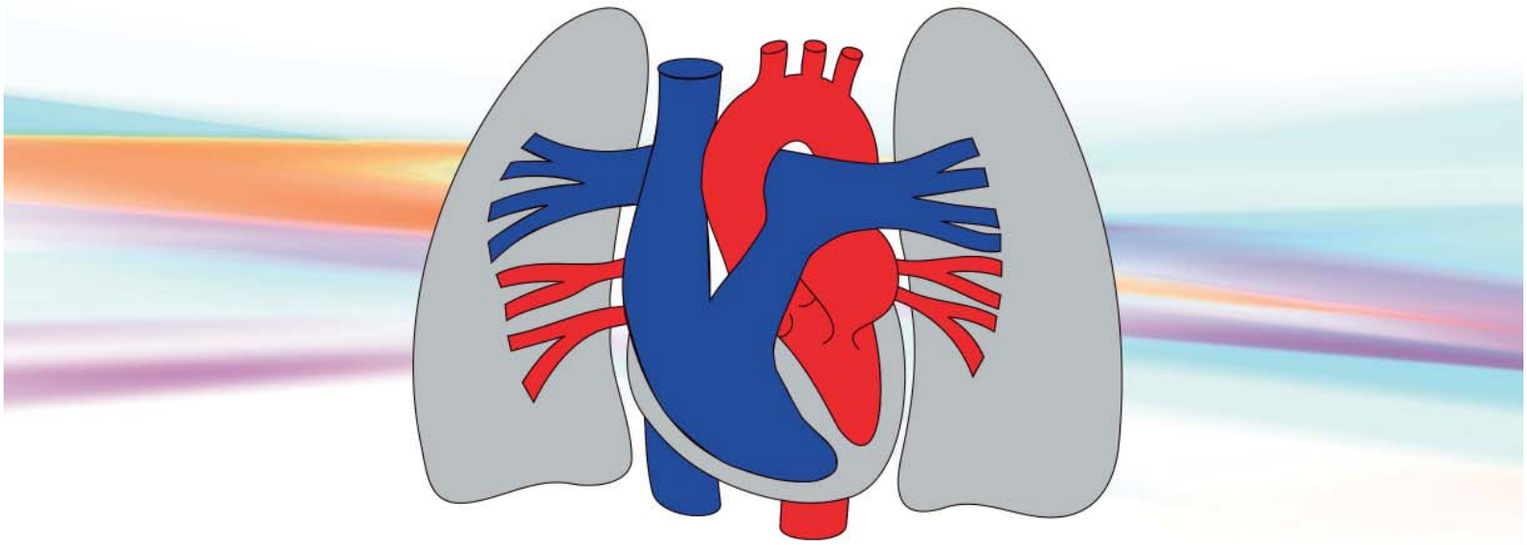
SOCIEDAD ESPAÑOLA DE Cardiología

INTERNATIONAL Masters Degree IN PULMONARY HYPERTENSION

USC UNIVERSIDADE DE SANTIAGO DE COMPOSTELA



# International Masters Degree in Pulmonary Hypertension

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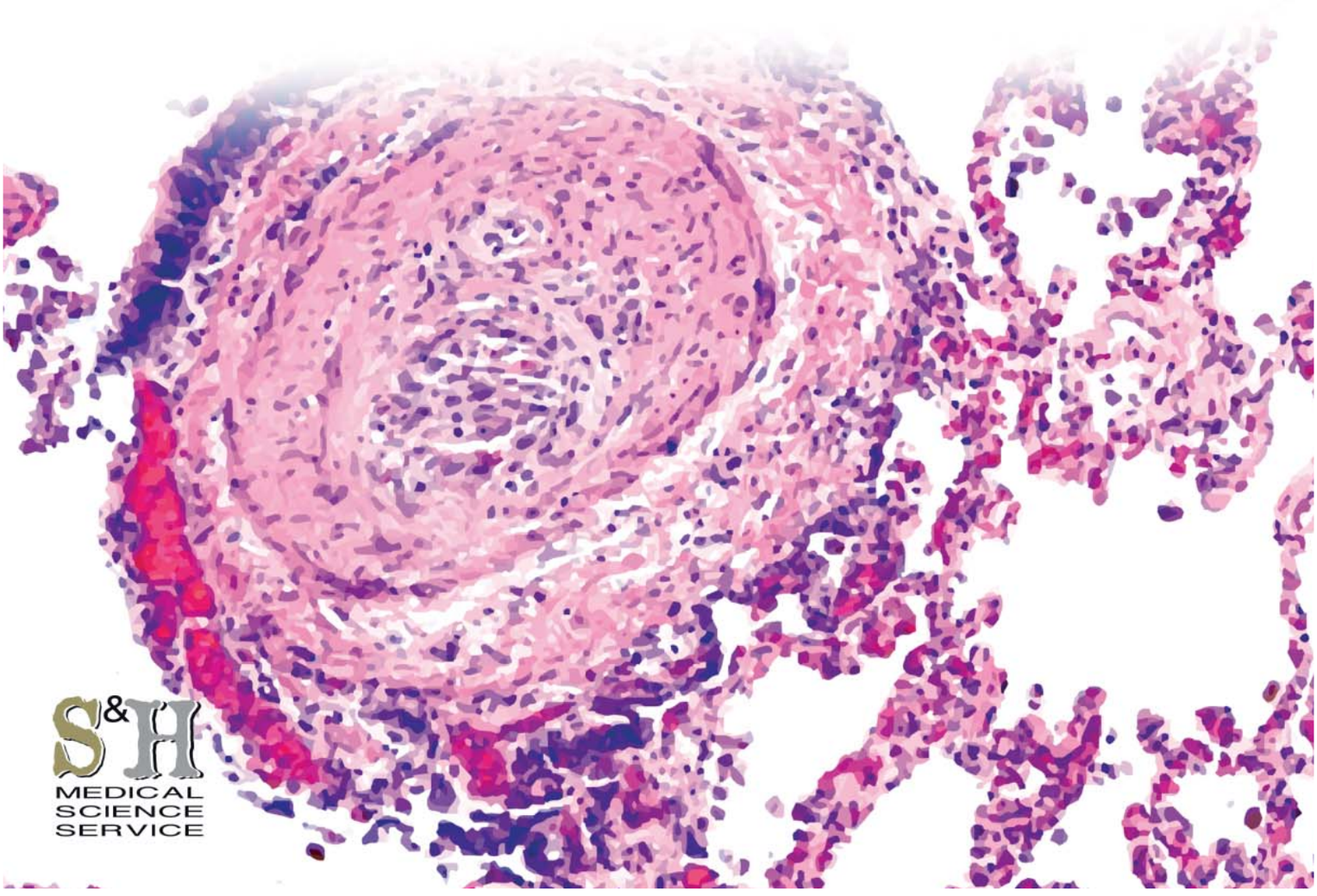

S&H MEDICAL SCIENCE SERVICE

# International Masters Degree in Pulmonary Hypertension

The ***International Masters Degree in Pulmonary Hypertension*** is organized through the *Universidad de Santiago de Compostela* (Spain), the Spanish Society of Cardiology (*Sociedad Española de Cardiología*) (SEC) as well as with the company *S&H Medical Science Service*, which operates as a Coordinating Training Center.

This Master is an on-line Post-Graduate training course available for those specialists involved in Pulmonary Hypertension, which will enable them to update the knowledge required for the proper diagnosis and treatment of Pulmonary Hypertension.

The course is accredited with a total of **60 credits** by the European Credit Transfer System (ECTS), awarded through the *Universidad de Santiago de Compostela*.

## Objectives

To update the knowledge required for the proper diagnosis and treatment of patients with Pulmonary Hypertension, contributing to decrease misdiagnosis, early detection of alarm signals, to select the most appropriate treatment, and attempt to increase survival.

## Dates and duration

The ***International Masters Degree in Pulmonary Hypertension*** will start on the **15th September 2014** and will finish on **17th June 2016**, covering 2 complete Academic Years (2014-2015 and 2015-2016).

Modules 1, 2 and 3 will be taught during the first academic year (15th September 2014 to 17th June 2015), and Modules 4, 5 and 6 will be taught during the second academic year (15th September 2015 to 17th June 2016).

During the course, there will be holiday breaks according to the official calendar of the *Universidad de Santiago de Compostela* (Spain).

The course will have a total duration of **1.500 teaching hours**.

## Supporting societies

This Master is supported by the Spanish Society of Pneumonology and Thoracic Surgery (*Sociedad Española de Neumología y Cirugía Torácica* (SEPAR)) and the Argentinian Association of Respiratory Medicine (*Asociación Argentina de Medicina Respiratoria* (AAMR)).

We are in the process of contacting the *European Society of Cardiology* (ESC) and other Latin American Societies of Cardiology and Pneumonology.

## Language

The official languages of the course will be English and Spanish, which can be selected in the platform. The teaching material will be available in English and Spanish. However, participation in the working forums during the course will only be in English.

## To whom it is aimed at and requirements

Graduates in Medicine and Surgery, with a specialty in Cardiology, Chest Diseases, Internal Medicine or Rheumatology who are working in the area of Pulmonary Hypertension.

The following selection criteria will be taken into account:

- To be a member of the Scientific Societies sponsoring the course.
- First come first serve.

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## Teaching material and work methodology

The Course will be run exclusively on-line via the web page: **www.masterpulmonaryhypertension.org**

The Platform allows fluid communication between the teaching staff and the students, allowing to exchange texts, images and videos corresponding to the clinical cases or questions.

The teaching module consists of 6 Modules on specific topics and a total of 20 subjects. The contents of each one of the subjects are:

### Theoretical part:

- **Updating text:** Various contents relative to the subject to study are reviewed and updated. The provided theorical content are mainly made using algorithms, tables and figures, with the aim of making the learning and understanding of the topic easier. Literature references are included at the end of the document.
- **Conclusions texts:** Main ideas of the subject.
- **Audio-visual, in Flash Player format,** in which the Tutor ilustrates, in graphs form, all the concepts of the subjects that he/she wishes to transmit. The video includes explanatory audio, videos of diagnostic tests, graphs, and everything needed for the proper understanding of the subject to study.

  This material will be available in the Platform in English and in Spanish.

### Practical part:

1. **Self-assessment tests:** At least 3 Self-assessment tests must be performed in the Masters course, each one of them consisting of a set of 10 multiple-choice questions. (theoretical questions, clinical questions and clinical cases).

   The students will be able to take the self-assessment test as needed to asses their knowledge on the subject. These types of tests are exercises that should performed by the students to assess their knowledge on the subject matter after studying the theoretical part, and after worked on the cases within the work forum.

   When the on-line test is completed, the system will send him/her his/her mark, commenting on the responses that have been answered (correct or not) with a short explanation of the reason why the response is correct or incorrect.

   The self-assessment tests can be performed in English as well as in Spanish.

2. **Work Forum:** This Work Forum will be the basic tool used in the Masters. The work Forum is a meeting point between the students and Professors, where they will have the opportunity to discuss, express doubts and exchange experiences mainly about the clinical cases proposed by the professor, also allowing the students if they so wish, to provide their own clinical cases for discussion.

   The cases are included within the work Forum to allow the student to discuss them with the Professors and with the rest of the students.

   The work Forum will be exclusively in English, being a single forum for all the students.

3. **Clinical cases and questions:** The students in the work forum will have the opportunity to present their own clinical cases to be uploaded to the Work Forum or they may be sent more confidentially by e-mail to the Professors.

# International Masters Degree in Pulmonary Hypertension

| MODULES | SUBJECTS | OBJECTIVES | TEACHERS |
|---|---|---|---|
| **MODULE 1:**<br><br>**PULMONARY HYPERTENSION: DEFINITION, PATHOPHYSIOLOGY AND PATHOBIOLOGY** | ***Definition, Classification and Epidemiology of Pulmonary Hypertension*** | Knowing and understanding the classification of pulmonary hypertension, the epidemiological characteristics of different subgroups of pulmonary hypertension and the general characteristics in diagnostic and therapeutic management. Specific healthcare organization. | Pilar Escribano Subias<br>José Ramón González-Juanatey |
| | ***Basic Concepts of Pulmonary Circulation*** | Knowing and understanding the basic hemodynamic concepts of pulmonary circulation: right ventricle and pulmonary vessels. Response to exercise in pulmonary hypertension. | Jean Luck Vachiéry |
| | ***Pathobiology and Genetics of Pulmonary Arterial Hypertension*** | Knowing and undestanding the molecular and cellular basis of the development of the disease, the influence of inflammation and the vascular endothelial growth factors in pulmonary vascular remodeling. To study the influence of genetic mutations in the development of the disease and the importance of genetic study / advice. | David Montani |
| **MODULE 2:**<br><br>**DIAGNOSTIC OF PULMONARY HYPERTENSION** | ***Diagnostic algorithm and Prognostic evaluation in Pulmonary Hypertension*** | Learning how to make accurate diagnosis in patients with pulmonary hypertension. Recognizing the most frequent mistakes that come with and to establish the indications to perform a systematic study in a patient with high pulmonary pressures.<br>Learning how to asses functional and physical exercises capacity in pulmonary hypertension patients and the main prognostic factors of the disease. | Julio Sandoval Zárate<br>Ángela Flox Camacho |
| | ***Noninvasive Imaging Techniques in Pulmonary Hypertension: Echocardiography, Cardiac Resonance Imaging and CT scan*** | Learning the noninvasive imaging techniques required for a proper diagnosis and the follow up of patients with PH. Its application in the differential diagnostic and in the detection of complication. We will value the skill acquired in the interpretation and images in: echocardiography, cardiac magnetic resonance and thoracic CT. | Carmen Jiménez López-Guarch<br>Sergio Alonso Cartherina |
| | ***Cardiac Catheterization: Diagnostic Approach*** | Learning the sistematic processing for right heart catheterization, both diagnostic as well as the acute vasodilator test. Correctly interpreted the results. Indication of exercise catheterization and volume overload catheterization. Developing and interpreting the images of pulmonary angiography. | Stephan Rosenkranz<br>Teresa Velázquez Martin |
| **MODULE 3:**<br><br>**TREATMENT OF PULMONARY ARTERIAL HYPERTENSION (I): PHARMACOLOGICAL TREATMENT** | ***General Procedures and Conventional Treatment. Pregnancy and contraception. Rehabilitation*** | Learning recomendation of PH patients way of living. Focused on birth control methods and pregnancy, infectious prophilaxis, diet and traveling. Learning the management of diuretics, digoxin, anticoagulation and calcium channel antagonist. Organizing and developing rehabilitation programs for PH patients. | Pedro Luis Sánchez Fernández<br>Paz Sanz Ayán<br>Teresa Mombiela |
| | ***The Nitric Oxide Pathway : Oral sGC stimulator and Inhibitors of PDE-5. Antagonists of Endothelin Receptors*** | Learning available and under research drugs (on-going clinical trials). Mechanisms of action, main indications and adverse effects, as well as the most relevant drug interactions. | Tomás Pulido Zamudio |
| | ***Prostacyclin and Analogues*** | Learning available and under research drugs (on-going clinical trials). Mechanisms of action, main indications and adverse effects as well as the most relevant drug interactions. Proper use and maintenance of drugs administration devices, as well as educational training programs for patients and families. | Pilar Escribano Subias<br>Asunción Parra García |
| **MODULE 4:**<br><br>**TREATMENT OF PULMONARY ARTERIAL HYPERTENSION (II): GLOBAL CONSIDERATIONS AND NON PHARMACOLOGICAL TREATMENT** | ***Treatment by Objectives in Pulmonary Hypertension*** | Learning current therapeutic strategies focused on individual established goals throughout the course of the illness. | Rogério de Souza |
| | ***Lung/Cardiopulmonary Transplantation and Balloon Atrial Septostomy*** | Learning the accurate time of deriving patients with PH for assessment in transplants programs. Criteria for selection the most appropriate technique (double lung or heart and lung). Long-term results and specific point of view of surgeons and physician. Atrial septostomy indications: safety and results | Paul Corris<br>Antonio Roman Broto<br>Julio Sandoval Zárate |
| | ***Lines of Research*** | Learning the branches of research in the treatment of PH. Focused on new antiproliferative agents and stem cell therapy. | Isabel Blanco Vich |
| **MODULE 5:**<br><br>**SPECIAL THERAPEUTIC CONSIDERATIONS** | ***Pulmonary Hypertension associated to Connective Tissue Diseases*** | Learning the specific characteristics of PH associated with connective tissue disease. Epidemiology and screening. Special therapeutic requirements. | Otylia Kowal-Bielecka<br>Patricia Carreira Delgado |
| | ***Pulmonary Hypertension associated to HIV and Portopulmonary*** | Management of patients with pulmonary hypertension associated HIV. Learning and understanding the hemodynamics of pulmonary hypertension in patients with portal hypertension. Epidemiology and screening techniques. Medical treatment and evolution of Portopulmonary PH after liver transplantation. | Teresa Mombiela<br>Jorge Osvaldo Cáneva |
| | ***Pulmonary Hypertension associated to Congenital Heart Disease in Adults*** | Classification and epidemiology of PH associated to congenital heart disease in adults. Special needs in therapeutic approach. PH and repairment of the systemic-pulmonary shunt. | Rafael Alonso González<br>Michael A. Gatzoulis |
| | ***Pulmonary Hypertension in Pediatrics*** | Special features of PH in the pediatric age: PH associated with congenital heart disease, respiratory disease and pulmonary arterial hypertension. Epidemiology. Interventional treatment and lung transplantation. | María Jesús del Cerro Marín<br>Shahin Moledina |
| **MODULE 6:**<br><br>**NON ARTERIAL PULMONARY HYPERTENSION** | ***Chronic Thromboembolic Pulmonary Hypertension*** | Learning the specific characteristics of chronic thromboembolic PH. Epidemiology, risk factors, differential diagnosis. Medical and surgical treatment. Selection of patients for pulmonary thromboendarterectomy. Point of view of the physician and the surgeon. | David Jenkins<br>Joanna Pepke-Zaba |
| | ***Pulmonary Hypertension in the Intensive Care Unit. Arrhythmias in Pulmonary Hypertension*** | Management of patients with pulmonary hypertension in the intensive care unit. Focus on heart and respiratory failure. Indications of circulatory support devices.<br>Diagnosis and treatment of arrhythmias in patients with pulmonary arterial hypertension. | David Montani<br>María José Ruiz Cano |
| | ***Pulmonary Hypertension due to lung disease*** | Definition and epidemiology. Differential diagnosis with pulmonary arterial hypertension. | Joan Albert Barberà Mir |
| | ***Pulmonary Hypertension due to left heart disease*** | Definition and epidemiology. Indications for the performance of hemodynamic study. Prognostic significance and implications in cardiac transplantation. | Juan Delgado Jiménez |

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# International Masters Degree in Pulmonary Hypertension

## Academic Directors

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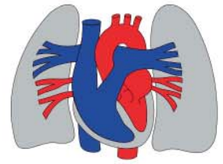

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## Registration for “International Masters Degree in Pulmonary Hypertension”

You may pre-register to the Master on-line, through the Website: **www.masterpulmonaryhypertension.org**

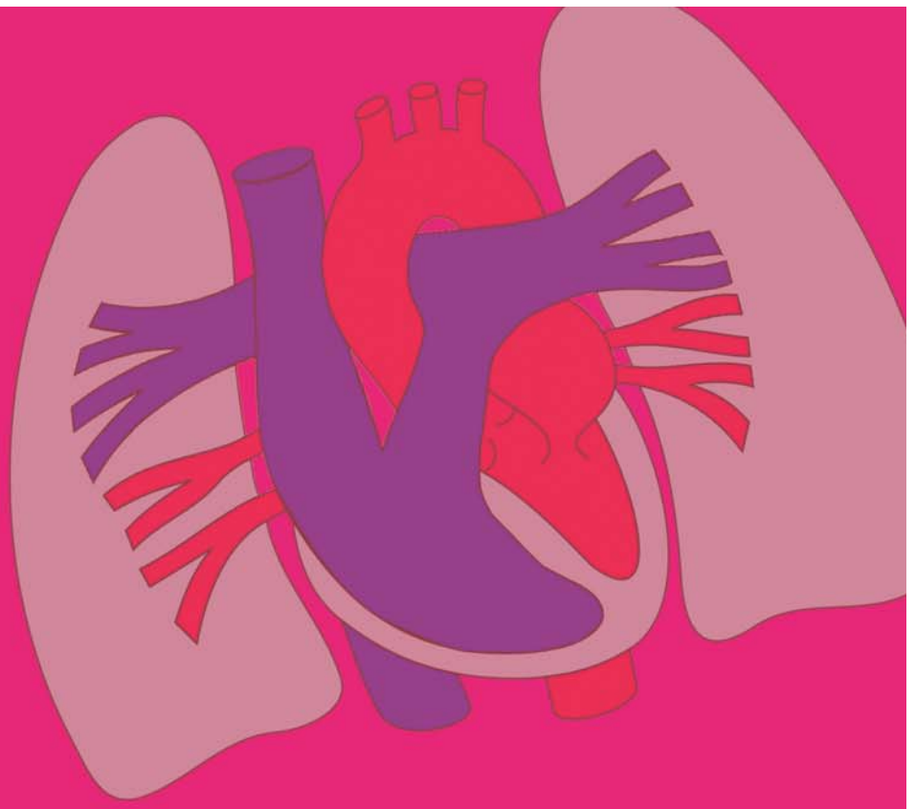
Please note that we have limited placement and therefore the admission to the Master will be in strict first come first saved registration.

An e-mail confirming your registration will be sent to you. After receiving this e-mail, you must send via email (**masterph@shmedical.es**), the following documents:

- Scanned copy of your **Official Medical Degree Certificate** (both sides).
- Scanned copy of your **Nat’l ID No** (both sides).
- A **photograph** of yourself.

Registration fees: 3.300,00 €

The official Registration will be made only upon receiving of the documents and full payment. An e-mail confirming registration will be sent to you only after receiving the required fee and the documents.



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This Master is auspices by:

Sociedad Española de **Neumología y Cirugía Torácica** SEPAR

ASOCIACION ARGENTINA DE MEDICINA RESPIRATORIA

## Coordinating Training Center

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