

**Mendel  
University  
in Brno**



**8. 12. 2014, Brussels**

**Prepared by:  
MVDr. Ing. Václav Trojan  
Deputy Head  
Department of Plant Biology**



**PoISCA MEETING**



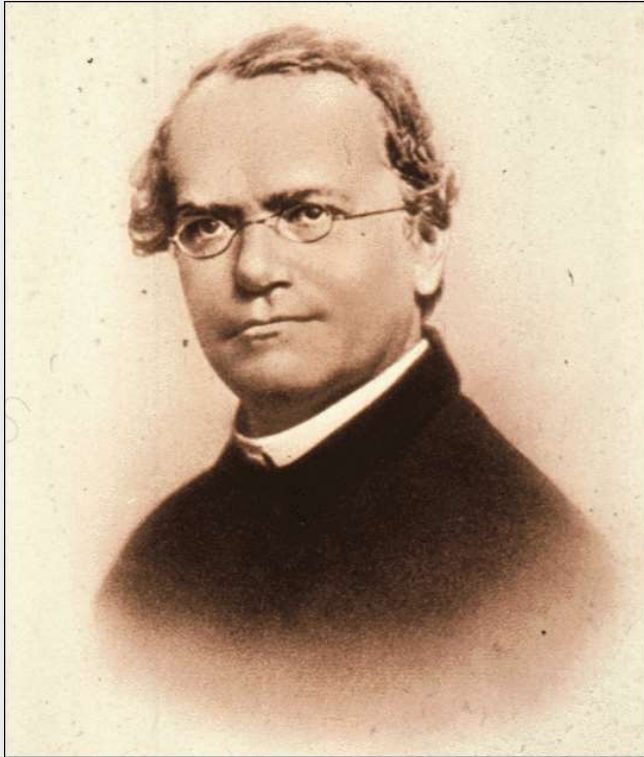
**Rector**

**professor Ladislav Havel**

# Brno – the second largest city, Czech Rep.



# Gregor Johann Mendel (1822-1884)



- **Laid the foundations of genetics**
- **1843:**  
entered monastic life in the Augustinian Abbey of St. Thomas in Brno
- **1865:**  
presented his theory on transmitting the hereditary traits
- **1866:**  
published the "Experiments with Plant Hybrids" monograph

*Gregor Mendel*

# University structure



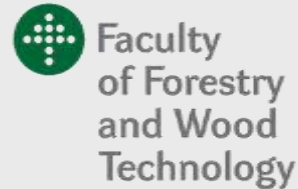
ca. 2,800 students



ca. 4,000 students



ca. 700 students



ca. 1,800 students



ca. 1,200 students



ca. 10,500 students

# University Farm in Žabčice



# University Forest Reserve in Křtiny



# Botanical Garden in the Brno Campus



# Department of Plant Biology



- new facilities
- greenhouse
- GMO laboratories

# Teaching

Plant anatomy and morphology

Biology of plant cell

Botany

Cytology

Experimental morphology

Plant embryology

Plant physiology

Crop physiology

Genetic diversity

Genetics

Plant genetics

Gene engineering

Hormonology

Molecular biology

Secondary metabolites

Plant biotechnologies

Tissue cultures

GMO in Agriculture

# Research

**Group of Plant Physiology**

**Group of Tissue Cultures**

**Group of Molecular Biology**

**Group of Botany**

# Projects and cooperation on national and international level

Operational  
programme



education for competitiveness



GAČR

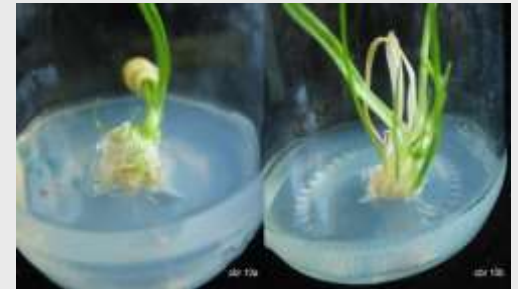


TAČR



# GS , HPLC

- Influence of fluoranthene into tobacco tissue cultures  $^{14}\text{C}$ -FLT, PAH - polyaromatic hydrocarbons
- Secondary metabolites
- Garlic resistance against viral diseases /cooperation with private companies/



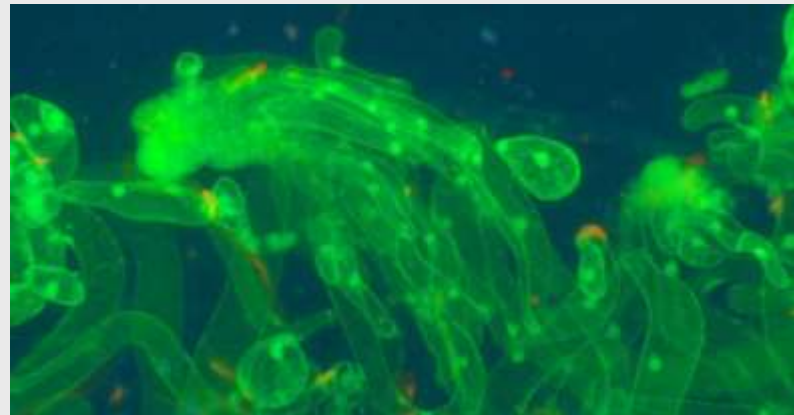
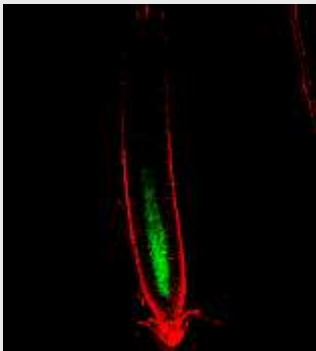
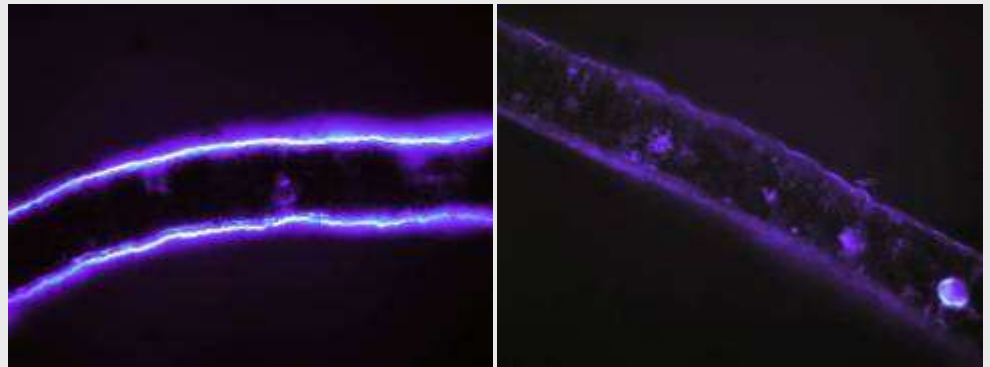
# Tissue cultures

- *Aesculus hippocastanum* resistance to *Cameraria ohridella*
- Somatic embryogenesis – *Abies alba*, *Picea abies*



# Microscopy

- Optical, fluorescent, confocal and inverted



# Laboratoř molekulární biologie

- Izolace RNA, přepis do cDNA, standardní PCR, gradientové PCR, sekvenace analýza exprese genů (qPCR)
- Biosyntetická dráha anthokyanů u barevné pšenice (*T. aestivum* L.)
- Exprese a lokalizace PIN proteinů u rostlin hrachu (*Pisum sativum*) a *Arabidopsis thaliana*
- Rezistence hrachu k viru mozaiky



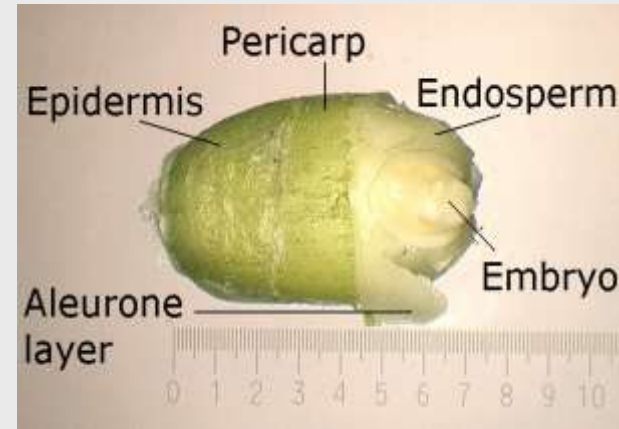
# Laboratories GMO

- Cultivation and manipulation with transgenic plants
- *Pisum sativum*
- *Arabidopsis thaliana*



# Wheat for your better life

- *Triticum aestivum* L.



N (67 Novosibirskaya) – white pericarp

ANK (ANK-28B) and AA (Abyssinskaya Arraseita) – purple pericarp

UC (UC 66049) and TBS (Tschemmaks Blaukörniger Sommerweizen) – blue aleurone

