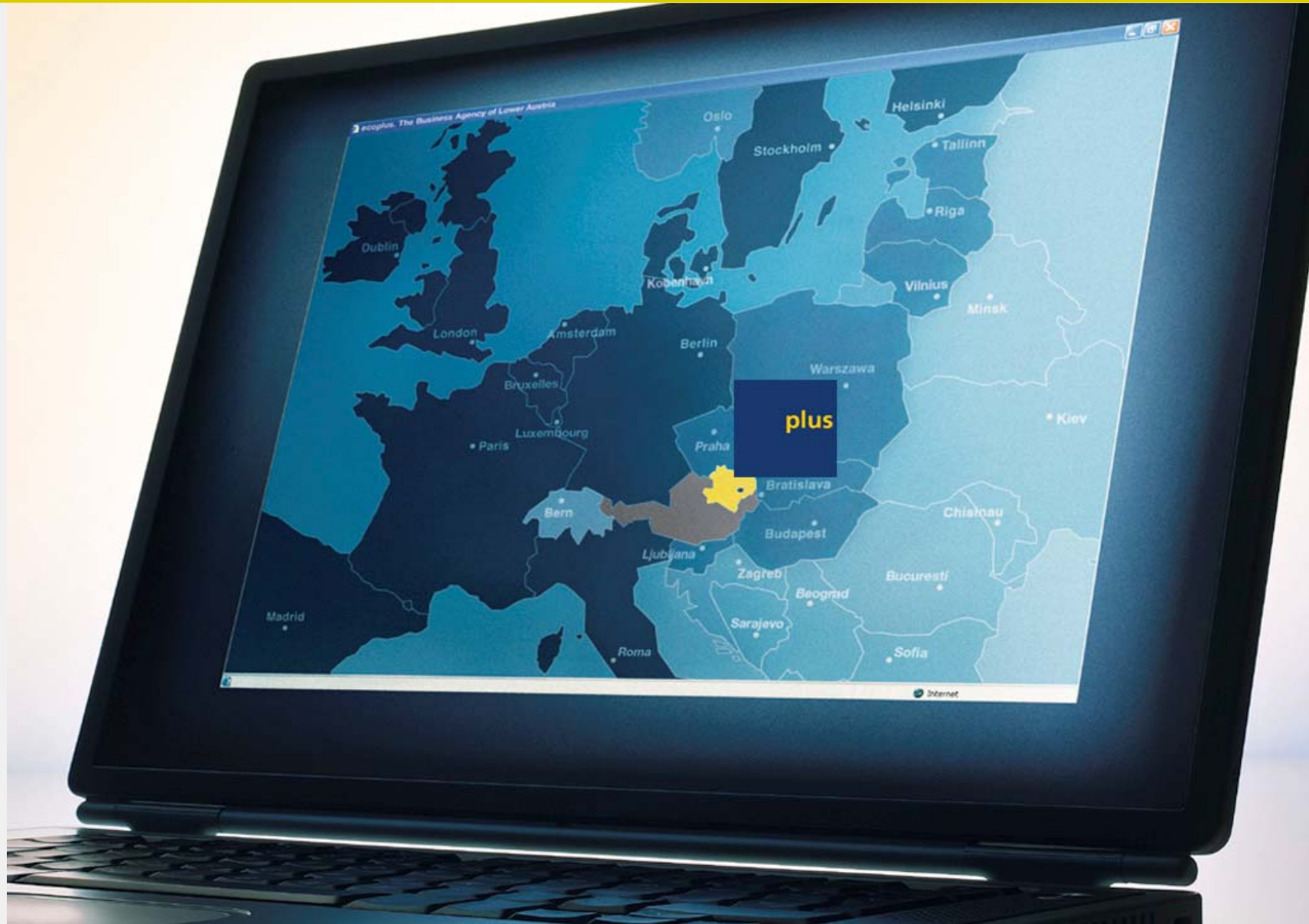


Technopolprogram Lower Austria



Lower Austria ?

biggest federal state of Austria

population:

Inhabitants: 1.600.000
population density: 81 persons/sqkm

capital: Sankt Pölten

economic growth: 2,7% (05)

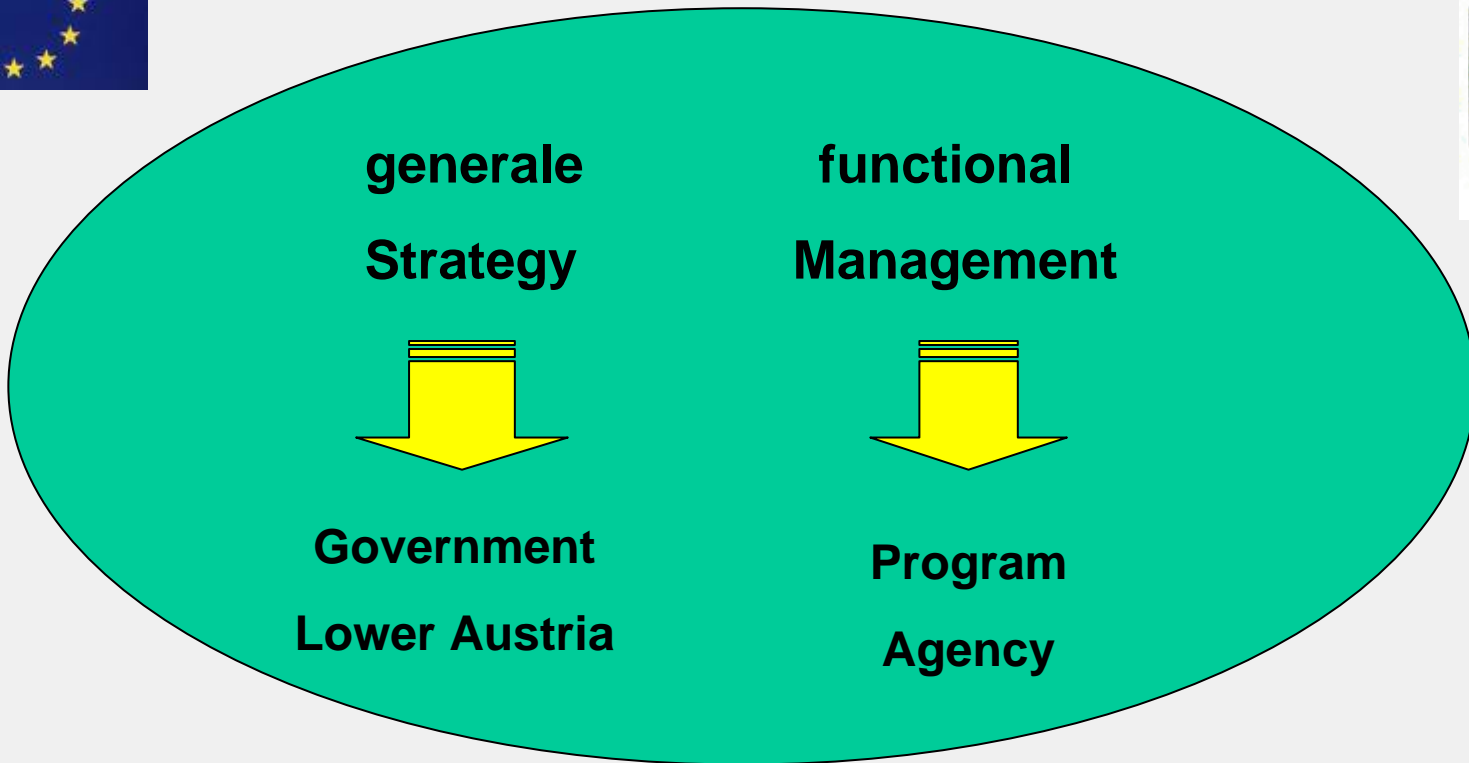
geografic data

total area: 19.174 sqkm
water area: 249 sqkm (1,3 %)
highest point: 2.076 m (Schneeberg)
lowest point: 139 m (Gemeinde Berg)



Technology policy Lower Austria

Technopolprogram Lower Austria



Program characteristics

- **Program design over all**

 - Strategy – Lower Austria

 - Operative Implementation – specialised agencies



Cofinanced by
European Union

- **Program duration:** 4 + 3 years

- **Operative Program management**

 - ecoplus The Business Agency of Lower Austria

 - working plan, action plan

- **Strategical basic conditions**

 - Working agreement (government Lower Austria \Leftrightarrow ecoplus)

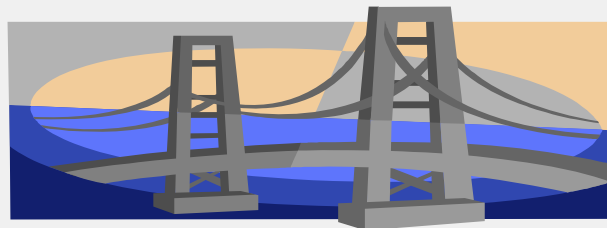
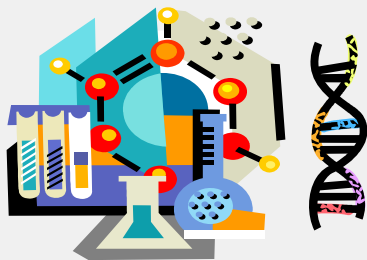
 - Reporting - Monitoring – Evaluation

 - thematical focus

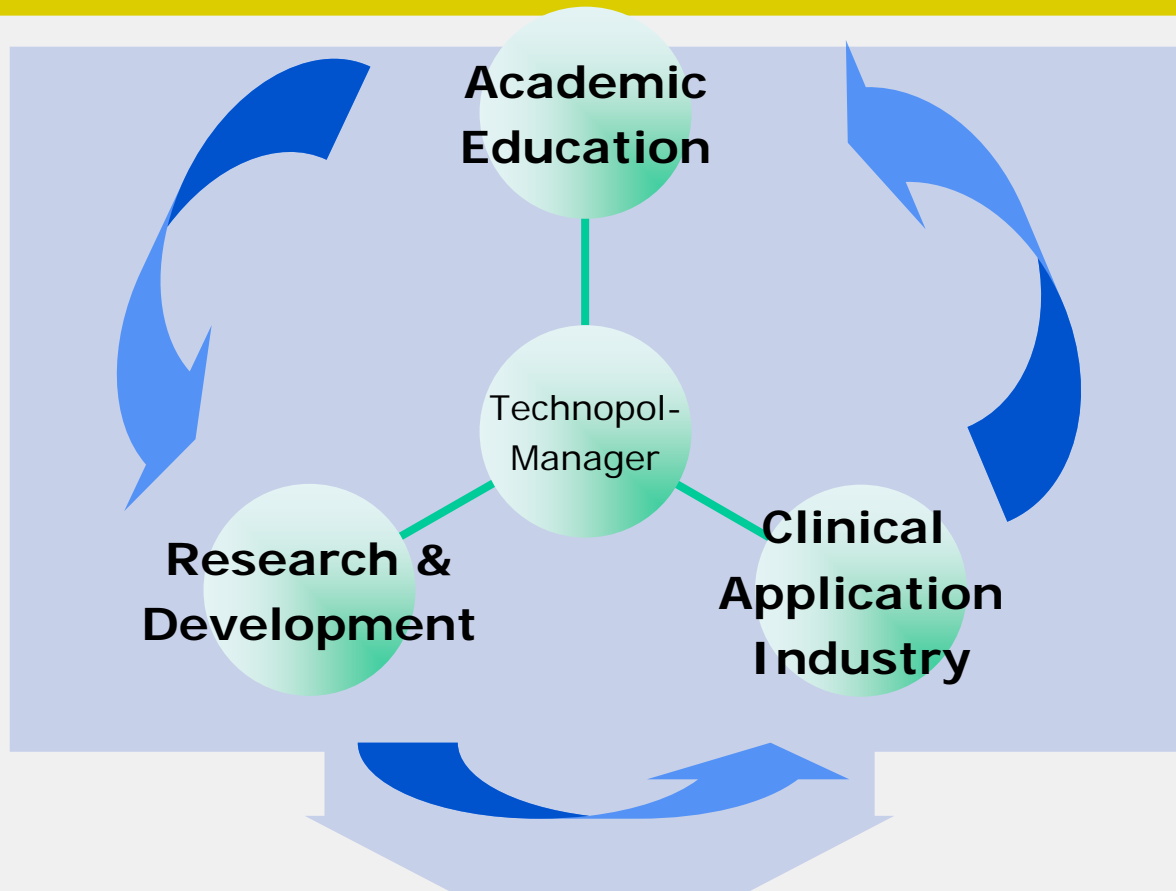
Building bridges between businesses and scientific research

Services

- Create innovation incentives
- Identify project ideas
- Provide coaching to accompany project development
- Grant project support to project carriers
- Create interfaces to public agencies (at federal and provincial level)



Technopolmanagement



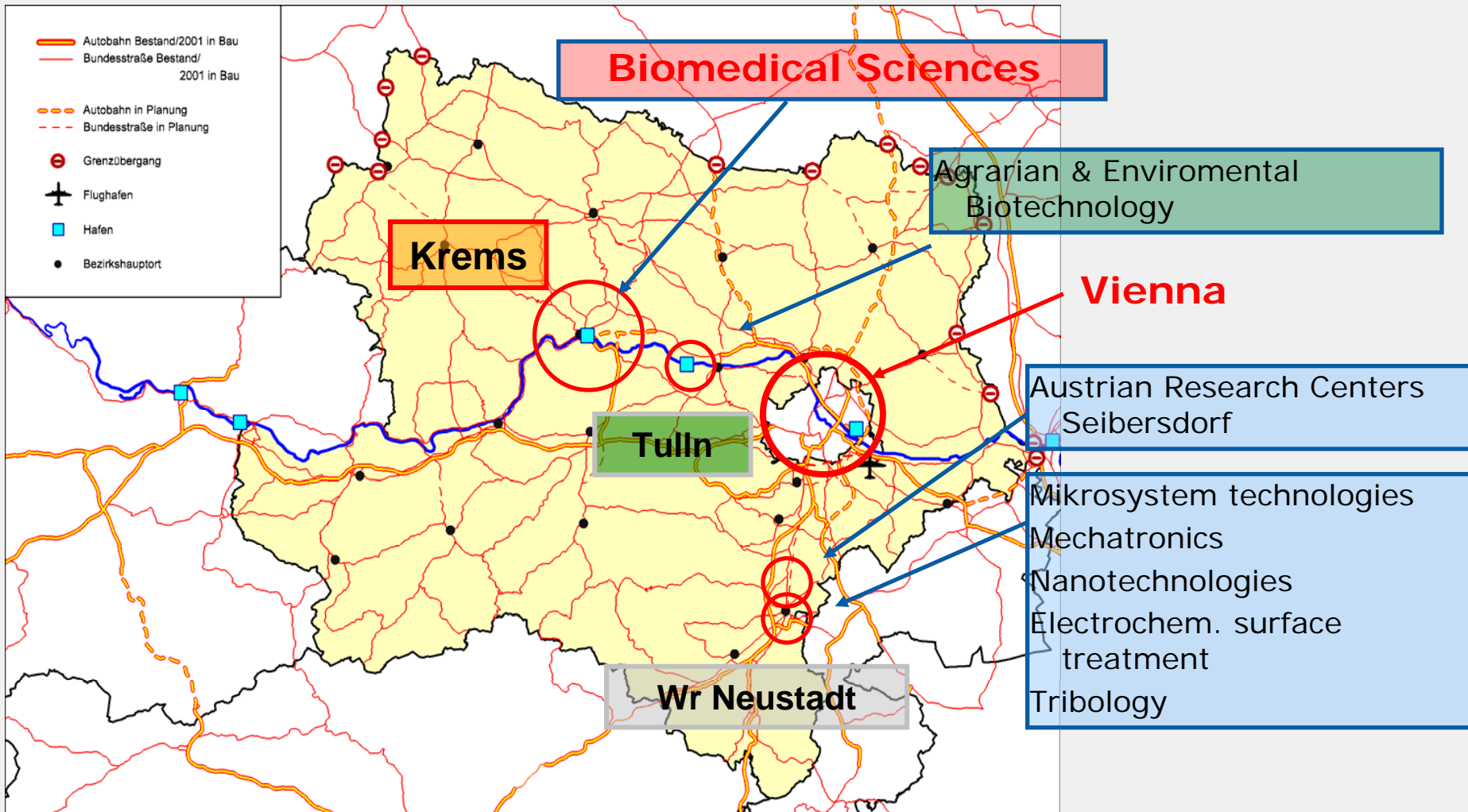
R&D - Projects

Start up / Spinn off

Know How Transfer

Technology focused location development

Technopol Locations in Lower Austria



greater Krems Region



Primary schools	total	9
High Schools	total	5
Higher Technical schools	total	7
Universities of Applied Sciences	total	1
Universities	total	1

Inhabitants	38.000
total area	9.7 mio sqm



BioScience Park Krems

Biotechnology Companies and Cleanroom laboratories

total area 84.000 sqm

Campus Krems

Educational Centers and R&D Laboratories

Gesamtfläche 22.000 sqm

Technopol Krems

CAMPUS KREMS



A: Audimax; B0: Cafeteria; B1: Cafeteria; B2: Center for Building and Leaving; B3: Rectorate, Vice-Rectorate; C0: Library; C1: Library – Reading room; C2: Seminar room, Center for Interdisciplinary Dental Medicine – Office Range; C3: Seminar Rooms, Biomedicine – Office Range; D0: IMC; D1: IMC; D2: Center for Interdisciplinary Dental Medicine– Laboratory Range; D3: Seminar Rooms, Biomedicine – Laboratory Range; E: Cinema in the Kesselhaus, Exhibition, Film Bar; F: Austrian Study Center for Film, Austrian Film Gallery; G: IMC- Fachhochschule Krems; H to M: Existing Buildings; N: Court (NÖBG); O: Campus Kids – Kindergarten; P: Parking blocks; Q: Delivery Court

R&D Laboratories (Cleanrooms)

total 900 sqm

- **15 Departments**

Total number of students: 3.749
from 53 countries
Average age: 40 years

51% in medicine and health courses
19% in communication and IT courses
13% in economics and management courses



- **University Courses**

Total number of university courses: 153
60% medicine and health courses
Total number of seminars: approx. 40
70% in the fields of communication and IT

- **7 Departments**

Total number of students: 1.600

Total number of lecturers/professors: 300



- **Study Courses**

number of Bachelor courses: 7

number of Master courses: 5

Total number of seminars: approx. 40

70% in the fields of communication and IT

Technopol Krems

BIO SCIENCEPARK KREMS



Office, Storage and Seminarrooms

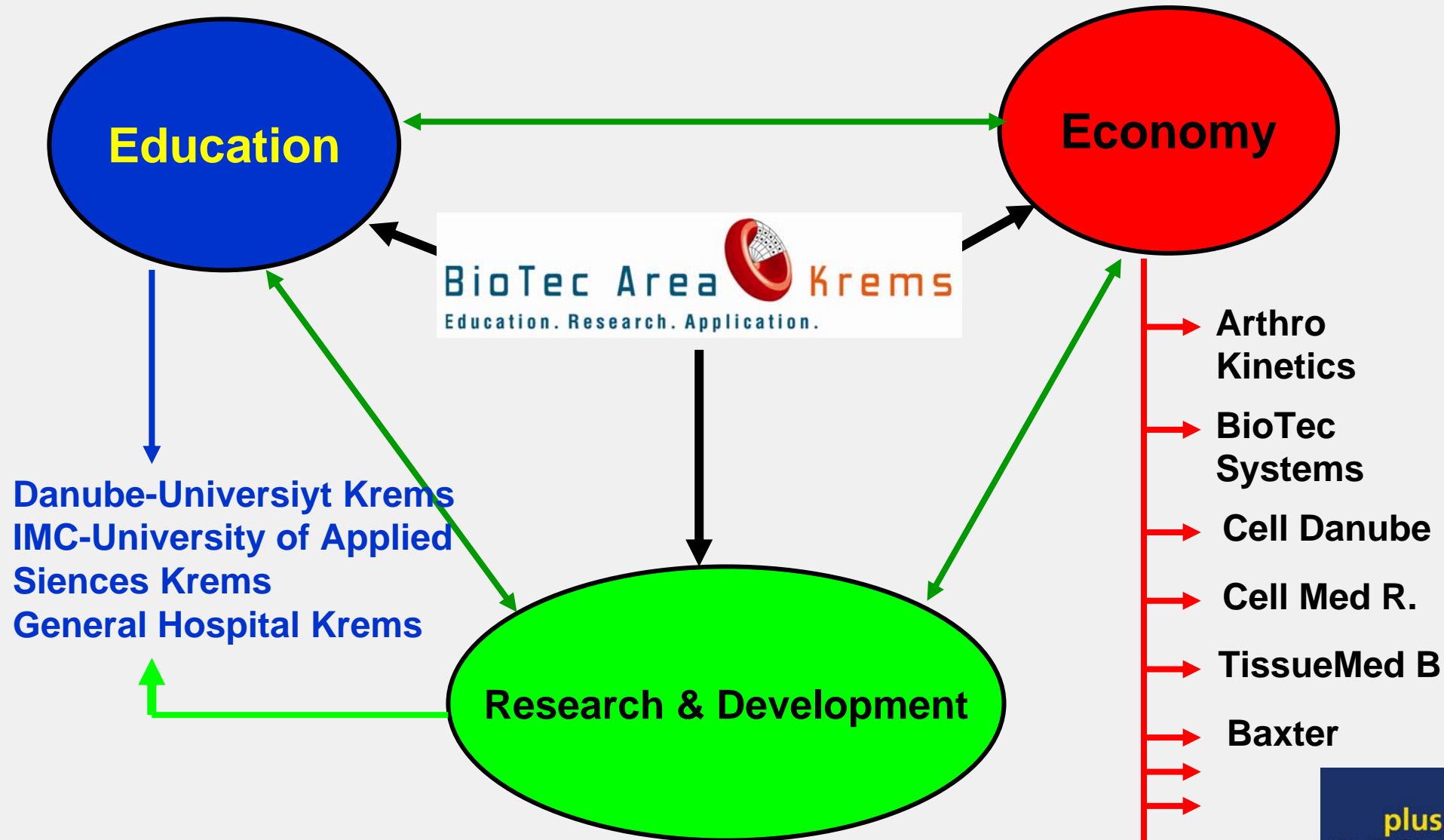
3700 sqm

GMP-Laboratories

2100 sqm

Standardlaboratories

800 sqm



(Bio) Medical Technology

Market Volume 2002: 180 Bill € (expected for 2005)

Annual Growth: 8-10 %

Expected Global Pharmaceutical Market for 2006:

\$ 640-650 Billion having a growth rate of 6-7%

Global Market for Generics in 2006: \$ 23 Billion

Expected annual Growth Rate: > 10%

Pharmaceutical (Medical) Biotechnology:

Annual Growth Rate: 8-30%

USA: Turnover: 105 Bill US\$ (2002)

Europe: Turnover: 37 Bill € (2002)

So called Green/White Biotechnology: Global Turnover:

ca 50 Bill € (2002)

Annual Growth Rate: ca 5%

Information: Reuters Health 2005-10-26

Life Science Kreams

• Research

- **Danube University Kreams**
 - Dep. Clinical Medicine and Biotechnology
 - CD Laboratory (Absorber Technologies)
 - Dep. Clinical Medicine and Neurology
 - Dep. interdisciplinary Dental Medicine
- **IMC-University of Applied Sciences Kreams**
 - Department medical & pharmaceutical Biotechnology



• Education

- Danube University Kreams; **MBA**, Biotech and Pharmamangement
- IMC Kreams; **Bachelor/Master**, Medical and Pharmaceutical Biotechnology

• Incubator / Services

- RIZ Regional Innovation Center nord
- BTZ Biotechnologie Center Kreams
- Biotec Area Kreams Association
- Accent academic StarUp Service



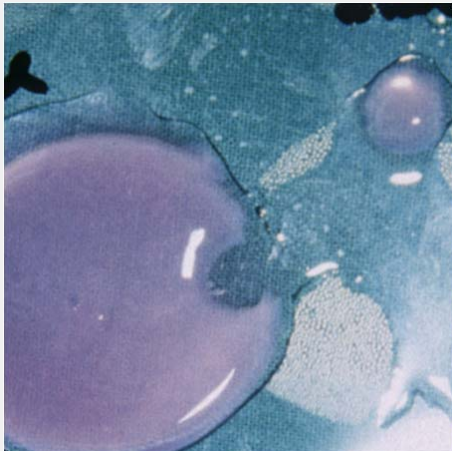
regenerative medicine

Extracorporeal Bloodpurification

Liver supporting systems
Sepsistherapies

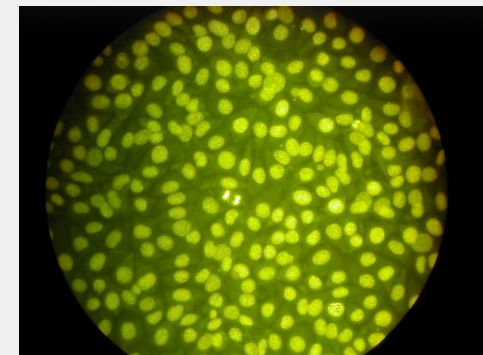
Tissue Engineering

Chondrocyte replacment therapies
Bone subtitution therapies
Biomaterials



Celltherapies

Cancer cell therapies
Muscle cell therapies



Extracorporeal Bloodpurification

Danube University Krems

Dep. Clinical Medicine and Biotechnology

Center for Biomedical Technology

from bench to bedside

Biochemistry R&D group

development of **adsorbers** for extracorporeal blood purification
establishment of appropriate **analytical methods** to quantify the
respective target substances.

adsorbers for binding:

Toxins released due to liver failure

Endotoxins

Pro-inflammatory cytokines

Immunoglobulins and circulatory immunocomplexes

The adsorbers are micro- as well as macroparticles
(average size is 1-10 μm as well as 300-500 μm)

The first Product on clinical Market is the **Prometheus System**



Extracorporeal Bloodpurification

Danube University Krems

Dep. Clinical Medicine and Biotechnology

Center for Biomedical Technology

from bench to bedside

Process Engineering Group

The main focuses of the Process Engineering unit are the development and testing of **membrane and adsorption processing**, the establishment of sieving coefficients for important plasma components (albumin, total protein, HDL, LDL, immunoglobulins, fibrinogen, uremic markers) such as the pressure and flow measurements of the extracorporeal blood purification membranes in order to make a rheological characterization.

adsorber material testing in regards to clinical use in batch-production and whole system testing.



Extracorporeal Bloodpurification

Danube University Krems

Dep. Clinical Medicine and Biotechnology

Center for Biomedical Technology

from bench to bedside

Electronics R&D Group

The working unit of Electronics and Measuring Techniques concentrates on the development of machine systems and electronic building groups for medical technology.

The main focus is therefore the **design of control and security systems for the extracorporeal blood purification machines** based on newly combining membrane and adsorption technologies. Further areas of research include the recording and documentation of biological and physical parameters.



Extracorporeal Bloodpurification

Danube University Krems

Dep. Clinical Medicine and Biotechnology

Center for Biomedical Technology

from bench to bedside

Cell Biology R&D Group

development of new testing systems for testing the **biological compatibility of adsorber** materials

development of extracorporeal blood purification system for **different illness profiles** such as **sepsis** and **multiorgan failure**
Research on new cell culture system and in vitro molecular systems

development of an **endothelial cell biological reactor** for use as an artificial blood vessel during adsorber tests

the unit develops the "MDS System". Combined with human liver cells, the MDS will be able to serve as an **bioartificial liver**



Core Biotechnology Companies

- **Arthro Kinetics GmbH**
- **Biotec Systems GmbH (FMC)**
- **Tissuemed Bioscience GmbH**
- **Cells+Tissue Bank Austria**
- **Cellmed Research GmbH**
- **Cell Danube AG**
- **VSZ GmbH**
- **Baxter Bioscience**





Krems City

See u @ Krems!



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