



**25 – 29 April 2022**  
Havana Convention Palace

## Science for a Healthy Life

BioHabana 2022's main objective is to carry out a translation exercise of Life Sciences in Business Development, in a new scientific, innovation management, and worldwide health context.

The biological sciences are in a process of fundamental changes, similar to those that occurred in physics at the beginning of the 20th century. The main driver of these changes is in the convergence with other sciences, and especially with the information sciences, which generates masses of data not previously seen and possibilities of a greater understanding of the complexity of biological systems.

The convergence of Life Sciences with Neurosciences, Nanosciences, Data Sciences and Engineering, has caused a technological diversification of the Biotechnology, Pharmaceutical and Medical Technology Industry, including the phenomenon of digital transformation, which has given rise to the so-called Industry 4.0.

Confronting the Covid19 pandemic has revealed the response capacity of the scientific community and the biopharmaceutical industry, based on a multidisciplinary and inter-institutional approach that has achieved an unprecedented integration in the history of Biomedical Sciences. Cuba, a small country, with scarce material resources, has had remarkable results in controlling the disease, which also highlights the impact of social factors.

Covid19 has blurred the border between infectious diseases and chronic non-communicable diseases, highlighting common underlying phenomena such as chronic low-grade inflammation and immunosenescence. In the post-Covid19 stage, it will be necessary to face the increase in the burden of mortality from chronic non-communicable diseases, in particular cancer and neurodegenerative diseases.

It is also expected that the convergence of biological technologies, information technologies and engineering will have important impacts outside the field of human health, especially in food production, energy and environmental care.

Taking advantage of all these new possibilities will also require changes in the ways of managing value chains and in business models.

The "global" nature of the challenges to human health (as illustrated by the Covid-19 pandemic), as well as the food, energy and environmental challenges, is increasingly evident. No country can face them alone, and this demands a growing internationalization of scientific and business activity that will have to be tackled creatively.

It is not possible to assume the technological realities of the 21st century with business strategies of the 20th century.

It is time to take advantage of the momentum generated in the last two years to face the post-Covid19 stage. BioCubaFarma, the Cuban Biotechnology, Pharmaceutical and Medical Technology Industry Group, summons the world's scientific and business community to the BioHabana 2022 Congress.

This Congress will be a unique space, due to its content and the context in which it will be held. It will allow the broad debate of the experiences and results of the participants, coming from both industrialized and developing countries, for the construction of alliances that allow a greater impact on public health.

### MAIN TOPICS:

- **Covid Pandemic - 19** (April 26th)

The COVID-19 Pandemic Symposium will present the strategy followed by the Ministry of Public Health and the Cuban government, based on

science, to confront the pandemic. The innovative products of Cuban Biotechnology included in the COVID-19 treatment protocol and their impact compared to other therapeutic protocols and products introduced in the world will also be presented.

Researchers, specialists, and health authorities from different countries are invited to address the therapeutic and control strategies for the epidemic in their respective countries and regions, as well as the strategies or proposals for managing the coronavirus infection once it is transferred to the normality or endemicity of the disease.

**Coordinator:** PhD. Gerardo Guillén Nieto –  
Biomedical Research director of Center for Genetic  
Engineering and Biotechnology  
([gerardo.guillen@cigb.edu.cu](mailto:gerardo.guillen@cigb.edu.cu))

- **Medical Technology and Industry 4.0** (April 26th)

The digital transformation of the industry requires the adoption of new progressive technologies that allow improving capital investments and operations expenses in the automation of the production process. The combination of operations with high-impact technologies, advanced production techniques, together with the cultural change that this new industrial revolution, Industry 4.0, entails, drives new challenges in biotechnology. Detailed planning of its impact on the ecosystem, organizations, processes and human capital should be focused on the incorporation of innovative technologies that reduce the gaps in collaboration, connectivity, automation, access to real-time data and workforce skills.

The progress of the Biotechnological and Pharmaceutical Industry comes from the synergy in areas such as cybersecurity, high-performance computing, robotics, automation, nanomedicine, artificial intelligence, blockchain, among others that allow the incorporation of product improvements, services and customer expectations. Our roadmap is part of the definition of new strategies associated with defining new governance models, identification of business opportunities in a continuous cycle and new models of cybersecurity action in the face of the

diversification of technologies and the process of operation and management of information.

**Coordinators:** María Carla Silveira Taboadela MSc. ([mariacarla@eti.biocubafarma.cu](mailto:mariacarla@eti.biocubafarma.cu)), Anet Fernández Bezanilla MSc. ([anet@eti.biocubafarma.cu](mailto:anet@eti.biocubafarma.cu)), Evaristo José Madarro Capó MSc. ([ejmaddock@eti.biocubafarma.cu](mailto:ejmaddock@eti.biocubafarma.cu)), Eng. Sedrick Arango Ortega ([sedrick@eti.biocubafarma.cu](mailto:sedrick@eti.biocubafarma.cu))

- **Chronic inflammation, cancer and autoimmunity** (April 27th)

Since the mid XX century the protagonism of chronic noncommunicable diseases of the adulthood in epidemiology, many of them associated with age and carrying similar risk factors pointed to the importance of the biology of aging.

Later on, aging, even healthy aging, was associated with chronic subclinical inflammation and the terms “inflammaging” and “immunosenescence” were coined to capture this situation.

More recently the COVID-19 pandemic called attention to the role of previous immune senescence and inflammation also in infectious diseases.

COVID-19 affected disproportionately older adults worldwide. Immunosenescence and inflammaging were in the basis of this incidence and mortality bias. Senescence and inflammation are both involved in a range of age-related diseases and also correlate with poor response to vaccination in the elderly. There is insufficient information regarding the impact of coronavirus on the development of chronic inflammation, accelerating inflammaging and enhancing immunosenescence or cellular senescence, all of them widely associated with age-related diseases such as cancer, cardiovascular and neurodegenerative diseases. New research approaches to understand this novel context are needed.

Major progress in the field requires convergence of approaches from diverse areas of research, and also significant international cooperation as inflammatory processes are environment-dependent. Aging and chronic inflammation session in BIOHAVANA 2022 is an opportunity to rethink the role and impact of chronic inflammation

and promote collaborative work. As a main distinctive feature, we make sure we have a lecture space with enough time for future-oriented discussion, focusing on future research that can and should be done.

**Coordinator:** MD PhD. Agustín Lage Dávila –  
Scientific Assessor of president of BioCubaFarma  
([lage@cim.sld.cu](mailto:lage@cim.sld.cu))

- **Agricultural Biotechnology** (April 27th)

BioHavana 2022 constitutes an opportunity to identify business interests in the area of agricultural biotechnology. In it, several institutions of the BioCubaFarma business group will take their portfolios of projects / products aimed at food production, both in the area of biotechnology applied to animals, plants and industry.

An ideal space will be created to discuss and deepen the most innovative results for the use of biotechnology as a powerful tool for caring for the environment, increasing food availability and advancing the purpose of one health.

The presence at the congress of several world leaders in their respective topics of agricultural biotechnology makes it a unique space to learn first-hand about the most important advances in the agricultural sphere both in Cuba and in other countries present at the event, in this framework it will be possible to establish collaboration agreements, sign supply and representation contracts and much more.

**Coordinators:** PhD. Mario Pablo Estrada García –  
Agricultural Research Director of Center for Genetic Engineering and Biotechnology  
([mario.pablo@cigb.edu.cu](mailto:mario.pablo@cigb.edu.cu)) y PhD. Lincidio Pérez Sánchez – Advance Project Manager Executive of Business Direction of Center for Genetic Engineering and Biotechnology ([lincidio.perez@cigb.edu.cu](mailto:lincidio.perez@cigb.edu.cu))

- **Diseases of the brain** (April 28th)

Brain-related disorders and mental health conditions are important challenges facing societies today. The burden of these diseases is significantly high and is expected to increase rapidly due to the aging of the population in many countries and the medium- and long-term impacts of the COVID-19

pandemic. For these reasons, neuroscience research and its translation into products based on neurotechnologies are becoming increasingly prioritized.

BIOCUBAFARMA has a high potential for neurotechnological development and its social introduction, led by Cuban Neuroscience Centre with a vast experience in the development of research on the normal and dysfunctional brain, and the development of medical technologies and molecules for the diagnosis and treatment of brain dysfunctions with impact in the early ages up to aging. Other institutions such as Center for Genetic Engineering and Biotechnology, and Center Molecular Immunology and Center for Developed and Drug Research are involved in the generation of novel biotechnological products for the treatment of dementia, stroke and other neurodegenerative diseases. The close relationship of these institutions with the national systems of health, education and other organizations favors the introduction of our products in the society. The development of a workshop on Brain dysfunctions in BioHavana 2022 provides the scenario for the exchange of experiences, the search for collaborative projects and economic alliances that hasten the development of our neurotechnological products and achieve a greater impact on the Global Brain Health.

The main themes to be addressed in the workshop are:

- Challenges in Neuroscience Drug Discovery and Development: the Cuban experience
- Industry 4.0 and Neurotechnology: challenges and realities for Cuba
- Neuroinformatics and Multi-Omics approaches for the Understanding of Brain Diseases
- Neurotechnology and healthy aging.

**Coordinators:** PhD. Mitchell Valdés Sosa – General Director of CNEURO ([mitchell@cneuro.edu.cu](mailto:mitchell@cneuro.edu.cu)) y PhD. Roberto Rodríguez Labrada – Adjunct Director of CNEURO ([roberto.rodriguez@cneuro.edu.cu](mailto:roberto.rodriguez@cneuro.edu.cu))

- **Cancer immunotherapy** (April 28th)



Transforming advanced cancer into a chronic disease compatible with years of quality life can be instrumented by manipulating the immune system. The recent clinical achievements of immune checkpoint blockade and adoptive T cell therapies embody a turning point in cancer immunotherapy. These therapies have the potential to induce durable responses in multiple solid and hematologic malignancies and thus, have transformed the treatment algorithms for numerous tumor types.

Cuba has a solid biotechnology and pharmaceutical industry that exhibits important achievements in the use of active and passive immunotherapy against validated tumor antigens as well as innovative immunomodulatory drugs targeting T regs, myeloid derived suppressor cells and inflammation. Increasing the clinical impact of the currently available drugs will demand new fundamental research including the correct selection of patients, the rapid evaluation of therapeutic combinations, the assessment of efficacy in population-based studies and enrolling elder and frail patients in the clinical trials, more representative of the real cancer patient population. These topics will be addressed in BioHavana 2022. We cordially invite you to give your valuable ideas!

**Coordinators:** PhD. Tania Crombet Ramos – Clinical Research Director of Molecular Immunology Center ([taniac@cim.sld.cu](mailto:taniac@cim.sld.cu)), PhD. Circe Mesa Pardillo - Innovative Immunotherapy Alliance ([circe@izalliance.com](mailto:circe@izalliance.com)), PhD. Zaima Mazorra Herrera - Molecular Immunology Center ([zaima@cim.sld.cu](mailto:zaima@cim.sld.cu)) y PhD. Yanelys Morera Díaz - Center for Genetic Engineering and Biotechnology ([yanelys.morera@cigb.edu.cu](mailto:yanelys.morera@cigb.edu.cu))

- **Bioprocesses, Developability and Design Space y espacio de diseño** (April 29th)

The biotechnology industry, during the Covid-19 pandemic, has faced additional challenges to those it already had in 2019. The accelerated development of therapeutic products and vaccines, the intensification of production and cost reduction, new nanoparticulated formulations, the use of flexible production platforms and the extension of the use of disposable technologies were added to the existing challenges.

The analysis of the characteristics of the products that influence their developability allow increasing the efficiency and effectiveness of the process. The implementation of continuous production systems that demand greater use of process analytical technologies (PAT) as forms of control is still in force today. All this in a regulatory context that continues to have quality by design and risk analysis as pillars of good manufacturing practices.

New equipment and technologies that make it easier to achieve these objectives and carry out productive scale-up in an expeditious manner will allow us to continue shortening the time from basic research to registration.

In Cuba, in these two years of pandemic, numerous therapeutic products and vaccines have been developed that show the strength of the medical-pharmaceutical and biotechnological industry. At BioHavana 2022 we intend to share experiences and forge strategic collaborations in the field of development and production of biologicals. We look forward to your valuable participation.

**Coordinators:** Tammy Boggiano Ayo MSc. – Development of Process Director of Molecular Immunology Center ([tamy@cim.sld.cu](mailto:tamy@cim.sld.cu)) y PhD. Alexis Labrada – Research Director of Nacional Bioprepared Center ([labrada@biocen.cu](mailto:labrada@biocen.cu))

- **Innovation in new business models for high-tech sectors** (April 29th)

Cuban biotech has a recognized capability to generate and produce innovative drug candidates that are speedily tested in clinical trials in Cuba and elsewhere, substantially attenuating the risk associated to the clinical development of biotech innovative candidates. It also has a robust development platform for agricultural products that have been properly tested and introduced in Cuban farms. However, the limited presence of the Cuban biotech products in global distribution channels has prevented international investor community to get the right knowledge about their real business potential to gain access to major markets.

We believe BioHavana 2022 will be an interchange platform to show/identify Cuban biopharmaceutical assets with competitive potential for accessing

global market, as well as to clarify legal pathways and potential business models that may allow participants to discover new opportunities for research collaboration and business engagement.

**Coordinator:** Einard Blanco García MSc. – General Director de IncuBIO S.A. ([einard@cimab.cu](mailto:einard@cimab.cu))

## Program outline:

April 25th: Pre – meeting courses

April 26th – 29th: Scientific and business sessions

Symposia with keynote lectures will be organized in the different themes, as well as workshops for the presentation of the works on posters and / or oral communications.

**Special sessions** will be organized on:

- Covid19 vaccines
- BioCubaFarma Business Portfolio and Investment Portfolio
- Exhibition Fair of the Biotechnology, Pharmaceutical and Medical Technology Industry
- Spaces enabled for bilateral meetings

There will be the possibility of virtual participation in the BioHabana 2022 Congress, with access to the abstracts of all the works, digital version of the posters, and online participation in the keynote lectures of the symposia.

**Deadline for registration and submission of abstracts: 1 st of April, 2022.**

**Instructions for submitting abstracts to the BioHabana 2022 congress.**

You can send it for email ([biohabana@gmail.com](mailto:biohabana@gmail.com)) with the requested information. Use as the subject of the message: Send abstract-BioHabana2022.

**Send Abstract BioHabana 2022.**

Writing in Word format, Arial font, size 12, single line spacing, justified paragraph alignment. 300 words maximum.

Sections:

- Topic
- Title
- Authors
  - Name Surname<sup>1</sup>, Name Surname<sup>2</sup>, Name Surname<sup>3</sup>
  - 1 Institution, Country, E-mail
  - 2 Institution, Country, E-mail
  - 3 Institution, Country, E-mail
- Introduction
- Methods
- Results
- Conclusions

## REGISTRATION FEE:

- Before the deadline: 300 euros
- Late registration (attendance only): 400 euros
- Virtual participation (online): 200 euros.
- Payment gateway: <http://biohabana.cubagrouplanner.com/>

**Accommodation and transportation** of foreign participants will be attended by the Havanatur Tourism Agency.

Include Services:

- Accommodation for persona (night and breakfast)
- Transportation Service from and to airport in exclusive.
- Transportation Service from and to venue of event.
- Assistance Service of personal of Havanatur

## Contacts:

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10. Public recognition for the support provided

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## **ORGANIZING COMMITTEE:**

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