



Assist. Prof. Dr. Veselin Petrov: For three years, CPSBB has established itself as a European hub for innovation and excellence in science

CPSBB will move to the new research campus in the "Trakia" district in approximately 12 months.

One of the projects the CPSBB team is currently implementing is focused on "resurrection plants".

A main goal of the Center is to be a bridge between science and business.

- Dr. Petrov, tell us how a PhD in molecular biology got a position in the Funding Department of the Center of Plant Systems Biology and Biotechnology (CPSBB)? Please describe the work your unit performs!

- The Director of the Center – Assoc. Prof. Dr. Tsanko Gechev assumed that, despite my biological background, I could contribute to the development of Department Funding, even though I applied to one of our research departments. Our main activity is preparing project proposals and submitting them to various funding institutions in order to attract financing for research at the Center. Moreover, I am the manager of the H2020 project RESIST, on which I have been working for two years. Next to that, when time allows it, I do experimental work in the laboratory.

- What are the challenges in finding funding for biological research in Bulgaria?

- For several reasons, it turns out to be a complex process. One of the challenges is that the Center is a relatively newly established institute and still has to increase its visibility on the scientific map so that the European research institutions recognize it as a potential partner for collaborations. Enhancing the awareness of our activities was one of the main tasks for the first two years of CPSBB's development. It was achieved by combining ambitious research projects, publicity, and last but not least, a very good record of scientific publications.

It is essential to mention that there have been many opportunities for funding science in recent years, but the competition is enormous. Every developed and economically prospering country invests heavily in research and development. Our practice has shown that the chance of winning a project is about 10%, which means that on average ten projects must be submitted to succeed with attracting funds for one. Admittedly, this is a significant amount of creative work.

- Has the Center managed to reach the forefront of science in Bulgaria since its establishment? Has CPSBB become a recognizable partner for the major scientific institutions in Europe?

- I will give you a real example – the RESIST project. It is practically the first major international project that the Center has won since its establishment, and CPSBB is the Coordinating institution. Being a coordinator means CPSBB manages all project activities, including the research, and the communication with the funding agency and the partner institutions. The project has been running for two years. CPSBB implements the project with five institutions from three continents – Max Planck Institute of Molecular Plant Physiology, Germany; University of Potsdam, Germany; Ben-Gurion University of the Negev, Israel; University of Cape Town, South Africa; and a private company - BioAtlantis Ltd., from Ireland. The total amount of funds for the project is a little over 1 million euros, and the implementation period is four years.

While the Center was established with the help of the large infrastructure project PlantaSYST, RESIST is a mobility and research project, a part of the "Marie Curie" program of Horizon 2020, which is focused on young scientists.. The goal of RESIST is exchange of experience with partner institutions and mobility of scientists – both from the Center to partner institutions and vice versa. For example, we currently expect two PhD students from the University of Cape Town, South Africa.

In just three years, CPSBB has become one of the most productive research centers in Bulgaria, with a higher number of publications in renowned journals per member of the research team than some of the leading Bulgarian institutes in plant science. The achievements in the field of biology and biotechnology already make CPSBB recognizable. As a result, currently, the Center is invited by several international consortia, which are looking for collaborations.

- What are your current activities?

- I am currently working on the interim report on the RESIST project. Unfortunately, because of the situation with COVID-19 last year, the progress on the various tasks has been complicated, especially for a project involving travelling and secondments of people abroad.

- What does the RESIST project include in its essence?

- We investigate a group of unique plants that are called "resurrection plants". They are intriguing both from a fundamental and practical perspective because they have an extremely high tolerance to drought. They can lose almost all the water from their tissues and, after an extended period, with subsequent irrigation, restore their functions. This trait is extremely rare among plants. We know that almost all of them, including crops, die without water. And the problem of drought will be one of the most serious that agriculture will face in the future. These extraordinary characteristics make the "resurrection plants" so important from a scientific point of view. They are a naturally evolved group that can withstand such adverse conditions.

Our first goal is to understand on a fundamental level what their protection mechanisms are and subsequently to translate this knowledge into practice on crops. We are working with an exceptional Bulgarian plant, *Haberlea rhodopensis*, called "Orpheus flower", which can survive up to 36 months in a state of anhydrobiosis, i.e., thoroughly dried. In addition, it can withstand long-term darkness or in a frozen state. We are currently studying this plant at the molecular level.

- Can we say that the CPSBB is a kind of an incubator for innovation and development in the plant biotechnology sector? Does CPSBB interact with the companies from the agricultural segment in our country? Is the Bulgarian business open for innovations and advanced technologies?

- The business in our country is still timid when investing in research and innovation. The Center has partnership agreements with several Bulgarian and international biotechnological and breeding companies. Furthermore, CPSBB continues to expand its connections, with the aim to bridge the scientific community and the business. The path to a modern economy is precisely through investment in research and innovation.

- How is the construction of CPSBB's research complex under the PlantaSYST project progressing?

- The construction is in an advanced phase, having in mind that the groundbreaking ceremony was in July 2020. The main building and the high-technological greenhouses are near completion. We expect that approximately in 12 months, the Center will move into its new home in the "Trakia" district, which will support and intensify our scientific activities. After completing the campus, the goal will be to create a competitive and creative atmosphere that will lead to the long-term sustainability of the Center.

- And in the short term, what lies ahead for you and the team of the Center?

- In June, CPSBB is hosting an International Conference on Plant Systems Biology and Biotechnology ([ICPSBB](#)) held in Golden Sands Black Sea resort, Bulgaria. It has been challenging to organize such a significant international event under pandemic circumstances. Consequently, the Organizing Committee decided ICPSBB to be a hybrid event, combining on-site and online participation. Due to the extensive dissemination campaign and the efforts of CPSBB's team, there is serious interest in the conference from Bulgaria and abroad.

ICPSBB will be a forum that brings together people involved in science with business representatives, to exchange ideas and create new partnerships. Our ambition is to make the conference a regular event, which we will organize in Plovdiv once our new campus in "Trakia" is ready. In this regard, one of the strategic objectives of the CPSBB is to contribute for the development Plovdiv and the region via conducting high-level research and bringing the science and business sectors together.