



## **BIOMARKER RESEARCH IN THE FIELD OF METABOLISM: UNRAVELING NEW DIAGNOSTIC OPPORTUNITIES FOR DISEASES AND FUNCTIONAL FOOD**

*Madrid, 27, 28 y 29 September 2021*

### **On site course**

*Salón de actos del IIBm (Instituto de  
Investigaciones Biomédicas "Alberto Sols")*

### **Online**

*Aula virtual UIMP:  
<https://campusvirtual.uimp.es/>*



**Fee: A**

**Code: 6502**

Metabolic alterations greatly affect the development and outcome of a variety of diseases including, for example, increased susceptibility to infections and resolution of inflammatory processes, as well as an increased risk of tumor development and poor response to chemotherapy. Importantly, a new transdisciplinary area of research is emerging, focused on environmental stressors, that is steadily evidencing that a wide number of exposures has a negative impact on metabolism. These exposures include air pollutants and food additives, that affect the population worldwide. Therefore, accurate evaluation of the metabolic status of patients and level of the response to stress exposure is fundamental to assess disease development. However, use of biomarkers, for risk evaluation and follow up, has not yet been implemented in this setting.

In response to this emerging health concern, novel personalized nutritional interventions are being developed. In this context, the implementation of the follow up of metabolic biomarkers, would facilitate the testing of their efficacy and allow the set-up of personalized interventions. This would be of particular relevance for chronic patients.

Thus, the current course program is designed to respond to this raising need, to adjust the nutrition to the level of stress exposure and to the patient, in order to curb the toxic effects of

environmental stressors, and also, to predict the long-term development of metabolic disturbances. The latest sessions focus on the increased relevance of the functional food, not only to cover the nutritional requirements, but also as a strategy to minimize the development of non-communicable diseases including, obesity, diabetes, cardiovascular, non-alcoholic fatty liver disease and cancer. The ultimate objective of this program is to support shaping the future of Europe through research and innovation, training young students and scientists into leadership in breakthrough and disruptive innovation to achieve ambitious transdisciplinary goals and focusing on cutting-edge research and innovation.

This course has as main target, students and professional in the biomedicine field with an interest in metabolism, but given its bottom up design it will also be of interest to the general public, patients, companies and policy makers with responsibilities in this area. Also, because of its multidisciplinary approach it will also be expected to interest students and researchers of other areas related to the program such as, toxicology, pharmacology, nutrition, food technology, etc.

Directors:

**Ángela M. Valverde** (IIBm, CSIC-UAM, Spain).

**María Monsalve** (IIBm, CSIC-UAM, Spain).

Academic Secretary:

**Patricia Rada** PhD (IIBm, CSIC-UAM, Spain).

**Monday 27<sup>th</sup> of September**

**15:30-17:30 h. Session I *Metabolic and Environmental stressors.***

**Thomas Thum** (U. Hannover, Germany). - Streaming, on-line

Title: "Noncoding RNAs as biomarkers in cardiovascular health and disease"

**Andreas Daiber** (U. Mainz, Germany) - Streaming, on-line

Title: "Overlap and differences in biochemical signatures of selected environmental stressors and their associated adverse health effects".

## Tuesday 28<sup>th</sup> of September

### 09:30-11:30 h. Session I *Metabolic Biomarkers: Mitochondrial diseases and Cancer.*

**José López Barneo** (IBIS, Spain) -. Streaming, on-line

Title: "Role of mitochondria in acute oxygen sensing".

**Arkaitz Carracedo Pérez** (CIC-BioGUNE, Spain). - Streaming, on-line

Title: "Metabolic intricacies of prostate cancer progression".

### 12:00-14:00 h. Session II. *Pharmacological treatments and clinical trials in metabolic diseases*

**Francesco Giorgino** (U. of Bari Aldo Moro, Italy). - Streaming, on-line

Title: "Predicting the effects of GLP-1RA and SGLT-2i in prevention of organ damage in T2D".

**Francisco Abad Santos** (UAM, Spain). - Streaming, on-site

Title: "Evaluation of genetic polymorphisms associated with the metabolic effects of aripiprazole and olanzapine". - Streaming, on-site

### 15:30-17:30 h. Session III. *Data Analysis in Biomedicine.*

**Jose M. Sempere** (U. Politécnica de Valencia, Spain) - Streaming, on-line

Title "A view to machine Learning and biocomputation for the Omic Sciences".

Round-table: "Novel Bioinformatics Tool for Personalized Medicine Applications".

Speakers:

**Angelo Gámez-Pozo** (CEO Biomedica Molecular Medicine, Spain). - Streaming, on-site

**Sergio Senar** (Dir. of Dr. Target). - Streaming, on-site

Moderation:

**María Monsalve** - Streaming, on-site

## Wednesday 29<sup>th</sup> of September

### 09:30-11:30 h. Session I. *Lifestyle, food intolerance and nutritional interventions in metabolic diseases (I)*

**Ascensión Marcos** (ICTAN-CSIC, Spain). - Streaming, on-line

Title: "Nutritional interventions in obesity and other eating disorders".

**Tiziana Formari Reali** (CIAL, UAM-CSIC, Spain). - Streaming, on-line

Title: "Validation of Functional Ingredients and their applications in Nutrition and Health".

### 12:00-13:00. Session II. *Lifestyle, food intolerance and nutritional interventions in metabolic diseases (II)*

Round Table: "Lifestyle, food intolerance and nutritional interventions in metabolic diseases".

Speakers:

**Eugenia Carvalho**, PhD (CNC, Portugal). – Streaming, on-line

**Patricia Rada** - Streaming, on-site

Moderation:

**Ángela María Martínez Valverde** - Streaming, on-site