



DEPARTMENT

PHYSIOLOGY and BIOCHEMISTRY of PLANTS and MICROORGANISMS SCHOOL of BIOLOGY

V. N. Karazin Kharkiv National University



TEACHERS OF THE DEPARTMENT



Andrii Schogolev

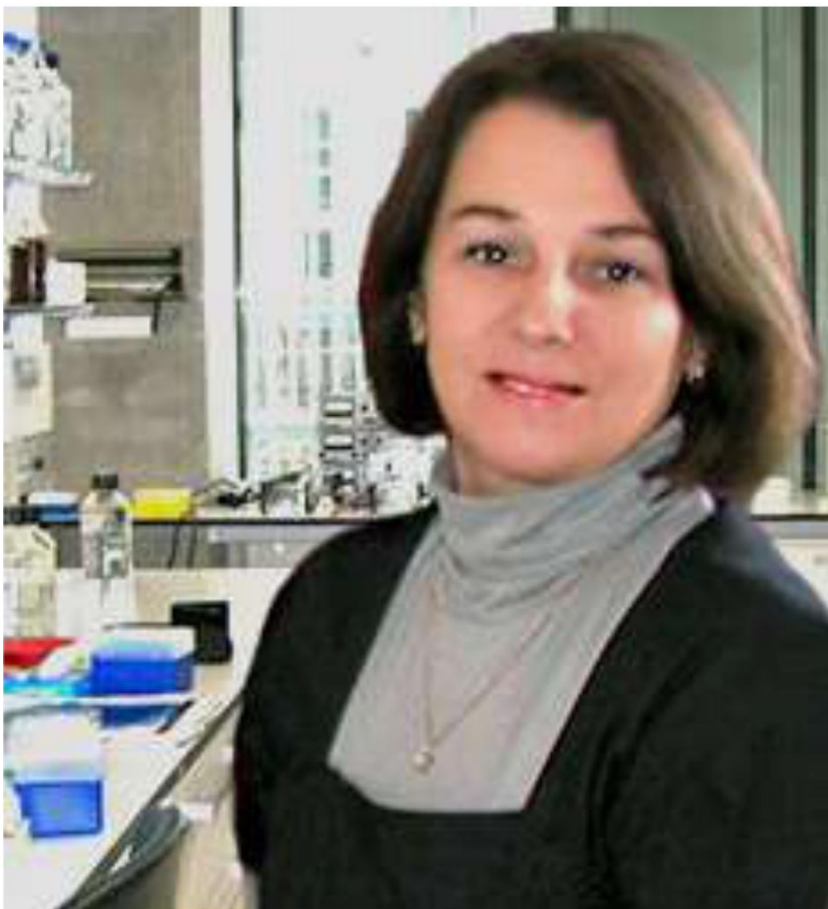
**associate professor
the acting head of
the department**

Yukhno Yulia

associate professor

Iryna Raevska

teacher



Olga Avksentieva

associate professor



Olga Vinnikova

associate professor



Yuriy Karpets

professor



**Callus morphogenesis
in vitro**



Research soil microflora

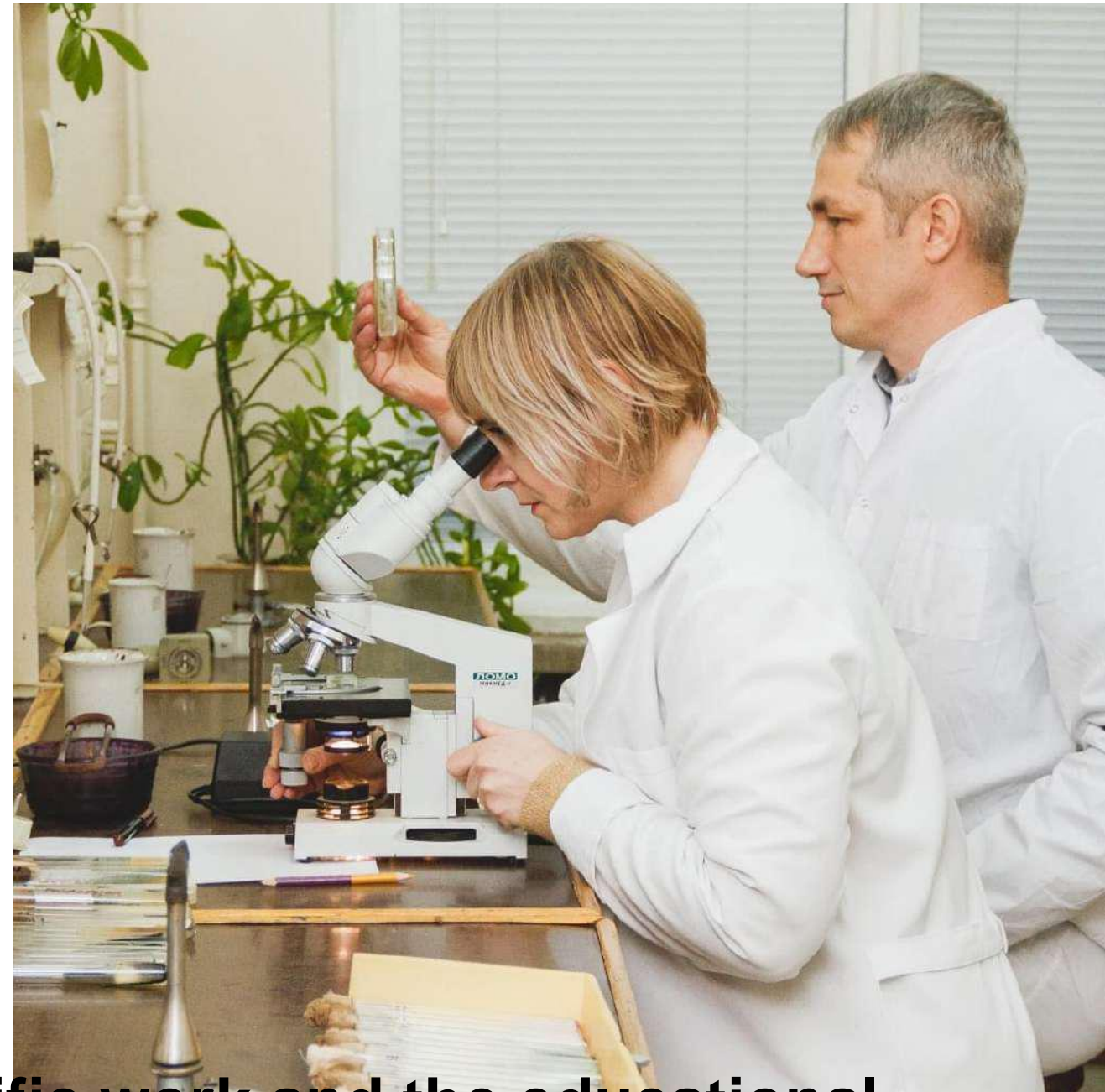


**Mechanisms of plant
resistant**

The department trains specialists in two specializations - "Physiology and biochemistry of plants" and "Microbiology and virology".

The department have:

- ▶ laboratory of culture plant cells and tissues in vitro
- ▶ experimental plot for field experiments
- ▶ grow chamber plants in artificial climate conditions
- ▶ laminar box for working with microorganisms
- ▶ room for autoclaving



It is created and maintained for scientific work and the educational process **collection of soil micromycetes and microalgae. Collection monogenic and digenedominant, almost isogenic lines (near isogenic lines) *Triticum aestivum* L. by control genes type of development of *VRN* (vernalization) and photoperiodic sensitivity of *PPD* (photoperiod); and collection of soybean isolines *Glycyne Max* (Merr.) L. by the early development control *E* genes.**



- ▶ Problems and research methods in physiology, plant biochemistry and microbiology.
- ▶ Biology of mineral nutrition of plants.
- ▶ Intracellular signal systems and mechanisms of adaptability of plants and microorganisms.
- ▶ Ecophysiology of plants and microorganisms.
- ▶ Biology, metabolism and systematics of microorganisms.
- ▶ Quality control of plant raw materials and microbiological standards.
- ▶ Applied biochemistry and biotechnology of plants.
- ▶ Methods of biochemical analysis of plants.
- ▶ Isolation and identification of microorganisms.
- ▶ Basic methods of sanitary, soil and water microbiology.
- ▶ Methods of in vitro culture of higher plants.
- ▶ Educational and production practice / 3rd year of study

- ▶ Basics of bioethics and biosafety
- ▶ Applied biology

Specializations:

"Physiology and biochemistry of plants"

- ▶ Modern phytohormonology, symbiogenetics of plants
- ▶ Photosynthesis and production process
- ▶ Genetic engineering of plants
- ▶ Systematic regulation ontogenesis of plants

"Microbiology and Virology"

- ▶ Antibiotics
- ▶ Theoretical and applied genetic engineering microorganisms
- ▶ Industrial microbiology
- ▶ Mechanisms of interaction plant-microorganism
- ▶ Biological bases infectious processes

- ▶ Special course "Molecular-biological methods of research of physiological processes of plants and microorganisms"
- ▶ Special course "Methods of metabolomics and proteomics in plant physiology and microbiology"

Employment:

- ▶ in biochemical, microbiological (bacteriological), clinical and sanitary-epidemiological **laboratories**
- ▶ in **research institutions** biological, medical, pharmaceutical and agricultural profiles
- ▶ teachers of biological disciplines in secondary and higher education **educational institutions**
- ▶ at **enterprises** biotechnological, microbiological and agricultural profile
- ▶ continuing education in **graduate school** department or abroad

Drich Anastasia

I work at a yeast factory as a microbiologist.

My duties include control of incoming raw materials, control of finished products, control of sanitary hygienic condition production, maintenance and cultivation of yeast culture, control of yeast maturation processes at all stages of production:

starting from a jamb with pure culture, then in Carlsberg flasks, then in fermenters, on separation, filtration and directly in the formation of finished yeast for sale in Ukraine and export.



EMPLOYMENT AND GRADUATES OF THE DEPARTMENT

Dmytro Hlushach

I work as a laboratory technician at the French international company "Maltyrop LLC Ukraine" from production

malt, which is represented in 14 countries by 24 plants.

Responsibilities: participation in the incoming control of raw materials, analysis of the finished product,

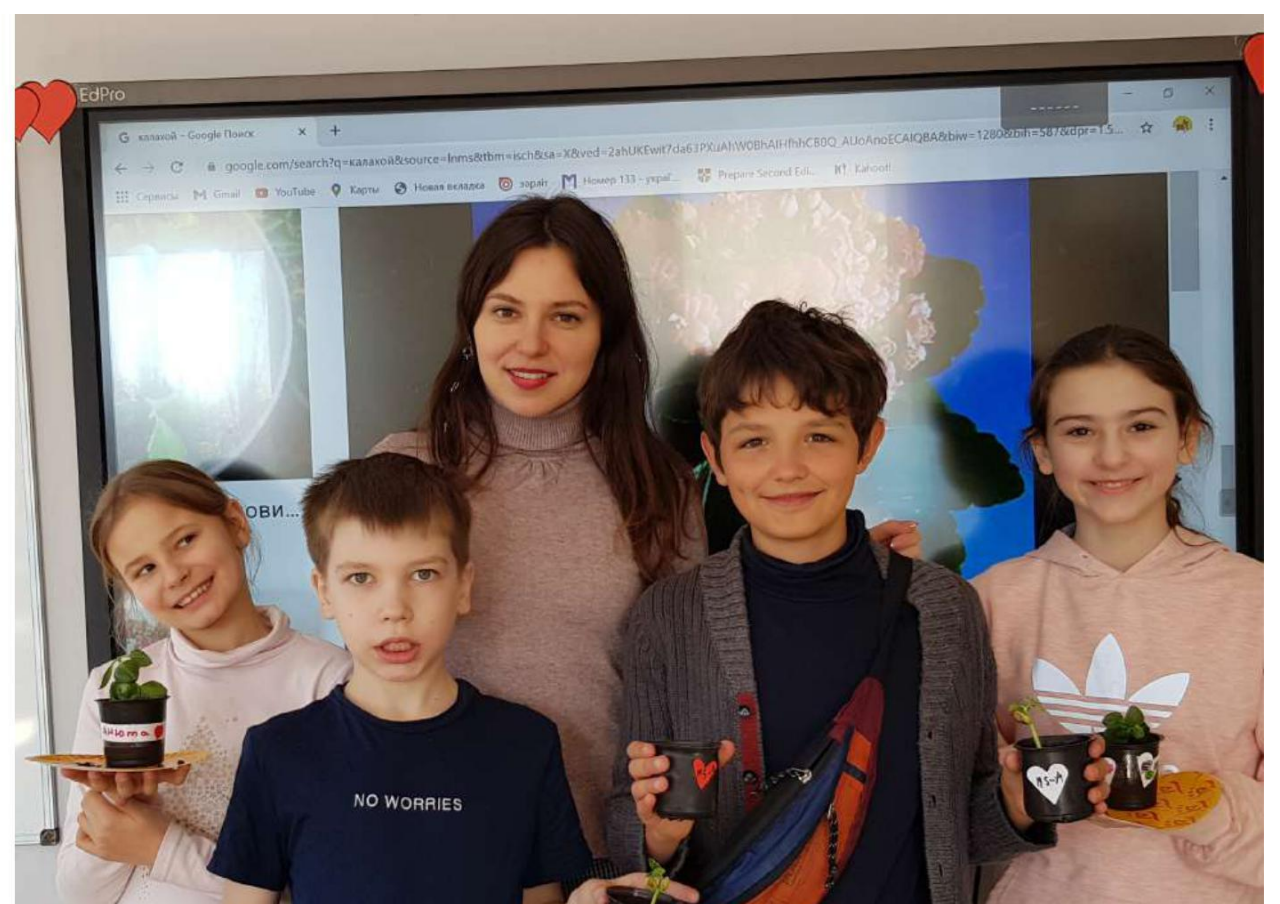
statistical data analysis,

search for relationships between indicators of raw materials and finished products, construction of models, participation in the process of approval of purchases, drawing up reports, experimental work, participation in the development and maintenance of documentation of standards (ISO) 9001 and 22000), metrological control of equipment, work with third-party laboratories and elevators. Development of new methods of control of raw materials and finished products.



Ilya Brusyanskyi

Head of the embryological laboratory, senior biologist of the Mother and Child Clinic in Kyiv.



Victoria Chumakova

I work in Kharkiv private lyceum "School "Ranok" as a biology teacher. I prepare students for external examinations, olympiads.

EMPLOYMENT AND GRADUATES OF THE DEPARTMENT

Kateryna Takoeva

Bacteriologist at DP

"KHARKIV

REGIONAL SCIENTIFIC -

PRODUCTION CENTER

STANDARDIZATION, METROLOGY

AND CERTIFICATION".

Conducting microbiological

research of food

products, drinks and

perfumery and cosmetics

products for compliance with state and international quality standards,

in particular, the detection of sanitary-indicative (MAFAM, bacteria of

the *Escherichia coli* group, yeast and molds) and opportunistic

microorganisms (*E.coli*, *S.Aureus*, *Salmonella* spp, *B.Cereus*, *C.*

***perfringens*). Control of biofouling of surfaces at various industries.**

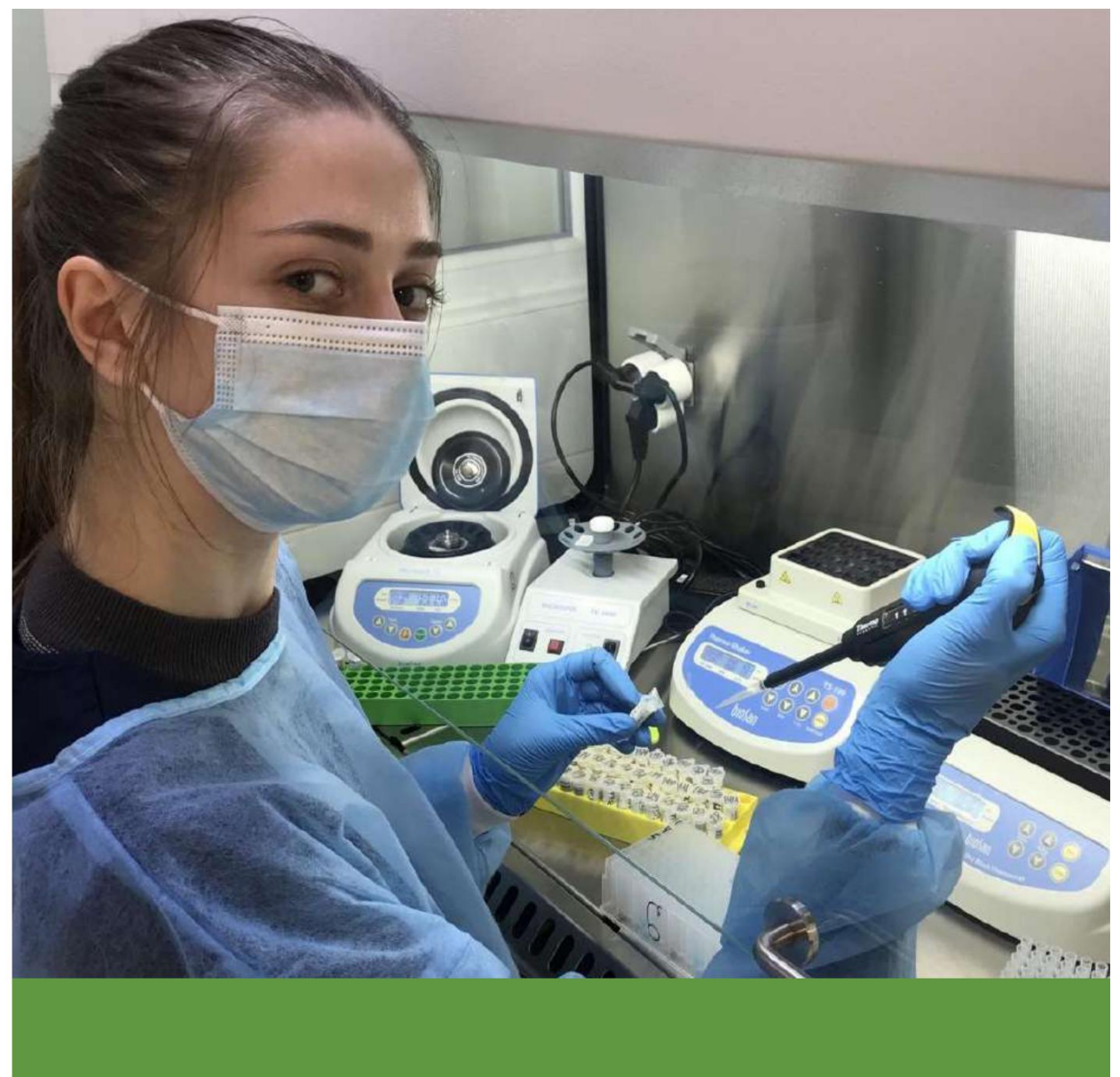


I work in the vet clinic "Dog and

Cat", as a laboratory doctor. I

perform clinical, biochemical

and cytological analyses.



I work in the "On Clinic" laboratory.

I am doing PCR analyses.

EMPLOYMENT AND GRADUATES OF THE DEPARTMENT



Oleksiy Tyshchenko

I work as a clinical embryologist in the clinic of Prof. Feskova. A.M. Center for Human Reproduction. Work experience - 15 years. Immediately after graduation. I got into it by accident (absolutely) and stayed ... Officially, my position is called "Biologist", since there is no department of embryology in Ukraine and they do not train such specialists...(.



Vladyslav Telychko

**PhD student, Attila Toth Lab
Institute of Physiological
Chemistry Medical Faculty,
Carl Gustav Carus Dresden
University of Technology.**



Cherepashuk Ivan

**Postgraduate student of the
Department of Cell Biology,
Charles University, Prague. I
study the evolution of cellular
processes with the help of peptide
libraries and artificial intelligence.**