



Stephan Angeloff Institute of Microbiology

**76 years after foundation, 19 years – member
of Pasteur Network**

Stephan Angeloff Institute of Microbiology

- ❑ History: Founded in 1947, in 2004 it was affiliated with the Network, at that time known as the "Institute Pasteur International Network"
- ❑ 163 staff, 78 scientists, 65 doctors, 7 doctors of science
- ❑ 9 full professors, 20 associate professors
- ❑ 45 assistant professors
- ❑ Two academicians, one corr. member of Bulgarian Academy of Sciences

- ❑ Seven of our scientists are awarded the most prestigious "Pythagoras" scientific award, and two of them are in the ranking of Stanford University for the top 2% of the most significant scientists in their field.
- ❑ Our mission is to make the microbiology popular in Bulgaria and to carry out scientific research in areas important to society.
- ❑ Our priority is to support the career development of all researchers with high potential.



The Institute's priorities

Part of Bulgarian Academy of Sciences,
Research division
Biomedicine and Quality of Life

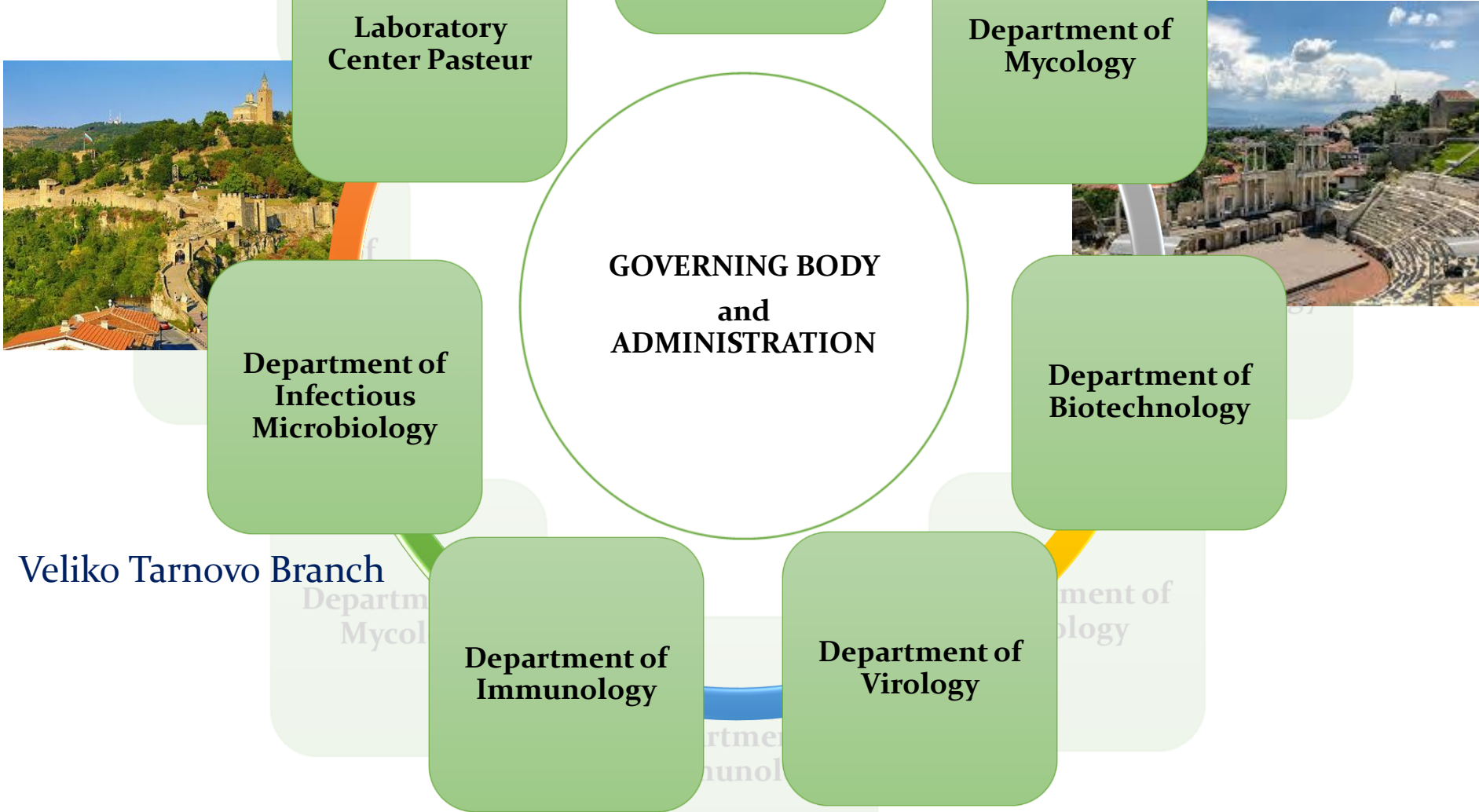
Strategy: aligned with the policy of the Bulgarian Academy of Sciences in:

- Human resources
- Infrastructure
- Balance in scientific research - fundamental and applied
- According to the Regional strategy for research development

Our activities are aligned also with the *National Strategy for Scientific Research Development in Bulgaria* in 2017-2030, as the National Priorities are:

- large-scale development of the research infrastructure
- innovation and technologies
- improving the research ranking of Bulgarian scientists
- increasing public trust in research and innovation
- providing opportunities for young people to develop research careers.

Structure



Plovdiv Branch

Veliko Tarnovo Branch

Department of
General
Microbiology

Department of
Mycology

Laboratory
Center Pasteur

GOVERNING BODY
and
ADMINISTRATION

Department of
Biotechnology

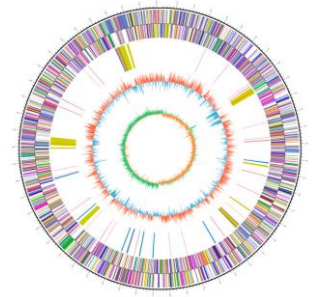
Department of
Infectious
Microbiology

Department of
Immunology

Department of
Virology



GENERAL MICROBIOLOGY



CELLULAR MICROBIOLOGY

Head: Assoc. Prof.
Tsvetelina Paunova-
Krasteva,

- Scanning and electron microscopy
- Biofilms formation



EXTREMOPHILIC MICROORGANISMS

Head: Prof.
Margarita
Kambourova

- Isolation of extremophilic microorganisms, enzymes, EPS, Plastics degradation



MICROBIAL GENETICS

Head: Prof. Svetla
Danova

- De novo sequencing of bacterial genomes and metagenomes
- Probiotic properties of lactic acid bacteria



MICROBIAL BIOCHEMISTRY

Head: Assist. Prof.
Rumyana Eneva

- Enzymes and pathogenicity
- *Vibrio cholerae*, *Aeromonas*, *Micrococcus* enzymes

BIOTECHNOLOGY

- Head: **Prof. Lyudmila**

- **Kabaivanova**

- ⑩ *Biotechnologies for Microbial Cellulose Conversion*

- ⑩ *Hydrogen and methane production*

BIOREMEDIATION AND BIOFUELS



- Head: **Assoc. Prof. Vasil Georgiev**

- ⑩ *Bioactive compound of plant origin*

CELLULAR BIOSYSTEMS



- Head: **Prof. Milen Georgiev**

- ⑩ *Metabolomics and metabolic profiling of plant extracts with health benefits*

METABOLOMICS



PlantaSYST

INFECTIOUS MICROBIOLOGY

• Head: **Prof. Hristo Najdenski**

- Epidemiology of yersiniosis, salmonellosis, colibacillosis.
- Food zoonotic pathogens
 - Antibiotic susceptibility

BACTERIAL VIRULENCE, RESISTANCE AND NEW ANTIMICROBIAL AGENTS



• Head: **Assoc. Prof. Violeta Valcheva**

- Molecular epidemiology of mycobacteria
- Bioinformatic tools for analysis of mycobacteria
- Screening of newly synthesized chemicals

MOLECULAR BIOLOGY OF MYCOBACTERIA



• Head: **Assoc. Prof. Maya Zaharieva**

- toxicological profile of com-pounds
- bacterial infections, carci-nogenesis, antineoplastic activity

CYTOTOXICITY AND SIGNAL TRANSDUCTION



• Head: **Assist. Prof. Z. Tsvetanova**

- *E. coli* infections prevention

ECOLOGY OF PATHOGENIC BACTERIA



VIROLOGY



- **Head: Assoc. Prof. Ivanka Nikolova**
- Search for new inhibitors of viral replication
- Mechanism of antiviral action of active compounds

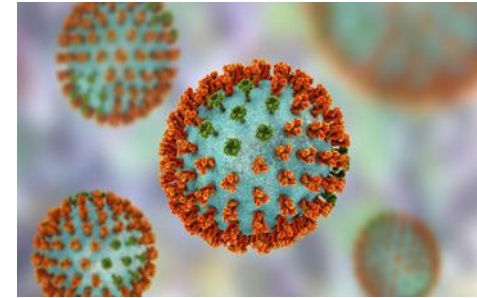
• **EXPERIMENTAL CHEMOTHERAPY OF ENTEROVIRAL INFECTIONS**



- **Head: Assist. Prof. Lora Simeonova**

- Antivirus resistance
- Antiviral agents modifiers

EXPERIMENTAL CHEMOTHERAPY OF INFLUENZA



- **Head: Assist. Prof. Neli Vilhelmova**
- Human oncolytic viruses for therapy of oncological diseases

DNA VIRUSES AND ONCOLYTIC VIRUSES



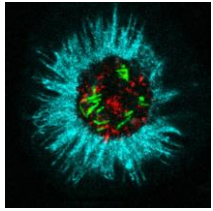
- **Head: Assoc. Prof. Milka Mileva**

- Modifiers of the biological response by antioxidants, immunomodulators, interferons, plant extracts.

BIOLOGICAL RESPONSE MODIFIERS AND PATHOGENESIS OF VIRAL INFECTIONS



IMMUNOLOGY



- Head: **Prof. Andrey Tchorbanov**

EXPERIMENTAL
IMMUNOLOGY



- Head: **Assoc. Prof. Anastas Pashov**

EXPERIMENTAL
IMMUNOTHERAPY



- Head: **Assist. Prof. Kalina Ganeva**

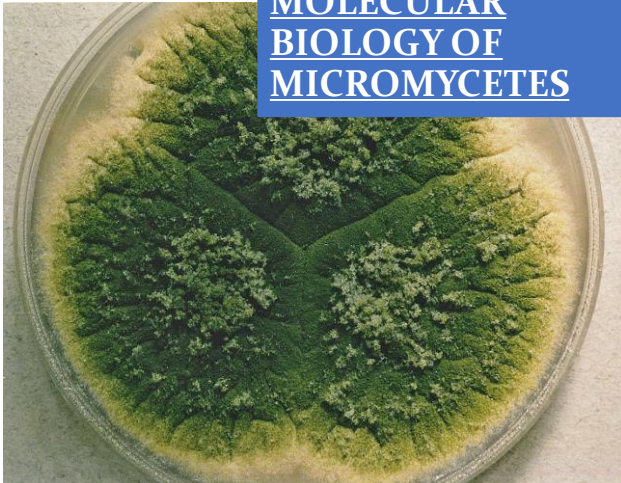
INFECTIOUS
IMMUNOLOGY AND
INFLAMMATION



MYCOLOGY

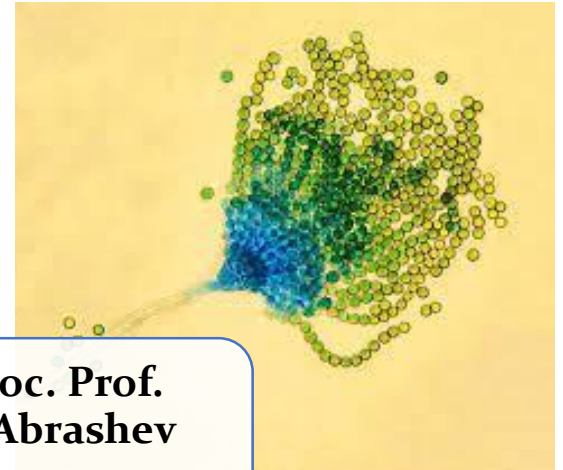
- Head: Assoc. prof.
Ekaterina Krumova

BIODIVERSITY AND
MOLECULAR
BIOLOGY OF
MICROMYCETES



- Head: Assoc. Prof.
Radoslav Abrashev

METABOLISM AND
ITS REGULATION IN
MICROMYCETES



FUNDING IN NUMBERS: 2022

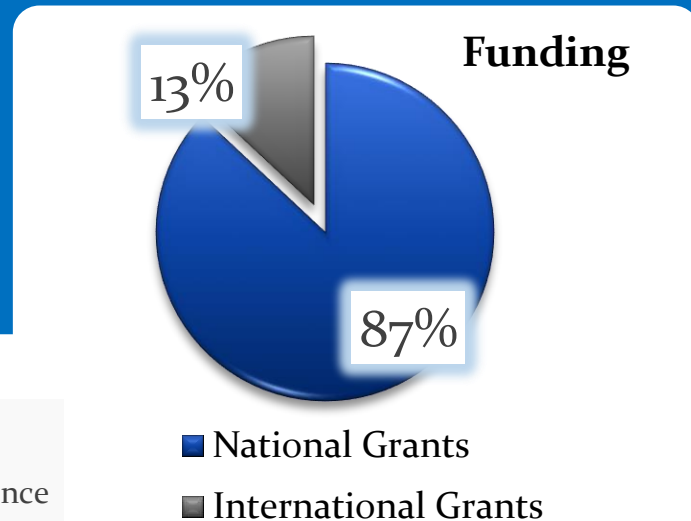
NATIONAL FUNDING: 67 GRANTS

- BULGARIAN NATIONAL SCIENCE FUND: 42 PROJECTS, 5 FUNDED IN 2022
- OTHER FUNDING AT THE NATIONAL LEVEL: 27

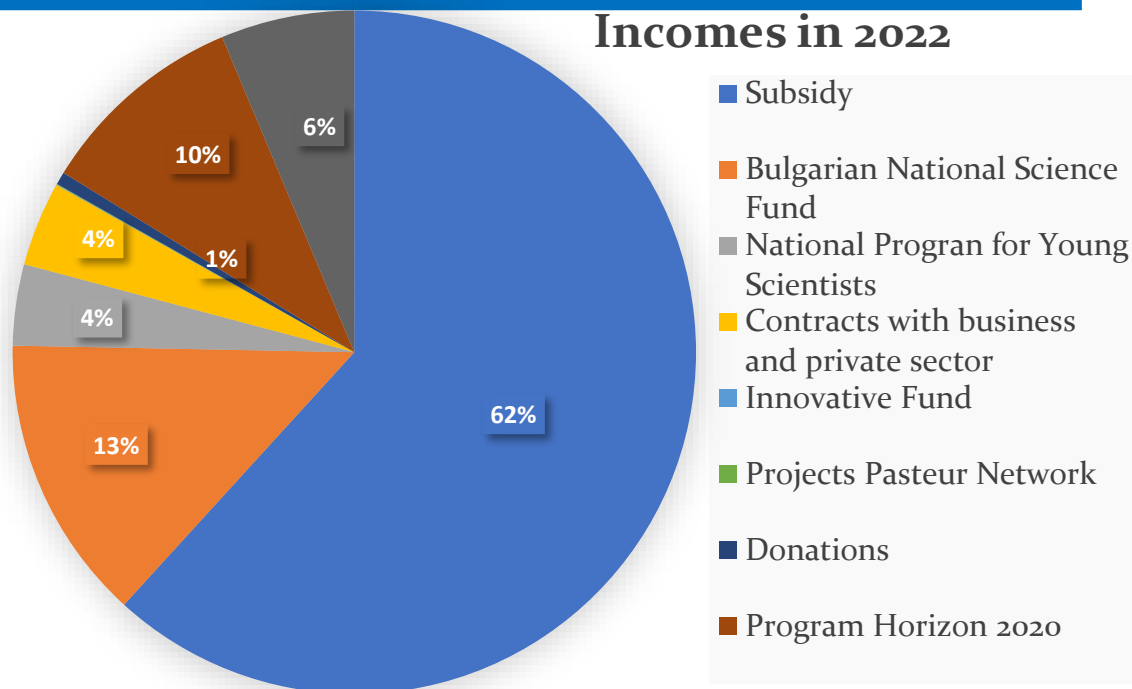
INTERNATIONAL FUNDING: 10 GRANTS

PROJECTS > 150 000 BGN: 18

PROJECTS < 150 000 BGN: 53

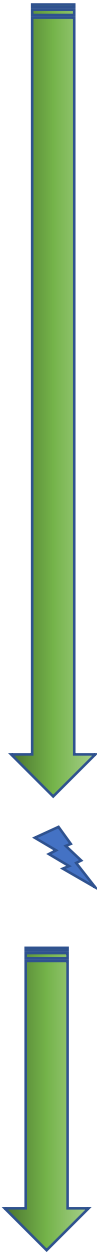


Incomes in 2022



Stephan Angeloff Institute in the Pasteur Network: **≈13 PROJECTS**

2004	Molecular epidemiology of tuberculosis in Bulgaria	Assoc. Prof. Nadya Markova
2005	ACIP Macrophage-dependent immunoprotective action of <i>Candida albicans</i> DNA	Prof. Nina Ivanovska
2006	ACIP Persistence of influenza viruses in reservoirs and environmental systems	
2007	ACIP Hepatitis viruses and primary liver cancer in Eastern European countries	Acad. Angel Galabov
2008	ACIP Papilloma virus infection and cervical cancer in countries of the Institut Pasteur international network	
2009	ACIP Role of Migratory Birds and Transmitted Ticks on the Spread of Some Medically Important Zoonoses along the Eastern European Route	Prof. Hristo Najdenski
2010	ACIP A-05 -2-11 The role of neutrophils and NK in the development of collagenase-induced osteoarthritis	Assoc. Prof. Petya Dimitrova
2011	ACIP Therapeutic potential of modified IgM and IgG preparations in experimental SIRS and sepsis	Prof. Tchavdar Vassilev
2012	ACIP Viral antigen targeting by genetically engineered chimeric molecules	Prof. Andrey Tchorbanov
2017	PTR 43 -16 The role of ExoY nucleotidyl cyclase toxin in <i>Pseudomonas aeruginosa</i> infections	Assoc. Prof. St. Stoitsova
2019	ABR: VacciNanoCor	Prof. Andrey Tchorbanov
2020	Generation of Humanized NSG transfer mouse model for coronavirus SARS-CoV-2 vaccine testing	Assist. Prof. M. Lesseva
2022	PTR: RIIPBIOTA	Prof. Svetla Danova



OUR main PARTNERS in the Pasteur Network

Stephan Angeloff
Institute of
Microbiology
BULGARIA

Institute Pasteur
(Paris, France)

Saint-Petersburg
Pasteur Institute

ISTITUTO PASTEUR
ITALIA

Hellenic Pasteur
Institute

Hong Kong

Institute Pasteur in
Montevideo

Institute Pasteur in
French Guiana

New submission



Strand 2b Capacity Building in Less Developed Regions
(Bulgaria, Greece, French Guiana)

Interregional Innovation Investments Instrument

European Innovation Council and SMEs Executive Agency (EISMEA)

PLATFORMS

- Prokaryotes and eukaryotes in health and diseases
- Development of new functional foods based on probiotic/prebiotic interactions
- MICROBIAL BIODIVERSITY

1. PUBLIC HEALTH TOOLS



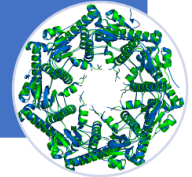
- Murine models of Human diseases
- use and refinement for evaluation of immune response and drug efficacy

2. WHOLE ORGANISM DISEASE MODELS



- Natural and synthetic products for drugs development
- Screening for drug effects on immune cell functions
- Determination of the antibody repertoire in its complete diversity

3. SCREENING FOR MOLECULES WITH NEW BIOLOGICAL ACTIVITY



- Antiviral activity
- Antimicrobial activity
- Antifungal activity
- Antineoplastic activity
- Antioxidant activity

4. SCREENING FOR NEW ACTIVITIES OF MICROBIAL STRAINS



- Morphology of microorganisms and electron microscopy
- Biofilms formation and prevention

5. IMAGING TECHNIQUES



- Antimicrobial resistance
- Blood microbiome and inflammatory diseases
- Molecular epidemiology
- Zoonotic diseases, Tuberculosis
- Evolutionary genetics

6. ONE HEALTH CONCEPT



Once again, happy anniversary!

