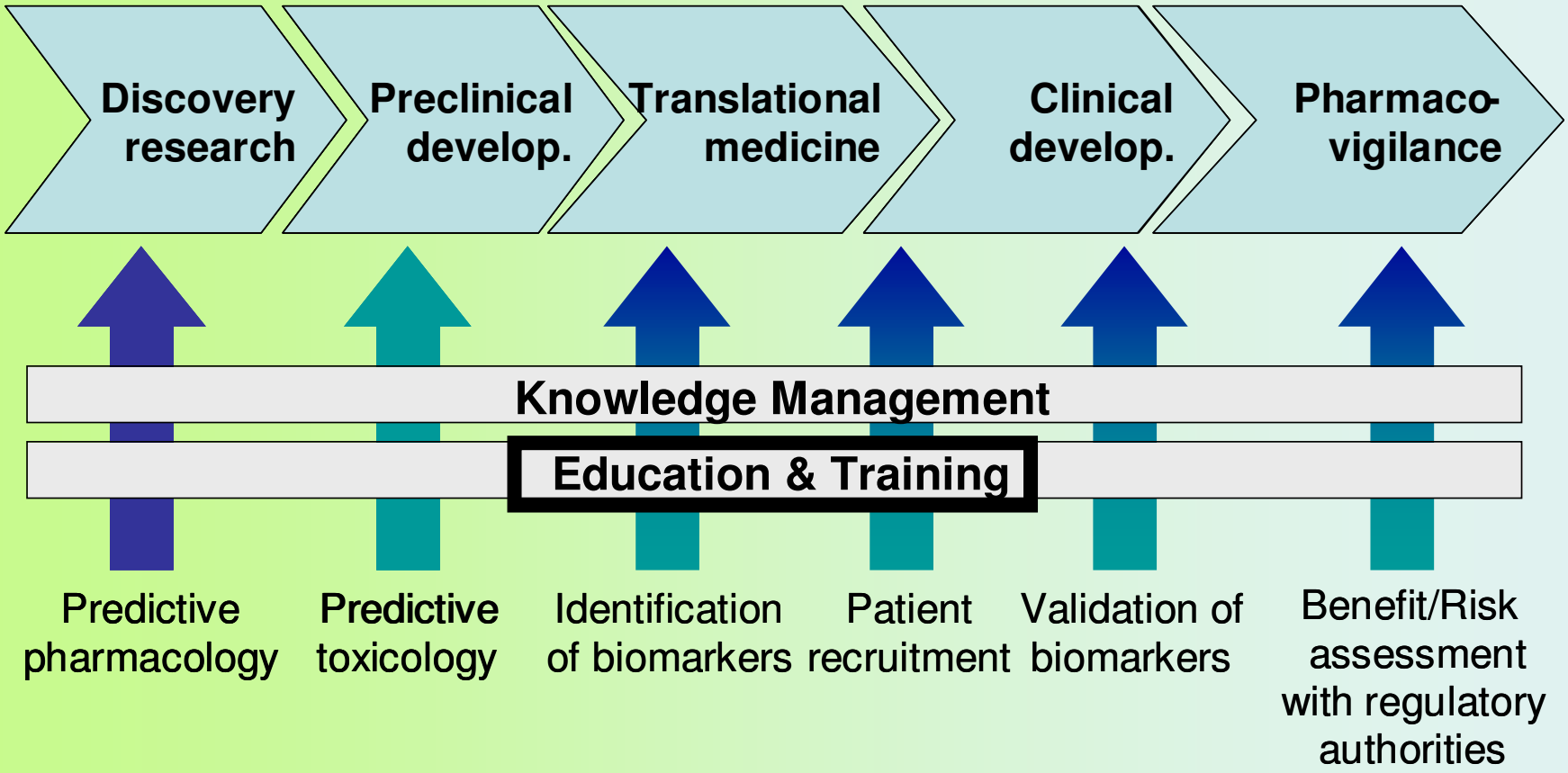

1200 km


2 Billion EURO
1 Billion Euro
1 Billion Euro
efpia
European Federation of Pharmaceutical Industries and Associations
Public
Private
Partnership

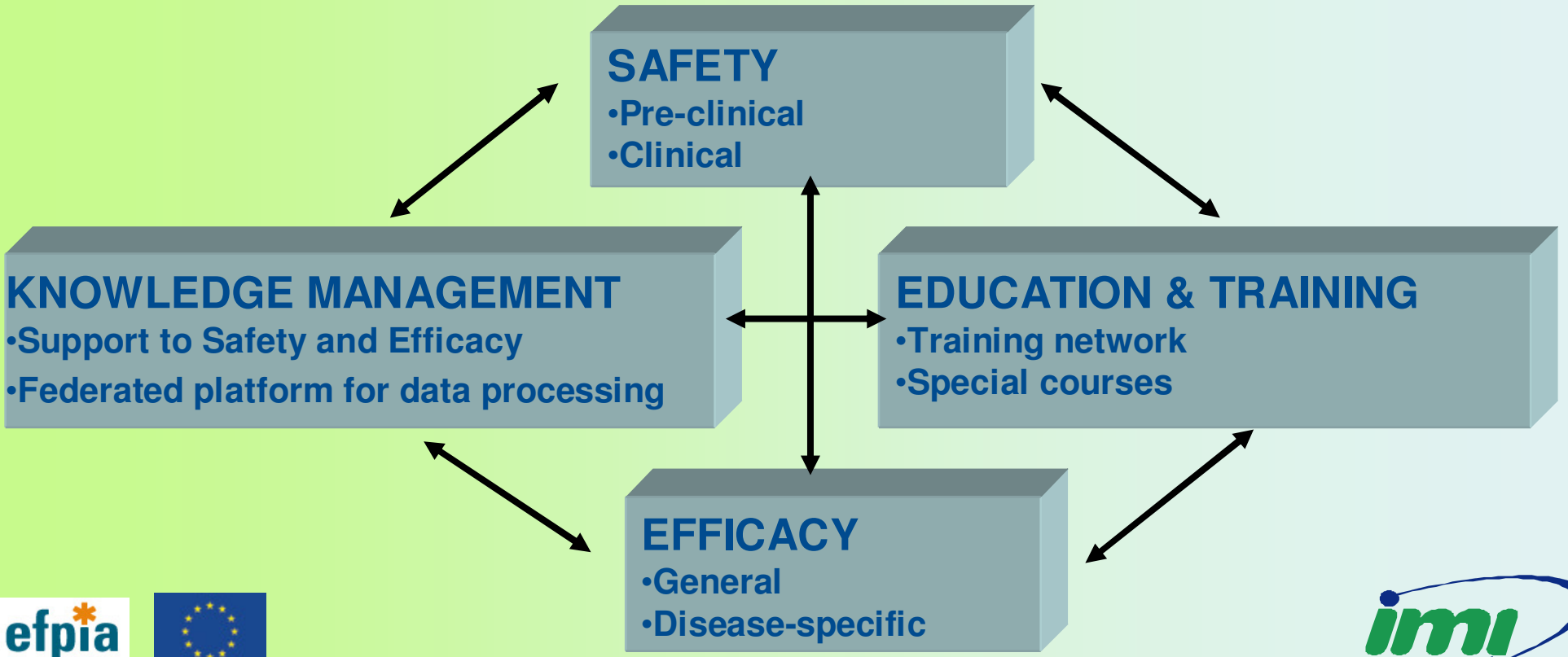
# IMI Public and Private Founders and Funders

Almirall
A lot to discover ESTEVE
MERCK SERONO
Pfizer
ucb
AMGEN
genzyme
MERCK SHARP & DOHME
Roche
AstraZeneca INTERNATIONAL
gsk GlaxoSmithKline
NOVARTIS
Johnson & Johnson
sanofi aventis
L'essentiel c'est la santé.
Bayer
novo nordisk
Lilly
SERVIER
Boehringer Ingelheim
ORION
sigma-tau
Fondazione Chiesi
Lundbeck
Pierre Fabre
SOLVAY
Wyeth

# The Research Focus of IMI



# The Four Pillars of IMI Research Agenda



# IMI JU First call Topics with projects in negotiation

2 Non-genotoxic Carcinogenesis
3 Expert Systems for in silico Toxicity Prediction
5 Qualification of Translational Safety Biomarkers
6 Strengthening the Monitoring of Benefit/Risk
7 Islet Cell Research
8 Surrogate Markers for Vascular Endpoints
9 Pain Research
10 New Tools for the Development of Novel Therapies in Psychiatric Disorders
11 Neurodegenerative Disorders
12 Understanding Severe Asthma
13 COPD Patient Reported Outcomes
14 European Medicines Research Training Network
15 Safety Sciences for Medicines Training Programme
16 Pharmaceutical Medicine Training Programme
18 Pharmacovigilance Training Programme

# IMI 1st round selected projects & expected outcomes…#3

12. European Medicines Research Training Network

***Expected outcome*: a European biopharmaceutical research training platform providing a sustainable academia-industry cross-disciplinary approach to efficient organisation of training courses on emerging science and technologies across Europe**

13. Safety sciences for medicines training programme

***Expected outcome*: training programme integrating all safety-relevant disciplines linking animal and human/patient safety data thereby facilitating a more holistic evaluation of new medicines**

14. Pharmaceutical medicine training programme

***Expected outcome*: establish a network of academic centres that delivers postgraduate training programmes in pharmaceutical medicine including quality management of the processes and outcomes**

15. Pharmacovigilance training programme

***Expected outcome*: customised training programmes for professionals in pharmacovigilance from industry and regulatory agencies to support proactive pharmacovigilance and risk management of medicines**

# Dutch Top Institute Pharma: TI Pharma

# Lisbon Strategy

In March 2000, the European Council in Lisbon set out a ten-year strategy to make the Union "**the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion**". During the Swedish Presidency, in

**European Research & Development investment to 3% of the European Union's Gross Domestic Product**

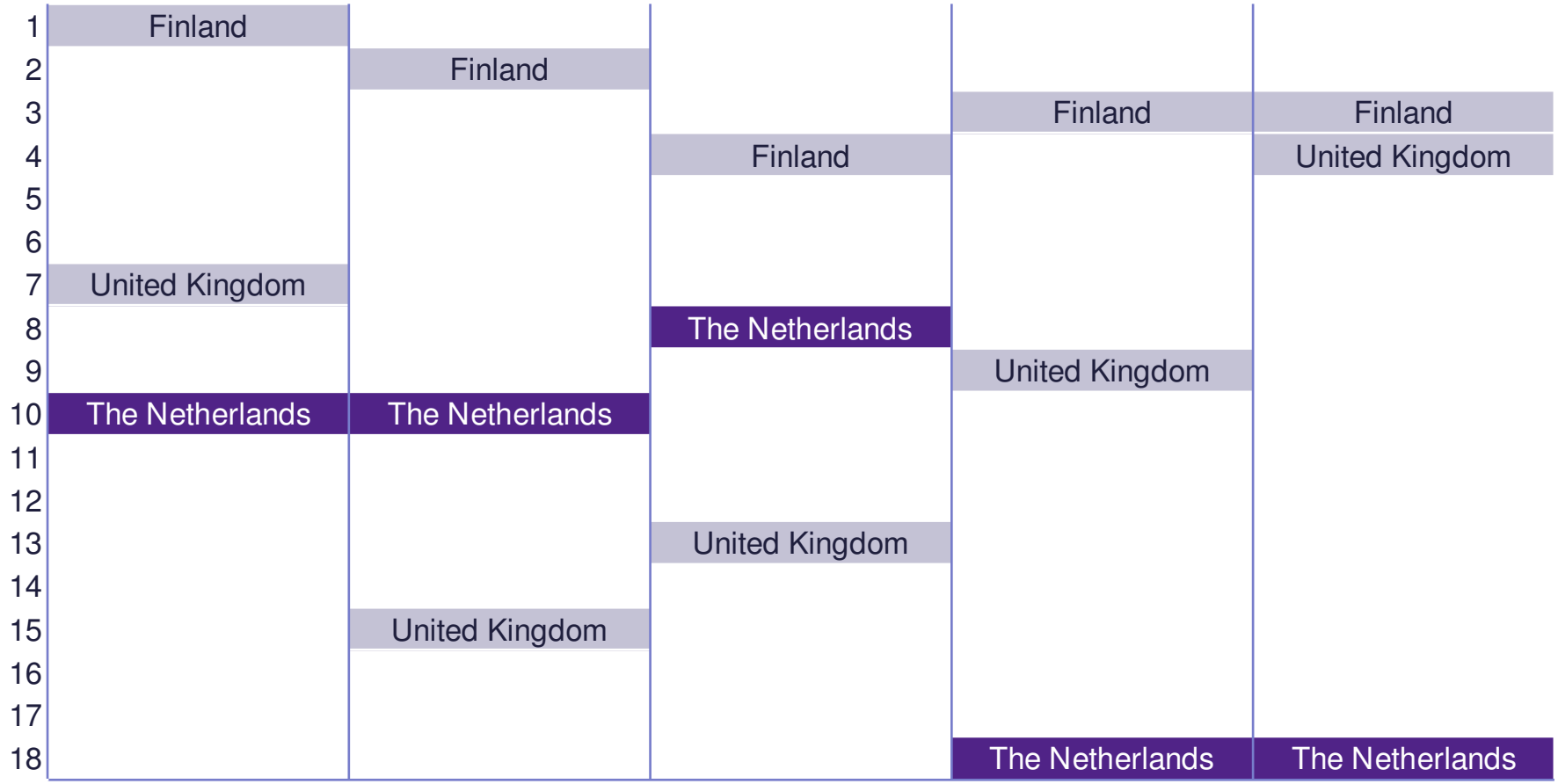
**Conquistadores-monument; the explorers….**

# GDP spent on Research & Development (2004)

| Country | percentage of GDP | fraction industry (%) |
|---|---|---|
| Netherlands | 1.78 % | 51 |
| Finland | 3.46 % | 70 |
| Sweden | 3.86 % | 65 |
| Denmark | 2.48 % | 60 |
| Germany | 2.50 % | 67 |
| France | 2.14 % | 52 |
| Japan | 3.18 % | 75 |
| China | 1.23 % | 66 |
| USA | 2.68 % | 64 |

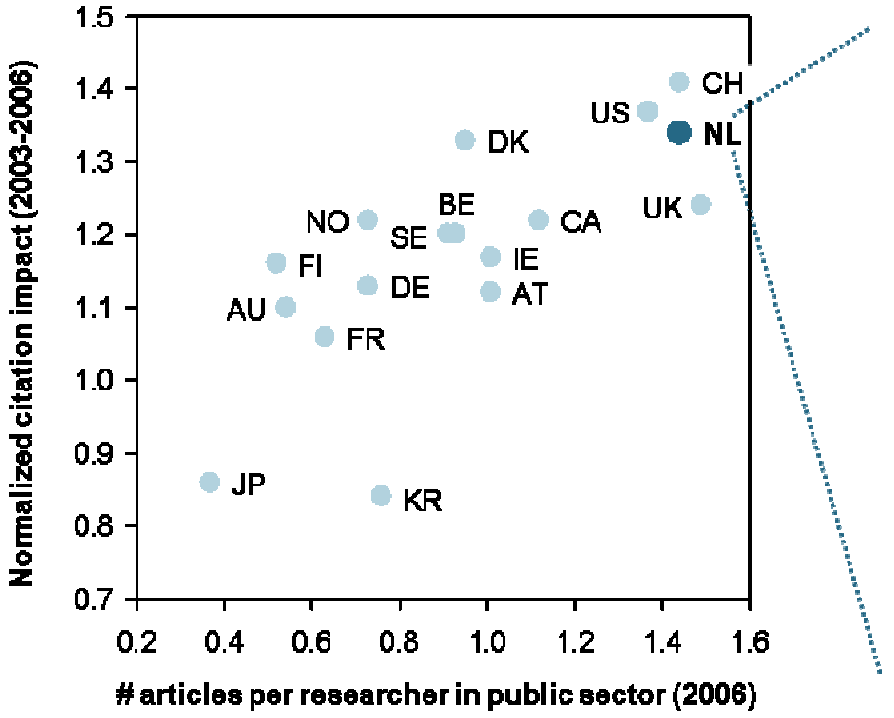
**Lisbon agenda…….. 3%**

# The Netherlands has work to do to realize a ‘knowledge economy’ cf. Lisbon Agenda, 2000

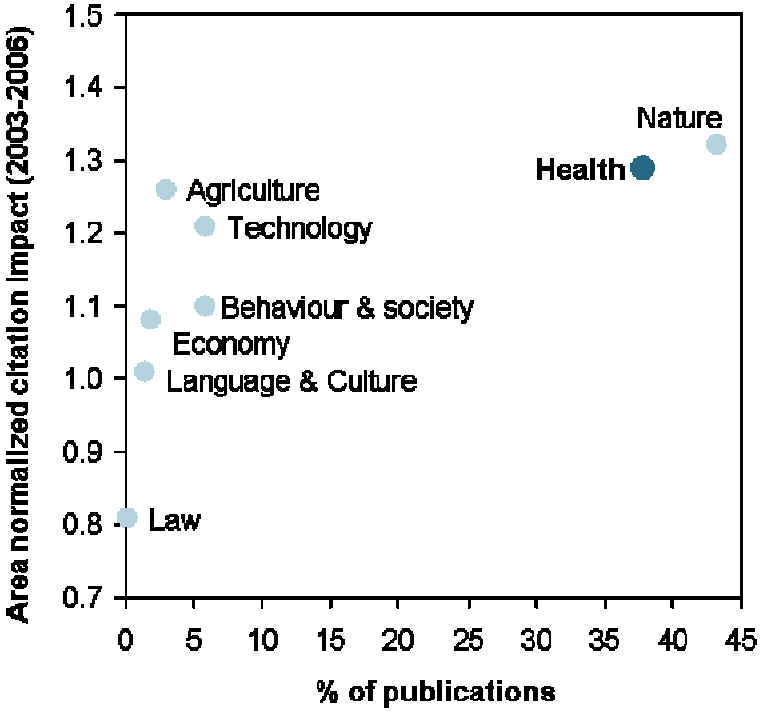



Source: European Innovation Scoreboard 2006

## Publication scores knowledge economies




## Publication scores scientific areas in the Netherlands



# TI Pharma: a Public Private Partnership

Between ivory tower and smokestack…..

**TI Pharma**


Jointly shaping the future of medicines

# 23 academic and 38 industry partners form 44 *multilateral* public-private project consortia


Note: Agamyxis and Virosome Biologicals missing (no logo available)

- **23 academic participants**
- **38 industrial participants**
- Per project **at least 3 partners**, of which at least one academic, and one industrial
- Total: **45 multilateral consortia** working on projects ranging in size from EUR 2 to 18 million (over 4-5 years)

# 250 million euros in 4 years

## It's about Health and Wealth

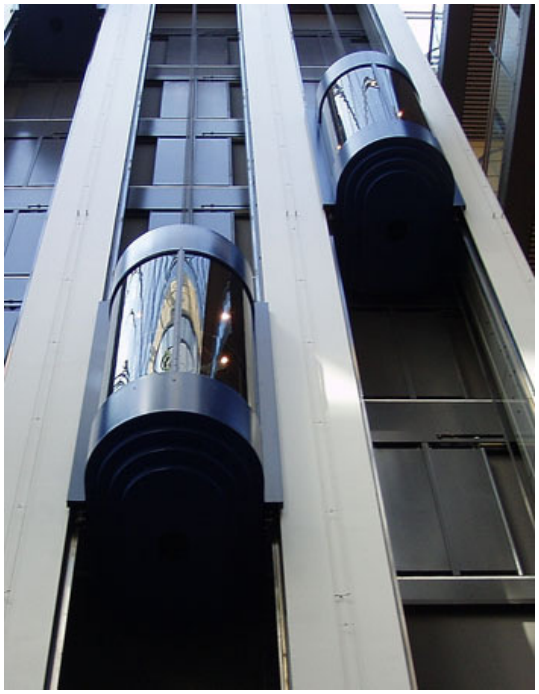

**Financieel Dagblad**

Arend van Dam

# 1 minute elevator pitch

## TI Pharma characteristics

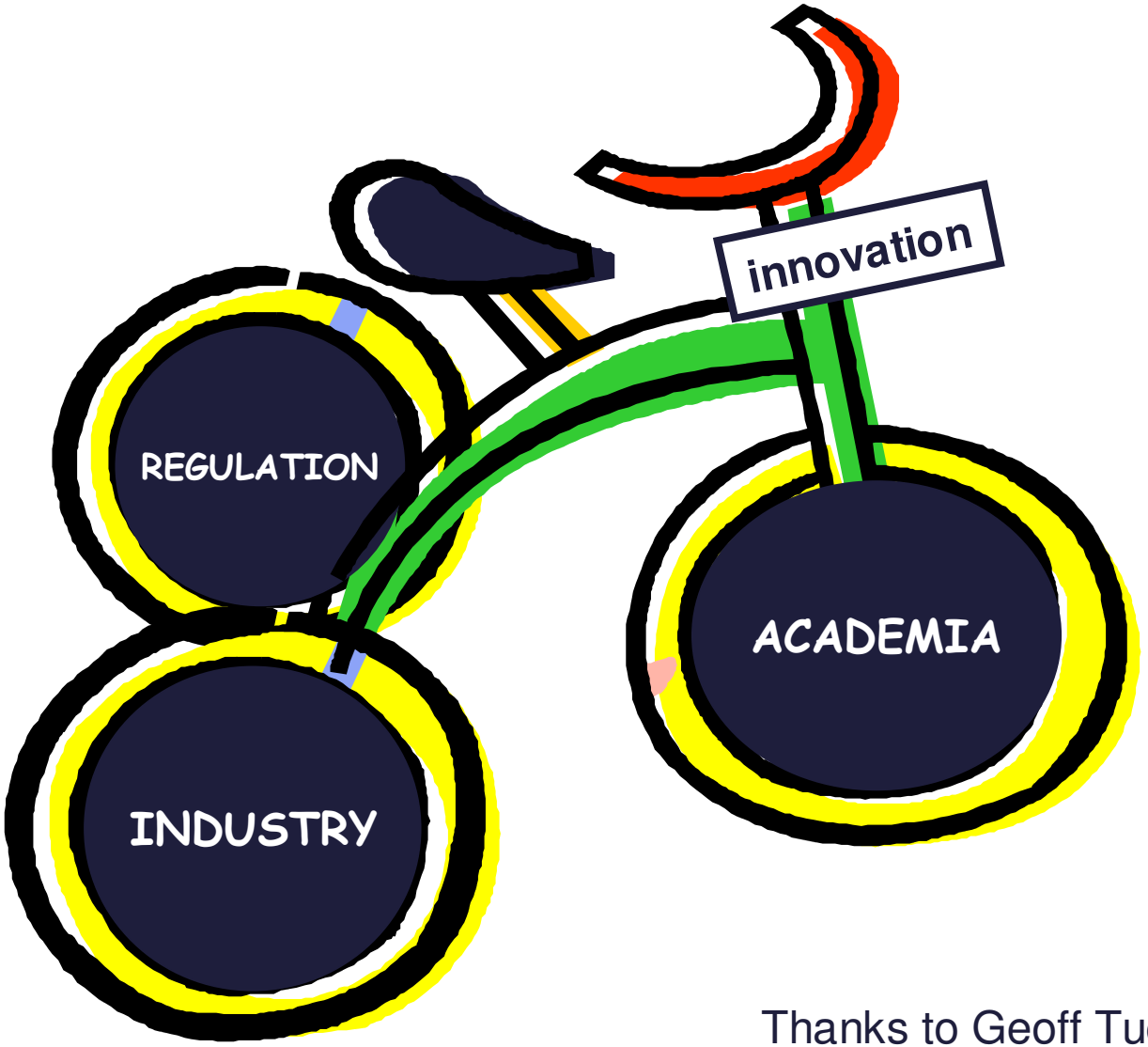
- A public private partnership: a PPP
- 60 million euro/year for 4-6 years
- *Consortia* with (37) industry and (20) academia working on projects
- Pre-competitive research
- Translational in character of research
- A virtual institute



**But above all: quality!**

# TI Pharma challenges in creating a new generation of researchers

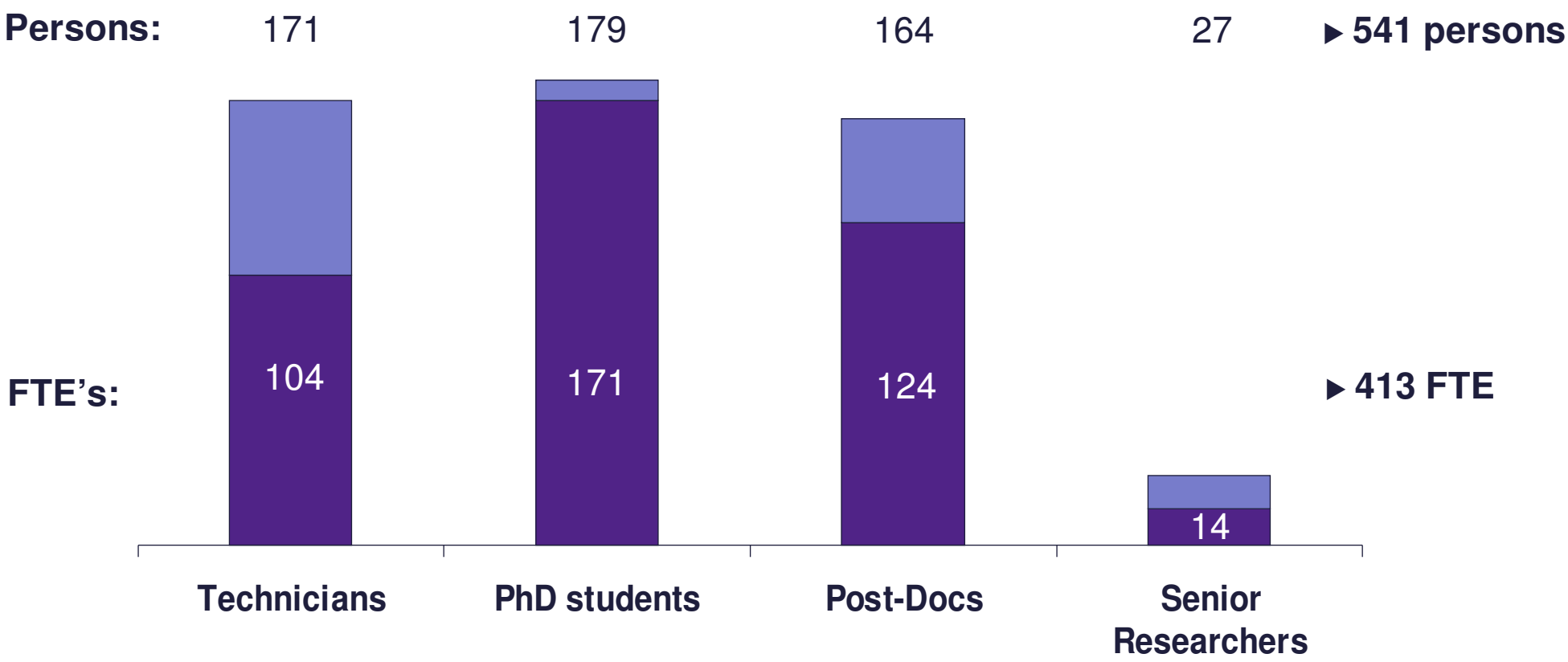
- Teamwork
- Bridging academia and industry
- Multidisciplinary
- Spans the entire discovery/development/…. process

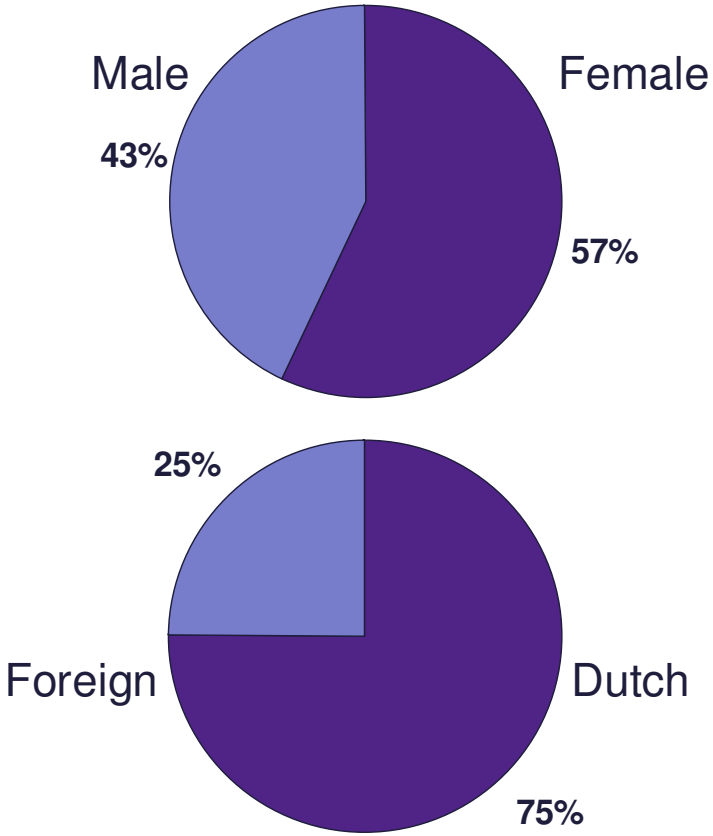

Thanks to Geoff Tucker…..

# The current portfolio of 42 projects employs 541 persons / 413 FTE's

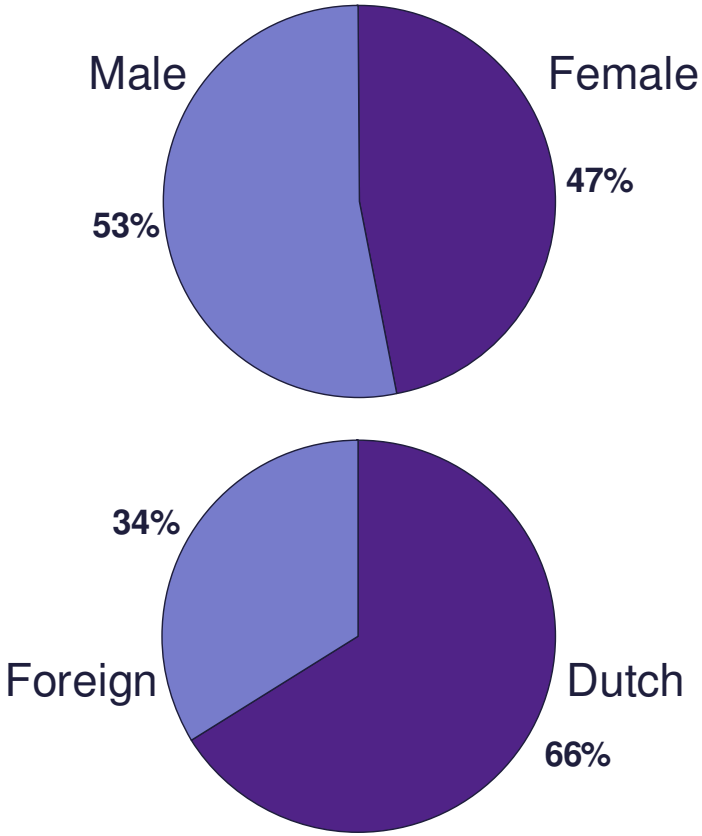
Workforce in persons and FTE's



# PhD students and Post-Docs: gender is equally represented and foreigners account for 1/4 to 1/3

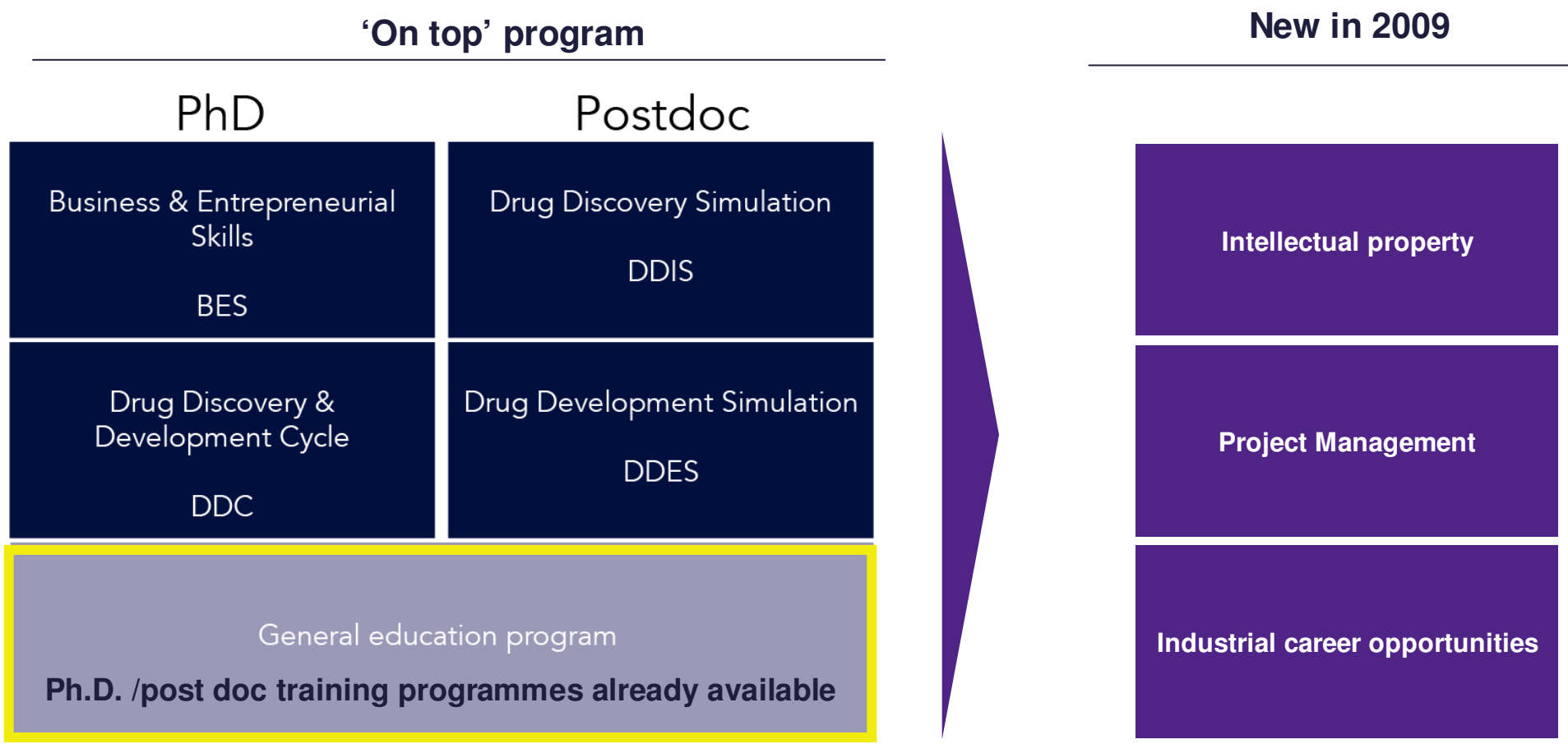



**PhD students**




**Post-Docs**

# In 2009 the ‘on top’ program is extended with three new courses



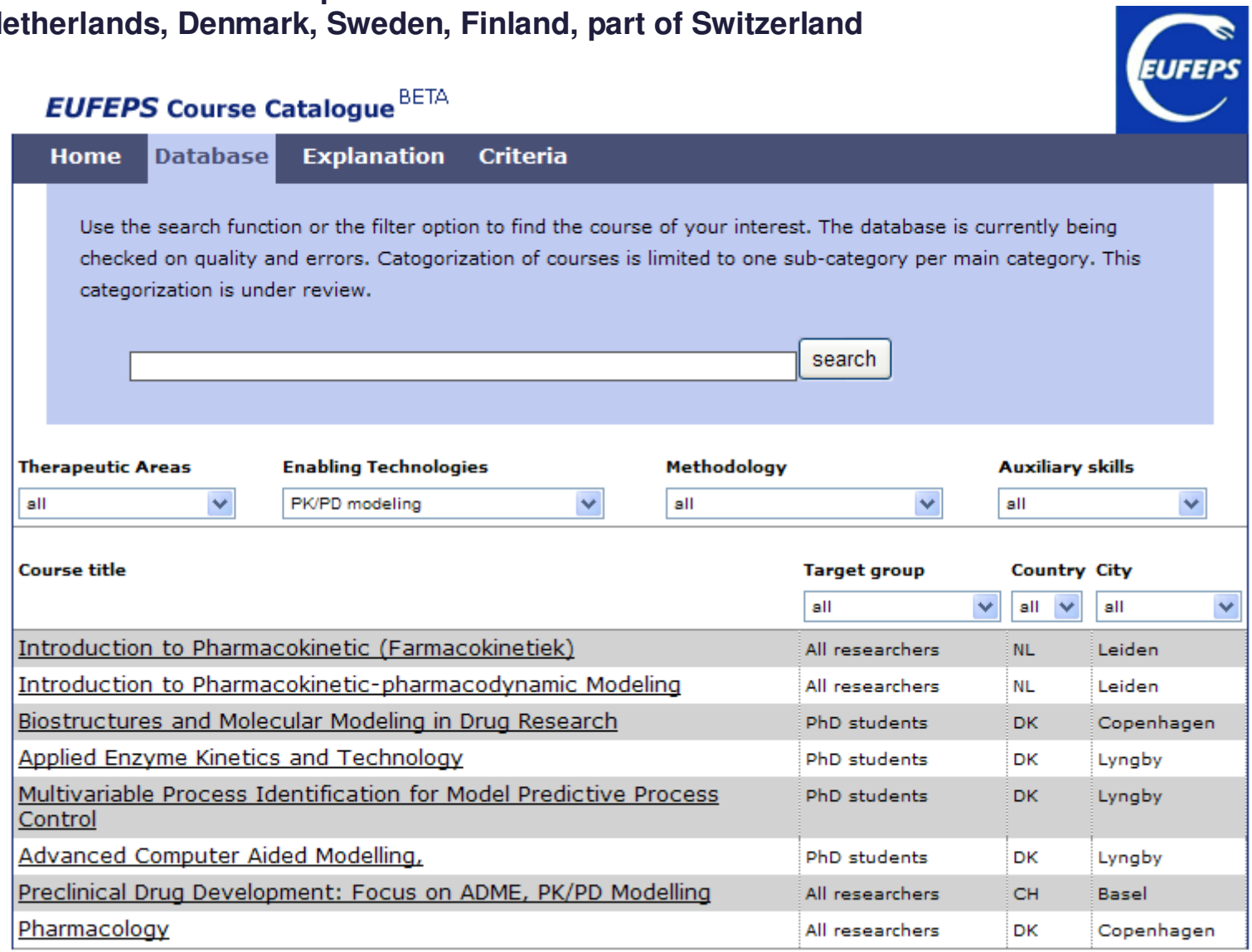
TI PHARMA

# EUFEPS/TI Pharma Catalogue

## catalogue of available courses

# http://www.etplatform.eu/database

**Courses in biomedical/pharmaceutical sciences in Netherlands, Denmark, Sweden, Finland, part of Switzerland**



***EUFEPS* Course Catalogue** BETA

Home | Database | Explanation | Criteria

Use the search function or the filter option to find the course of your interest. The database is currently being checked on quality and errors. Catogorization of courses is limited to one sub-category per main category. This categorization is under review.

search

| Therapeutic Areas | Enabling Technologies | Methodology | Auxiliary skills |
|---|---|---|---|
| all | PK/PD modeling | all | all |

| Course title | Target group | Country | City |
|---|---|---|---|
| | all | all | all |
| Introduction to Pharmacokinetic (Farmacokinetiek) | All researchers | NL | Leiden |
| Introduction to Pharmacokinetic-pharmacodynamic Modeling | All researchers | NL | Leiden |
| Biostructures and Molecular Modeling in Drug Research | PhD students | DK | Copenhagen |
| Applied Enzyme Kinetics and Technology | PhD students | DK | Lyngby |
| Multivariable Process Identification for Model Predictive Process Control | PhD students | DK | Lyngby |
| Advanced Computer Aided Modelling, | PhD students | DK | Lyngby |
| Preclinical Drug Development: Focus on ADME, PK/PD Modelling | All researchers | CH | Basel |
| Pharmacology | All researchers | DK | Copenhagen |

TI PHARMA

TI PHARMA

About TI Pharma | Research | Education & Training

# Inventory of available courses in the Denmark, Swede, Finland, The Netherlands and part of Switzerland

About TI Pharma
Research
Education & Training
Introduction
Overview of Courses
News
Jobs
Links
Workshops
Calendar

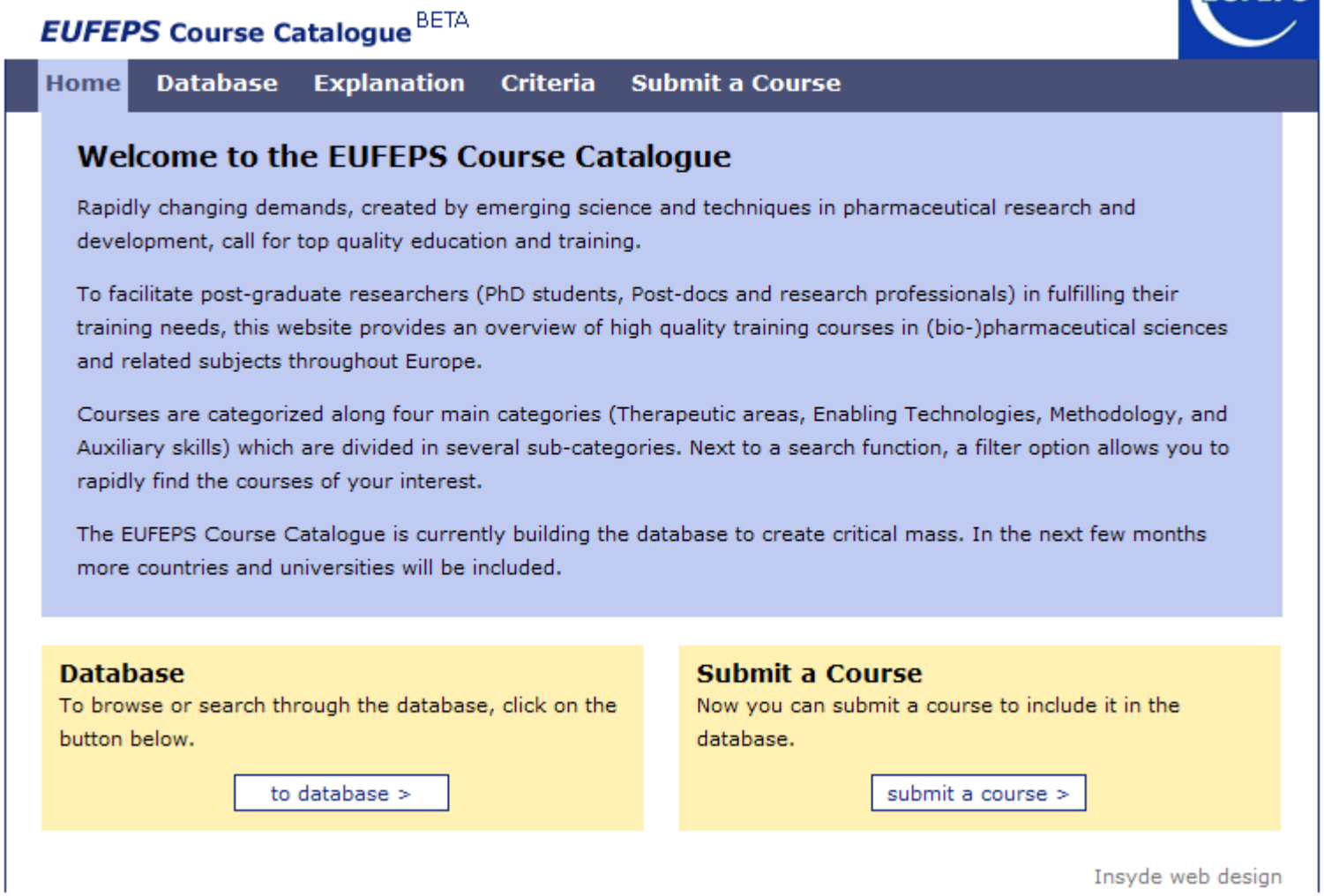
Back to the introduction

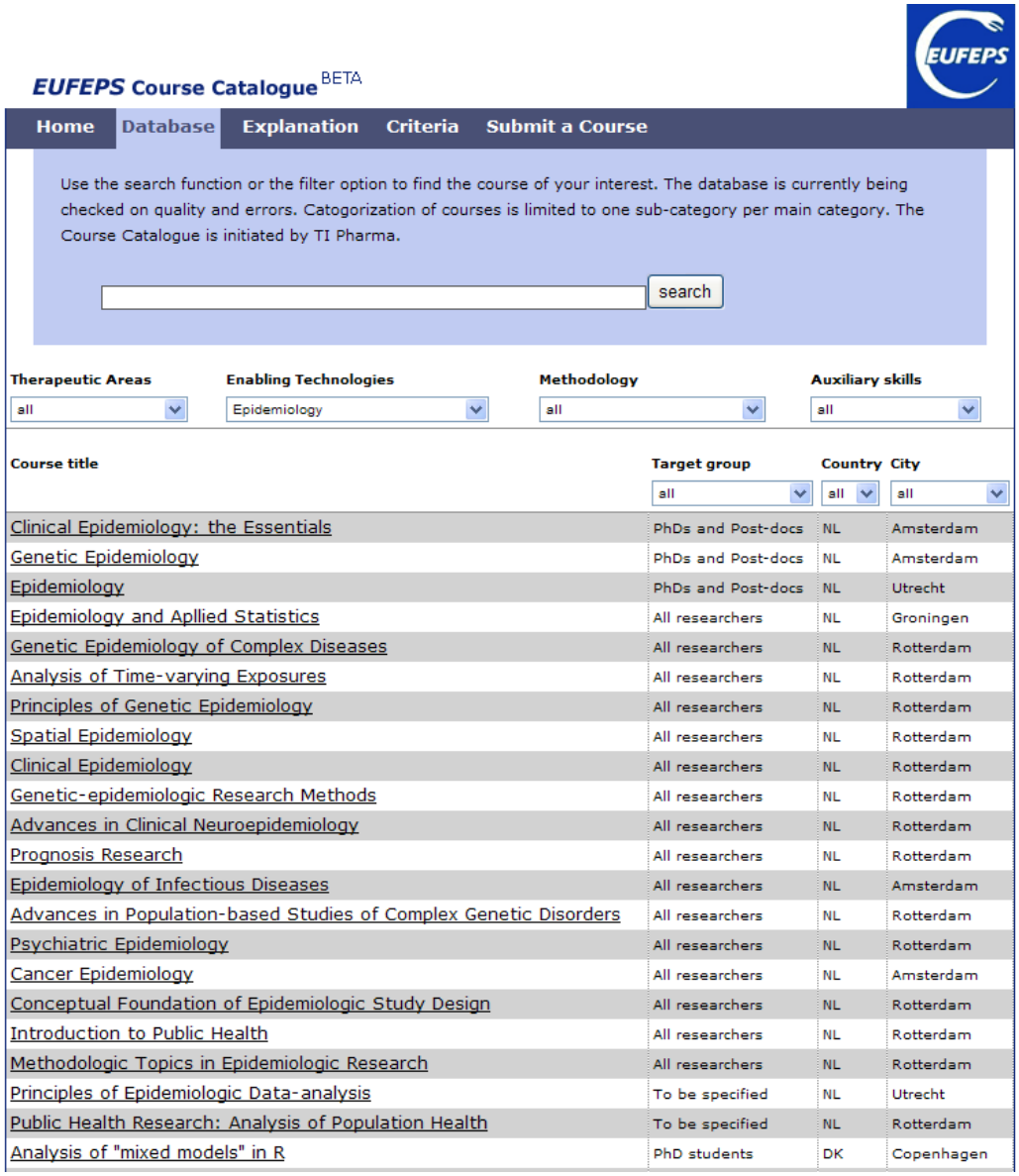
## Inventory

On this page an overview is listed of more than 250 available courses at different organizations in the Netherlands. The courses are categorized in main- and sub-categories. The filters in the top line can help you to find the course to fulfill your needs.

This overview is currently being checked on quality and errors.

| Main category | Subcategory | Course title | Target group | Organizer |
|---|---|---|---|---|
| all | all | | all | all |
| Enabling Technologies | Business Skills | Biobussines | PhD students | AMC |
| General Skills | GLP and GMP | basis safety laboratories course | PhD students | AMC |
| Methodology | GLP and GMP | radiation protection | PhD students | AMC |
| Therapeutic Areas | General therapeutic / Basic | advanced immunology | PhD students | AMC |
| General Skills | Presentation skills | Writing research proposals and grand applications | PhD students | CaRe |
| General Skills | Ethics | Ethics of care and health | PhD students | CaRe |
| Methodology | Statistics | Multilevel analysis | PhD students | CaRe |
| Therapeutic Areas | Cardiovasculair Diseases | Physiology of the heart and circulation | PhD students | CARIM |
| Therapeutic Areas | Cardiovasculair Diseases | Introduction into cardiovascular | PhD students | CARIM |


EUFEPS Course Catalogue BETA
Home
Database
Explanation
Criteria
Submit a Course
Welcome to the EUFEPS Course Catalogue
Rapidly changing demands, created by emerging science and techniques in pharmaceutical research and development, call for top quality education and training.
To facilitate post-graduate researchers (PhD students, Post-docs and research professionals) in fulfilling their training needs, this website provides an overview of high quality training courses in (bio-)pharmaceutical sciences and related subjects throughout Europe.
Courses are categorized along four main categories (Therapeutic areas, Enabling Technologies, Methodology, and Auxiliary skills) which are divided in several sub-categories. Next to a search function, a filter option allows you to rapidly find the courses of your interest.
The EUFEPS Course Catalogue is currently building the database to create critical mass. In the next few months more countries and universities will be included.
Database
To browse or search through the database, click on the button below.
to database >
Submit a Course
Now you can submit a course to include it in the database.
submit a course >
Insyde web design



**EUFEPS Course Catalogue** BETA

Home | Database | Explanation | Criteria | Submit a Course

Use the search function or the filter option to find the course of your interest. The database is currently being checked on quality and errors. Catogorization of courses is limited to one sub-category per main category. The Course Catalogue is initiated by TI Pharma.

search

| Therapeutic Areas | Enabling Technologies | Methodology | Auxiliary skills |
|---|---|---|---|
| all | Epidemiology | all | all |

| Course title | Target group | Country | City |
|---|---|---|---|
| | all | all | all |
| Clinical Epidemiology: the Essentials | PhDs and Post-docs | NL | Amsterdam |
| Genetic Epidemiology | PhDs and Post-docs | NL | Amsterdam |
| Epidemiology | PhDs and Post-docs | NL | Utrecht |
| Epidemiology and Apllied Statistics | All researchers | NL | Groningen |
| Genetic Epidemiology of Complex Diseases | All researchers | NL | Rotterdam |
| Analysis of Time-varying Exposures | All researchers | NL | Rotterdam |
| Principles of Genetic Epidemiology | All researchers | NL | Rotterdam |
| Spatial Epidemiology | All researchers | NL | Rotterdam |
| Clinical Epidemiology | All researchers | NL | Rotterdam |
| Genetic-epidemiologic Research Methods | All researchers | NL | Rotterdam |
| Advances in Clinical Neuroepidemiology | All researchers | NL | Rotterdam |
| Prognosis Research | All researchers | NL | Rotterdam |
| Epidemiology of Infectious Diseases | All researchers | NL | Amsterdam |
| Advances in Population-based Studies of Complex Genetic Disorders | All researchers | NL | Rotterdam |
| Psychiatric Epidemiology | All researchers | NL | Rotterdam |
| Cancer Epidemiology | All researchers | NL | Amsterdam |
| Conceptual Foundation of Epidemiologic Study Design | All researchers | NL | Rotterdam |
| Introduction to Public Health | All researchers | NL | Rotterdam |
| Methodologic Topics in Epidemiologic Research | All researchers | NL | Rotterdam |
| Principles of Epidemiologic Data-analysis | To be specified | NL | Utrecht |
| Public Health Research: Analysis of Population Health | To be specified | NL | Rotterdam |
| Analysis of "mixed models" in R | PhD students | DK | Copenhagen |

**EUFEPS Course Catalogue** BETA

Home | Database | Explanation | Criteria | Submit a Course

< Back to database

## Epidemiology and Apllied Statistics

**Aim**
To learn about the concepts, principles, and methods in epidemiology. The participants will become familiar with study designs, methodological problems, statistical analyses and causal inference.

### Location & Organization

**Organizer**
GUIDE - Graduate School for Drug Exploration, Groningen

**Course Director**
Prof. H.M. Boezen

**Location / venue**
Groningen

### Timing & Workload

**Duration** Two weeks
**ECTS points** Three
**Frequency** Once a year

**Teaching methods used**
Lectures, assignments and practicals.

**Examination** yes

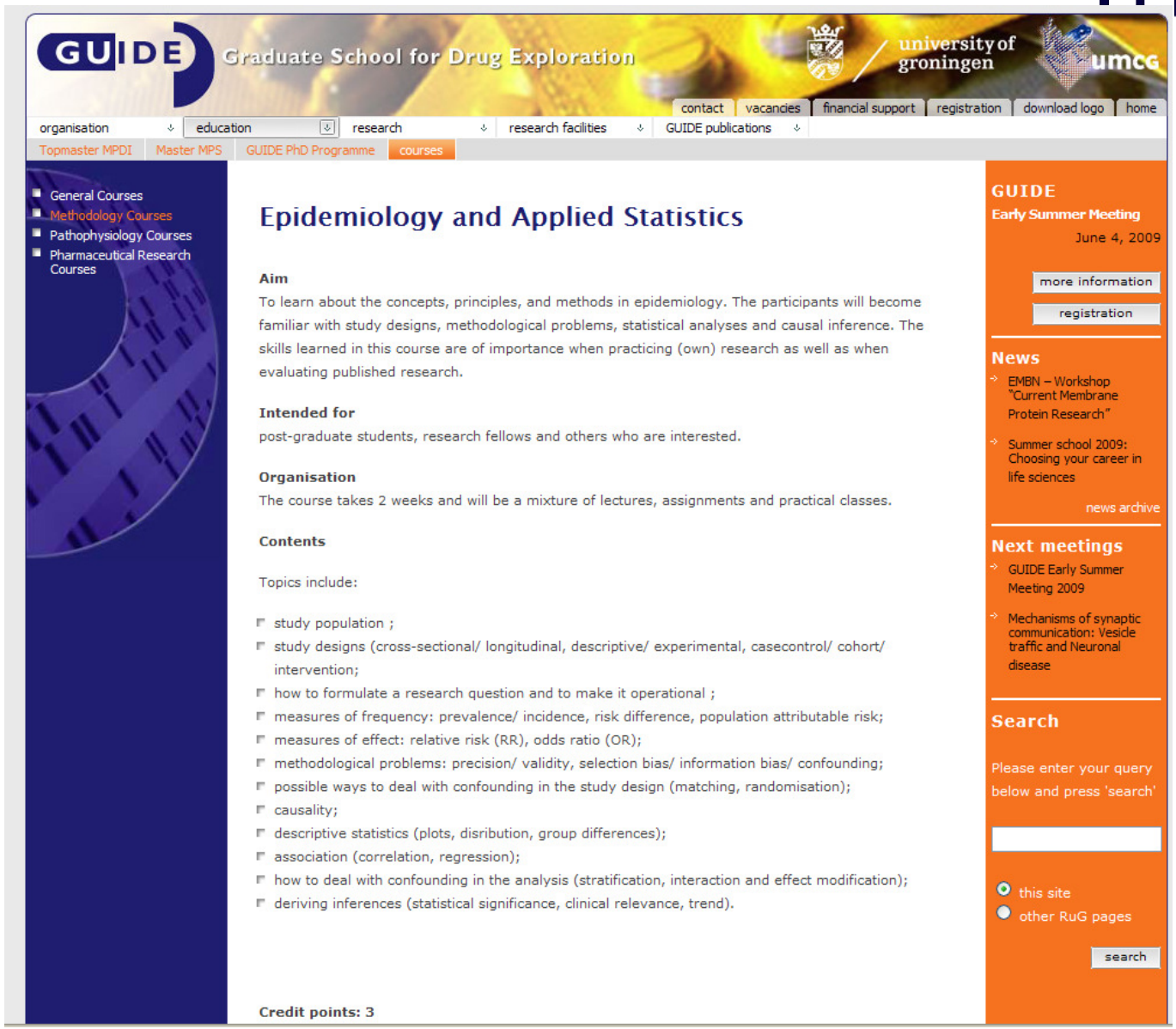
### Criteria

**Is the course taught in English?** yes
**Is documentation available? (book, syllabus)?** yes
**Is the course open for external researchers?** yes

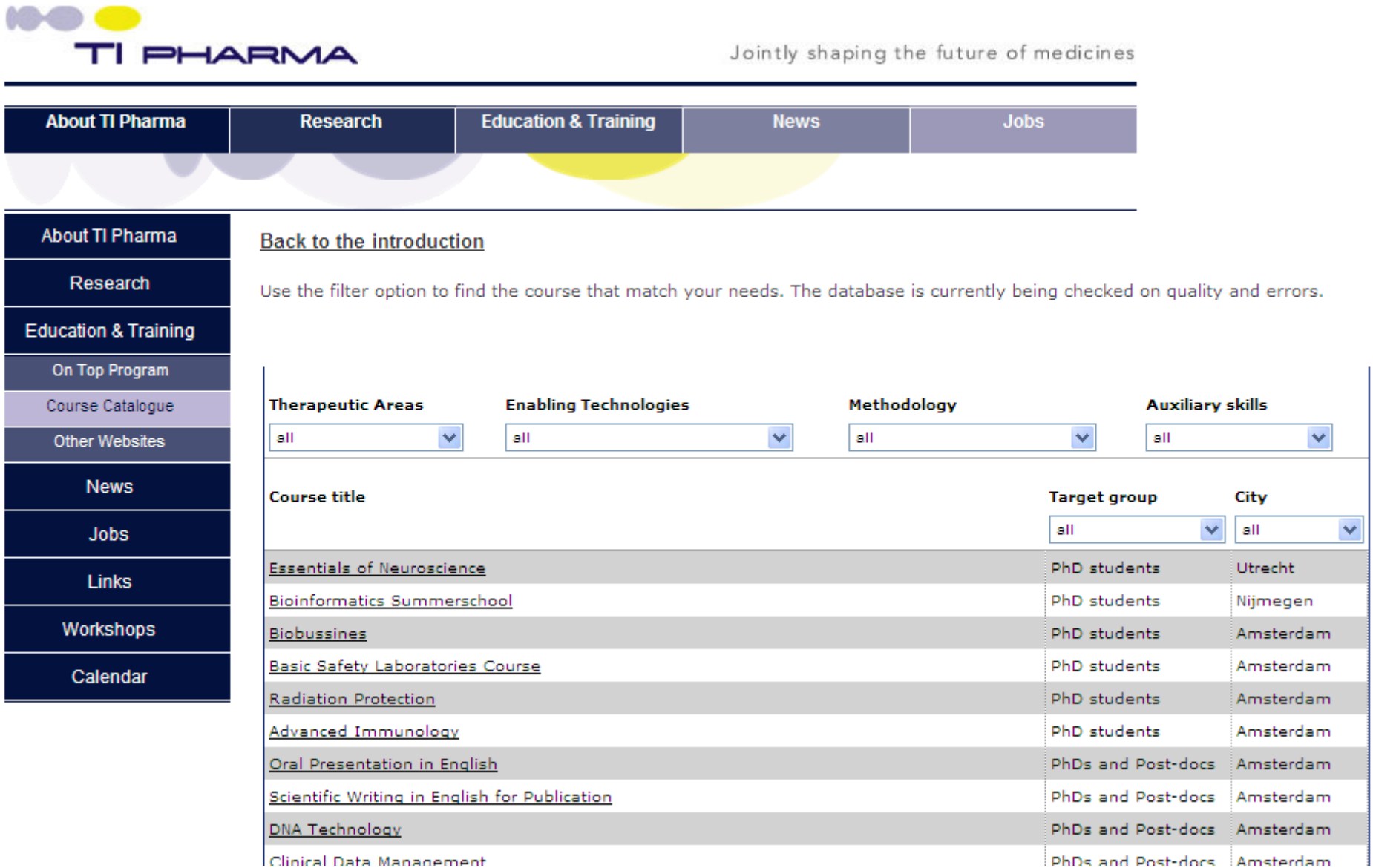
### More Information

http://www.graduateschoolguide.nl/html/education/courses/epidemiologyandappliedstaistics.htm

**Categories**
Therapeutic Areas: None
Enabling Technologies: Epidemiology
Methodology: None
Auxiliary skills: None
**Target Group**
All researchers
**Country**
NL
**City**
Groningen
**More information**
view website


GUIDE
Graduate School for Drug Exploration
university of groningen
umcg
contact
vacancies
financial support
registration
download logo
home
organisation
education
research
research facilities
GUIDE publications
Topmaster MPDI
Master MPS
GUIDE PhD Programme
courses
General Courses
Methodology Courses
Pathophysiology Courses
Pharmaceutical Research Courses
Epidemiology and Applied Statistics
Aim
To learn about the concepts, principles, and methods in epidemiology. The participants will become familiar with study designs, methodological problems, statistical analyses and causal inference. The skills learned in this course are of importance when practicing (own) research as well as when evaluating published research.
Intended for
post-graduate students, research fellows and others who are interested.
Organisation
The course takes 2 weeks and will be a mixture of lectures, assignments and practical classes.
Contents
Topics include:
study population ;
study designs (cross-sectional/ longitudinal, descriptive/ experimental, casecontrol/ cohort/ intervention;
how to formulate a research question and to make it operational ;
measures of frequency: prevalence/ incidence, risk difference, population attributable risk;
measures of effect: relative risk (RR), odds ratio (OR);
methodological problems: precision/ validity, selection bias/ information bias/ confounding;
possible ways to deal with confounding in the study design (matching, randomisation);
causality;
descriptive statistics (plots, disribution, group differences);
association (correlation, regression);
how to deal with confounding in the analysis (stratification, interaction and effect modification);
deriving inferences (statistical significance, clinical relevance, trend).
Credit points: 3
GUIDE
Early Summer Meeting
June 4, 2009
more information
registration
News
EMBN – Workshop "Current Membrane Protein Research"
Summer school 2009: Choosing your career in life sciences
news archive
Next meetings
GUIDE Early Summer Meeting 2009
Mechanisms of synaptic communication: Vesicle traffic and Neuronal disease
Search
Please enter your query below and press 'search'
this site
other RuG pages
search

# Course Catalogue: www.tipharma.com



# Basic information to be submitted per course (more information can be found on the linked website)

**Basic information:**

- Course title
- Main category
  - General skills
  - Methodology
  - Therapeutic areas
  - Enabling technologies)
- Sub category (to be defined, depending on outcome of inventory)
- Target group ('PhD students', 'Post-docs', 'PhD's and Post-docs' & 'Other')
- Aim / objective

**Location & organization:**

- Organizer
- Faculty (one of the criteria)
- Location / venue
- Country
- Costs

**Timing & workload:**

- Duration (one of the criteria)
- ECTS points (one of the criteria)
- Frequency (one of the criteria)
- Date of next course
- Methods used
- Examination (one of the criteria)

**Criteria:** (for selection, not for display on site)

- Is the course taught in English?
- Is documentation available? (book, syllabus)
- Is the course open for external researchers?
- What quality assurance system is in place?

**Other:**

- Remarks
- Deep link to site with more information

- *Email address of submitter (needed to ask to keep information updated)*

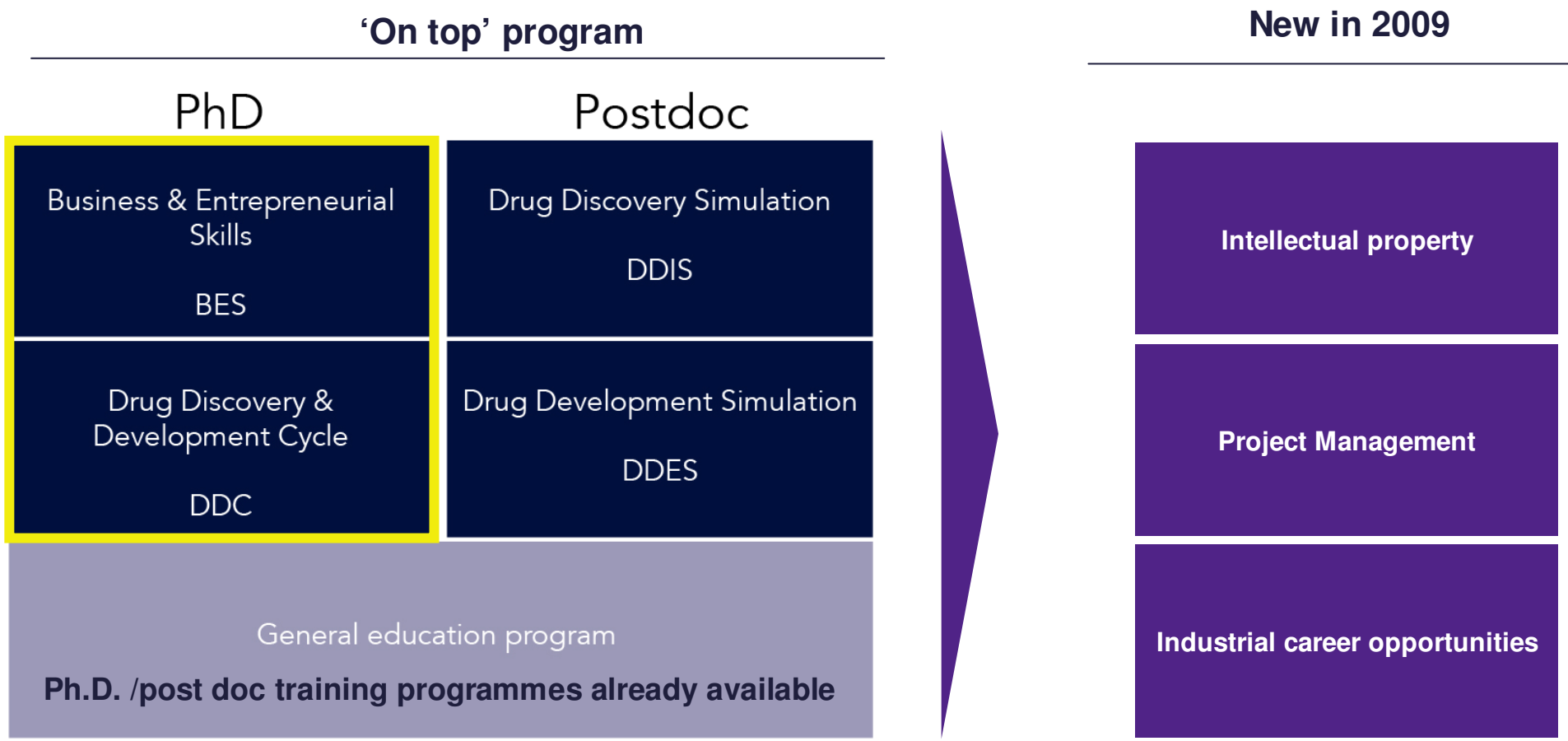
## Courses are included in the inventory if they fulfill a set criteria; these criteria are judged upon by an expert panel (prototype available)

- Criteria to include courses in the EUFEPS training platform:
  - Yes or No criteria:
    - Taught in English
    - Run periodically (at least every two years)
    - ECTS points: at least 1 (=equivalent to 2-3 days)
    - Open for external researchers
    - Course is concluded with an exam
  - To be judged by expert panel:
    - High quality syllabus or documentation available
    - Clear learning objectives
    - Faculty composition

- An expert panel judges these criteria before a course is included in the inventory

- The expert panel consists of:
  - … to be composed … (in progress)

# In 2009 the ‘on top’ program is extended with three new courses



# Drug Discovery Simulation

## a simulation that covers the whole drug discovery process

**General information**
In this course the drug discovery process will be simulated, from the beginning to the end: from target and lead discovery through phases of lead optimization and preclinical safety tests. This TI Pharma course provides its researchers with an interactive experience demonstrating the required competencies of the various players in the drug discovery process.

**Objectives**
Participants will work to achieve the following goals:
- Understanding the discovery process
- Understanding the role played by various relevant disciplines
- Experiencing relevant interactions and interfaces
- Learning the consequences of specific decisions and actions taken
- Learning what actions should be taken when carrying out a "real" process
- Teamwork/networking
- Developing one's own set of learning objectives

**Course duration**
Five full day sessions, including evenings, over a single week (Monday morning through Friday afternoon 2 pm).

**Participation**
The course is targeted at TI Pharma post docs and other industry based researchers. The TI Pharma course 'Drug Discovery & Development Cycle' (DDC) is recommended as a starter.
TI Pharma will build the teams for each course, based on relevant industry background and certain participants' areas of study.

**Location**
De Ruwenberg Conference Centre, Sint-Michielsgestel (www.ruwenberg.nl)

- **real life simulations**
- **5 day courses**
- **working in teams**
- **deliverables**

**www.tipharma.com**

TI PHARMA

# Drug Development Simulation

## from lead optimization via proof of concept to marketing

**General information**
In this course the drug development process will be simulated, from the beginning to the end: from lead optimization through proof of concept phases and clinical studies, culminating in developing marketing strategies. This TI Pharma course provides its researchers with an interactive experience demonstrating the required competencies of the various players in the drug development process.

**Objectives**
Participants will work to achieve the following goals:
- Understanding the development process
- Understanding the role played by various relevant disciplines
- Experiencing relevant interactions and interfaces
- Learning the consequences of specific decisions and actions taken
- Learning what actions should be taken when carrying out a "real" process
- Teamwork/networking
- Developing one's own set of learning objectives

**Course duration**
Five full day sessions, including evenings, over a single week (Monday morning through Friday afternoon 2 pm).

**Participation**
Participation is compulsory for TI Pharma post docs. A basic understanding of the industry's drug development process is a prerequisite for this course.
TI Pharma will build the teams for each course, based on relevant industry background and certain participants' areas of study.

# Drug Discovery/Development Simulations ‘excellent’ for Post Docs

**Work within a team and be a part of a ‘virtual’ pharmaceutical company, in order to develop drugs for a certain therapeutic area and to put them onto the market.**

*“Very instructive and fun as well“*

**Thomas van Es**

Questions?

*“I recommend it to other post docs“*

**Marieke Ruiter**

*“Eye opener! I hope you will experience the same… “*

**Olivier van Beekum**

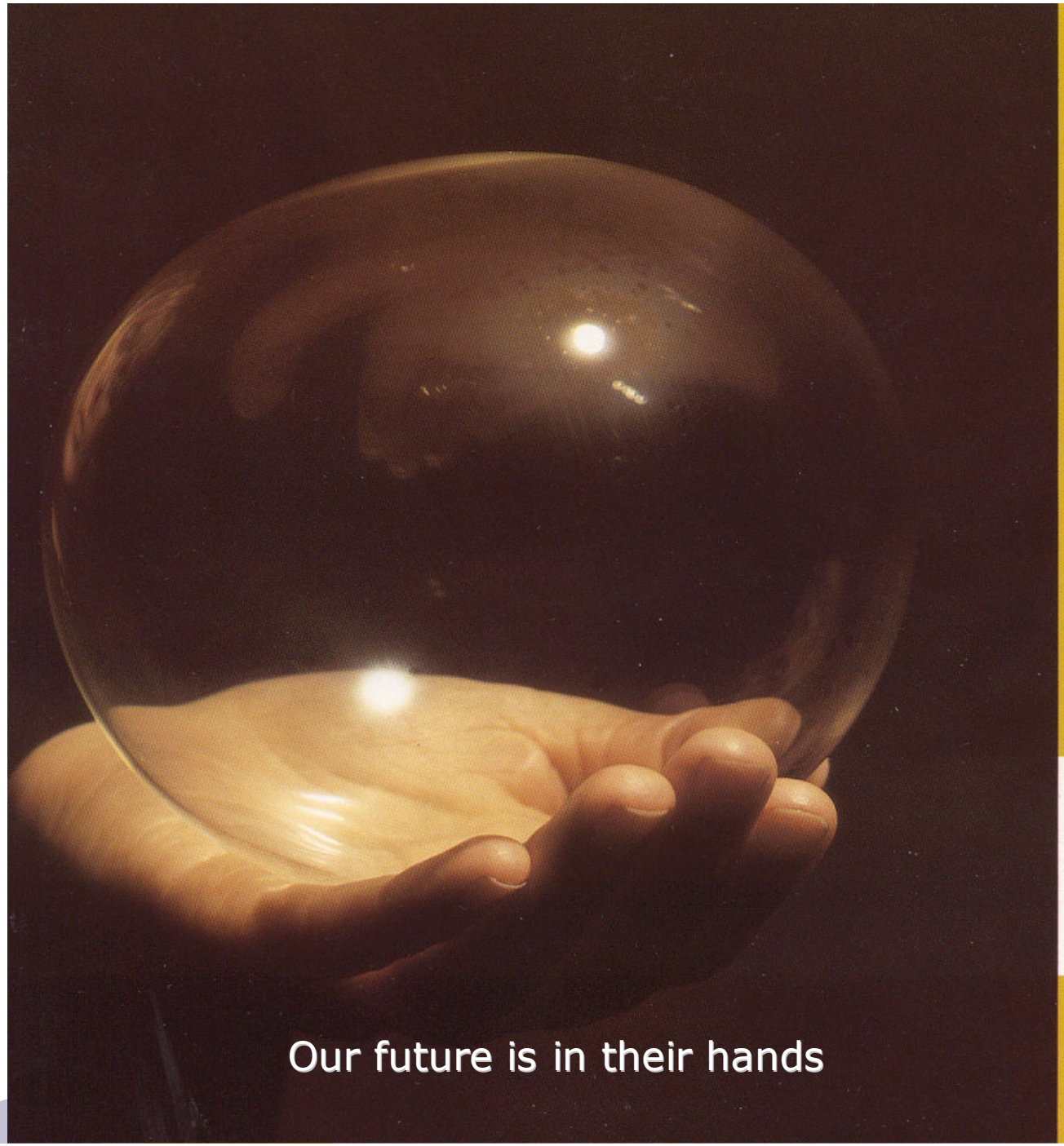
# In 2009 the ‘on top’ program is extended with three new courses

**‘On top’ program**

| PhD | Postdoc |
| --- | --- |
| Business & Entrepreneurial Skills<br>BES | Drug Discovery Simulation<br>DDIS |
| Drug Discovery & Development Cycle<br>DDC | Drug Development Simulation<br>DDES |
| General education program<br>**Ph.D. /post doc training programmes already available** | |

**New in 2009**

- **Intellectual property**
- **Project Management**
- **Industrial career opportunities**


Our future is in their hands