



ИНСТИТУТ  
ЗА МОЛЕКУЛАРНУ ГЕНЕТИКУ  
И ГЕНЕТИЧКО ИНЖЕЊЕРСТВО  
Универзитет у Београду

INSTITUTE  
OF MOLECULAR GENETICS  
AND GENETIC ENGINEERING  
University of Belgrade

Добре године за нове идеје • Good years for new ideas



# Innovations and Technology transfer in IMGGE challenges and opportunities

**TRANSFERADE 2018**



ФОНД ЗА  
ИНОВАЦИОНУ  
ДЕЛАТНОСТ



**Dr Jelena Begović**  
director of IMGGE



- ◆ IMGGE - intro
- ◆ TECHNOLOGY TRANSFER IN IMGGE
- ◆ OPEN INNOVATION
- ◆ IMGGE - INDUSTRY PARTNERSHIP

1986



## Affiliated Centre of International Centre for Genetic Engineering and Biotechnology (ICGEB)



Seeking fundamental knowledge:

molecular biology

molecular genetics

recombinant DNA technology

biotechnology

use

apply

to improve the quality of life...



**Develop top-quality expertise and  
translate our knowledge into  
practice**



**enhance health**

**improve food**

**help agriculture**

**protect the environment**





## Strategy of development of IMGGE 2016-2020



# MOLECULAR GENETICS AND BIOMEDICINE

## BIOTECHNOLOGY



### EDUCATION



### SERVICES



### FUNDAMENTAL RESEARCH



Staff 120

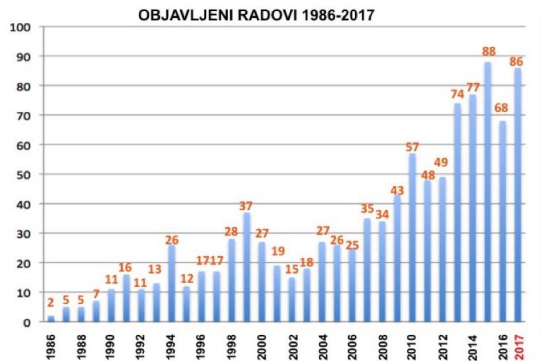


### INOVATIONS



# IMGGE 2013-2018

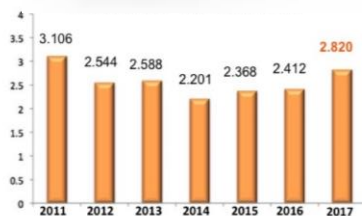
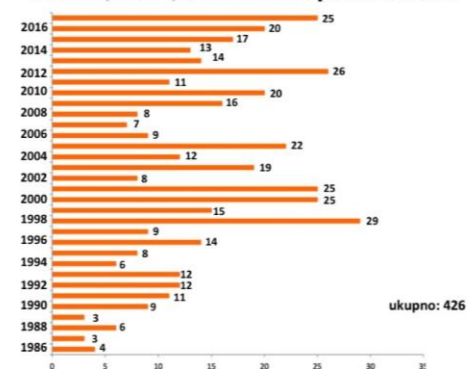




# KPI



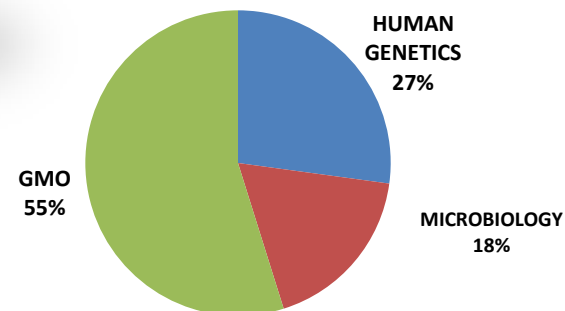
**Doktorati, masteri, završni radovi i diplomski 1986-2017**



**Approx. 1000 of analyses per year**



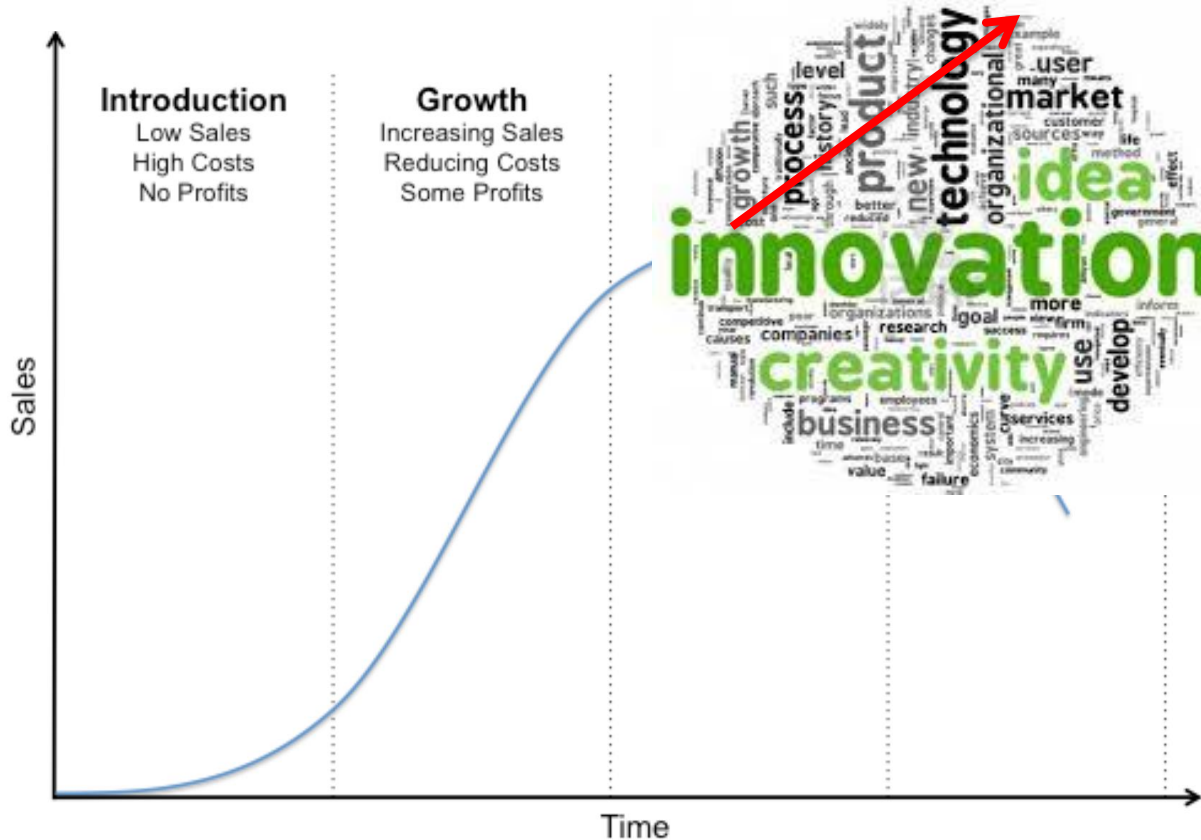
**Expertise  
or  
Uniqueness  
or  
Innovative?**



# Strategies for the FUTURE



## The Life Cycle of an Scientific Organisation



**INNOVATIONS** will become an integral part  
of all IMGGE activities

## SECTOR FOR TECHNOLOGY TRANSFER



### identification

the results of the research within the IMGGE that have a potential commercial value

### IP protection



### commercialization

of the results of the scientific work

**market placement**  
of Innovations and  
new technologies

encouraging of  
**knowledge transfer**  
between IMGGE and  
industry

commercial potential  
**assessment** of  
results of the  
research

**linking** relevant entities,  
**networking** and  
**collaborations**  
for technology transfer

**building** of innovation  
and IP protection  
**awareness**

# TECHNOLOGY TRANSFER – A LINK BETWEEN RESEARCH AND INDUSTRY



# TRANSFORMATION IS A PROCESS

## STRATEGY



## PLANNING



## FINANCIAL RESOURCES



## HUMAN RESOURCES



## KNOWLEDGE - CONSULTING WITH THE EXPERTS

## TAKING THE RISK



## LUCK



## STEPS IN LIFE CYCLE OF INNOVATION

RESEARCH

DISCOVERY

DEVELOPMENT

PATENTING

PRODUCTION

MARKETING

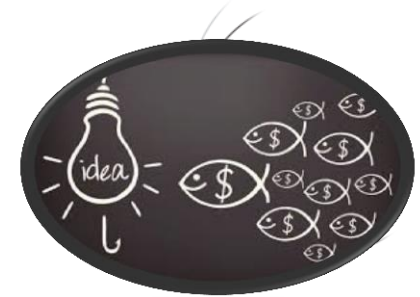
ADOPTION



**Long-term and uncertain road**

# Technology Transfer programs are expensive

- It takes 10 to 15 years for an office to generate enough revenue to off-set their expenses
- One “**winner**” may make enough money to pay for an office...but most technologies do not generate significant income



## Serbia Innovation Project



# Institute - industry partnerships



**EXPECTATIONS FROM INDUSTRY**  
**ACADEMIC RESEARCH FREEDOM**  
**ROLE OF GOVERNMENT**



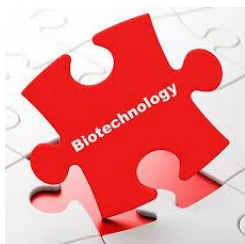
**Technology Transfer is a contact sport...**  
**it is about building relationships**



## COLLABORATING WITH THE INDUSTRY R&D



## Biomedicine



- Immunex, Turkey **imuneks***Farma*
- STEM ART d.o.o., Serbia
- Educell cell therapy service, Ltd., Slovenia
- Surgical Center Toš ,Ltd., Ptuj, Slovenia
- Complete Genomics Inc., USA
- Phytonet doo, Beograd



**Genetic test** for women's reproductive health improvement

**Innovative portals** for diseases

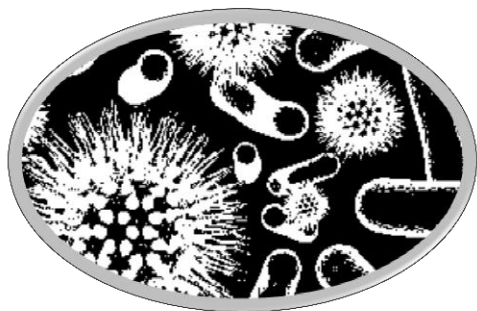
**SensORing**  
**molecular sensor** for malignancy screening




Development of **NGS libraries**

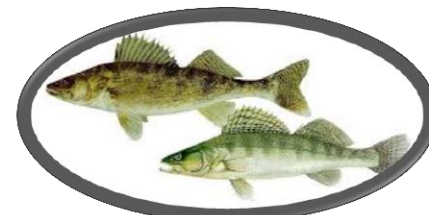
Closed **system for isolation** of Bone Marrow **Multipotent Stromal Cells**

**Compounds** for the topical application in the **skin protection** against UV light

## Microorganisms as probiotics



- Phytonet doo, Beograd  PHYTONET
- Medico Domus, Serbia
- BluestonePharmA, Switzerland  BLUESTONE PHARMA®
- VS Koker, Serbia
- Invetlab doo, Adaševci, Serbia  Invetlab



## Microorganisms in agriculture



- Agrounik doo, Šimanovci
- Biofor Systems doo, Beograd
- Supstrati Maki D.O.O, Grgurevci, Serbia



**Multifunctional microbial  
solution for healthy soil**

**Products for the treatment  
of plant pathogens**

**Innovative technological  
process for improved production of  
vermicompost**

## Microorganisms in environment protection



- Bioplastech Ltd., Ireland
- AXSYNTHA d.o.o. Šabac
- Esensa doo, Belgrade



**The upcycling of waste plastic packaging  
material to a biodegradable plastic**

**Bioplastic**

**Microorganism communities for  
biodegradation of polyester resin waste in  
sanitary ware production**

## Microorganisms in food production



- CSK Food Enrichment, Netherlands
- Invetlab doo, Adaševci, Serbia



## Development of starter cultures for cheese and yoghurt production





- Acies Bio, Slovenia



## ZEOBION

innovative product for DNA isolation





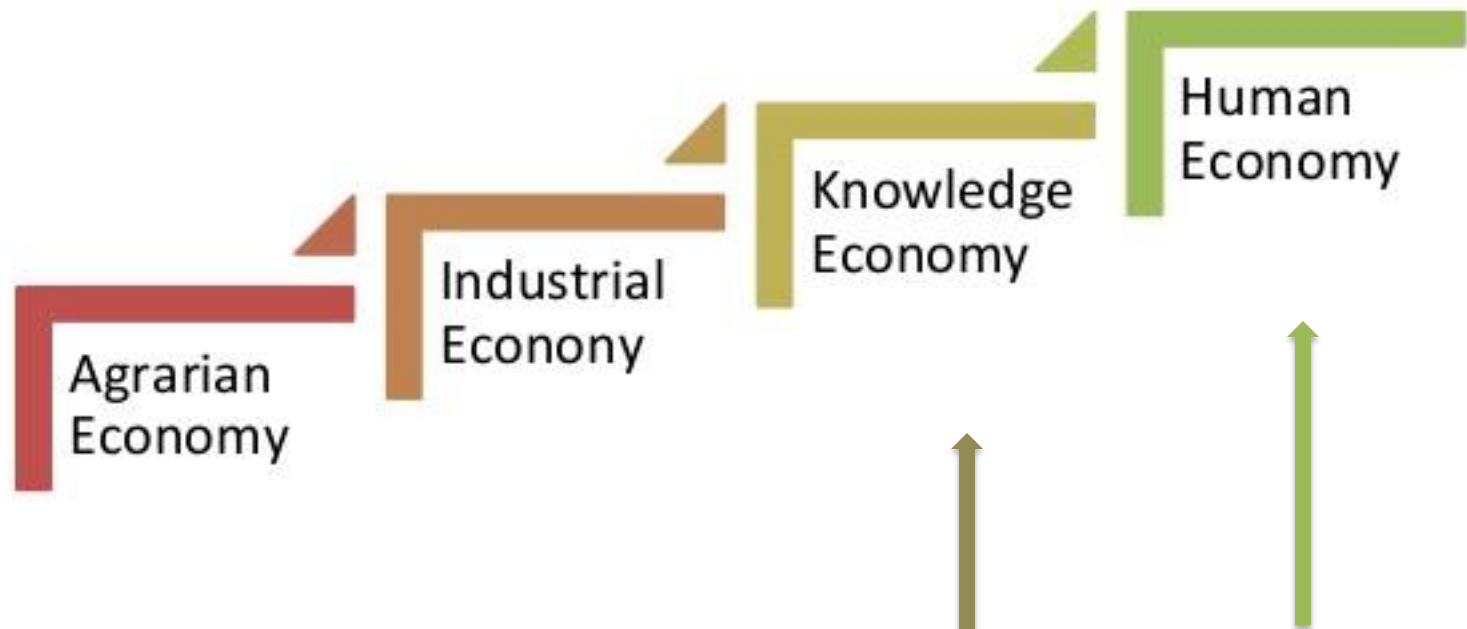
**START-UP COMPANY** established in 2016  
with the aim of development and  
commercialization of innovations in  
biotechnology



PCT/RS2015/000027



# Towards a Human Economy



# GOALS for the future:



**We want to become :**

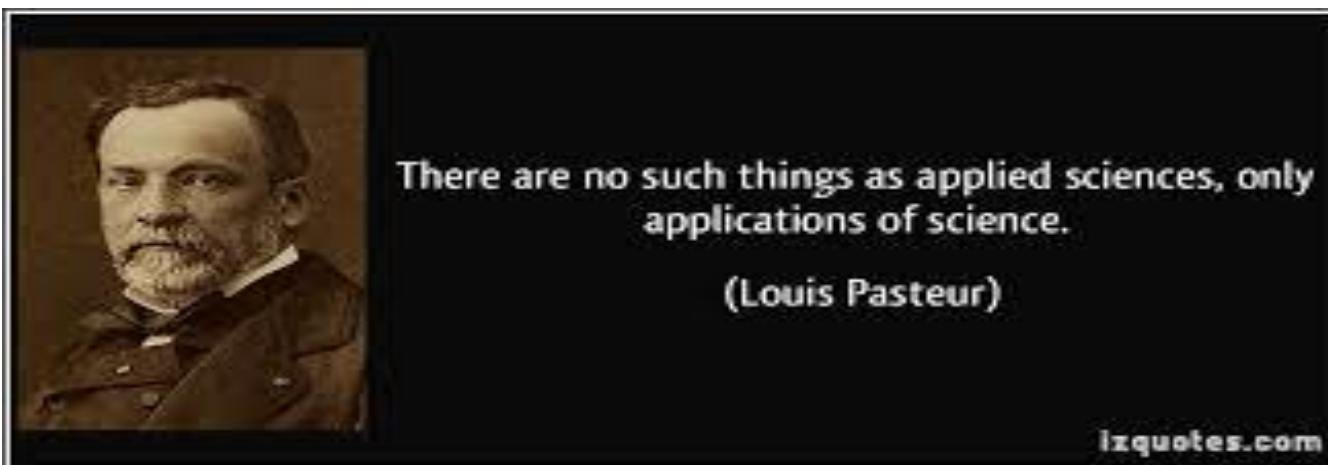
**A Scientific Research Institute – leader in the region**

**University Institute – Educational Center**

**A center for international cooperation**

**A R&D innovator for the industry – TOWARDS OPEN**





**THANK YOU FOR YOUR ATTENTION**