

Postgraduate Diploma

Screening, Molecular Biology
and Staging of Thoracic Cancer



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Screening, Molecular Biology and Staging of Thoracic Cancer

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 20 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-screening-molecular-biology-staging-thoracic-cancer

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01

Introduction

Lung cancer is a major health problem. In developed countries, it is the cancer with the highest mortality rate in men, while in women it is the fourth most frequent cancer and the second in terms of mortality.





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Nowadays, molecular biology is key in the diagnosis and treatment of cancer, and has gone from being a field of research to an essential tool in the management of oncology patients”

Recent studies have reported a reduction in lung cancer mortality among current and former smokers with a minimum of 30 packs/year following the use of low-dose helical computed tomography, and have provided sufficient evidence to establish strong international recommendations for lung cancer prevention. Therefore, a more frequent future presentation of lung cancer will be via a solitary pulmonary nodule, a relevant fact given that diagnosis at advanced stages has been the norm in the last 30 years and the reason for the low prevalence of this disease.

On the other hand, the anti-smoking policies that have been implemented in the last decade are changing the profile of the patient who is usually seen in the office, and although it is not yet very evident, it will become more evident in the coming years.

Therefore, this program contains key and relevant topics for the near future in this field, such as lung cancer screening programs.

Nowadays, talking about oncology means talking about "multidisciplinary teams", about advances in fields of science that are increasingly involved, and this, apart from being interesting, means that we need continuous training that is often difficult to acquire in other training courses or congresses since they are oriented to a very specific area and specific to a single specialty. Not losing this multidisciplinary vision is very important because many advances in one area can have implications in the diagnostic and therapeutic algorithms used in oncology. In fact, one of the skills that we aim for the students to achieve with this program is to have a broad and clear vision of oncology, and to use the comparison of scientific advances in each area as a tool that will allow them to advance in their knowledge.

This **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- Clinical practical cases presented by experts in the different specialties
- The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- New developments in Screening, Molecular Biology and Staging of Thoracic Cancer
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- With special emphasis on evidence-based medicine and research methodologies in Screening, Molecular Biology and Staging of Thoracic Cancer
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an internet connection



Expand your knowledge through the Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer, in a practical way and adapted to your needs"

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This Postgraduate Diploma is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in Screening, Molecular Biology and Staging of Thoracic Cancer, you will obtain a qualification endorsed by TECH Global University”

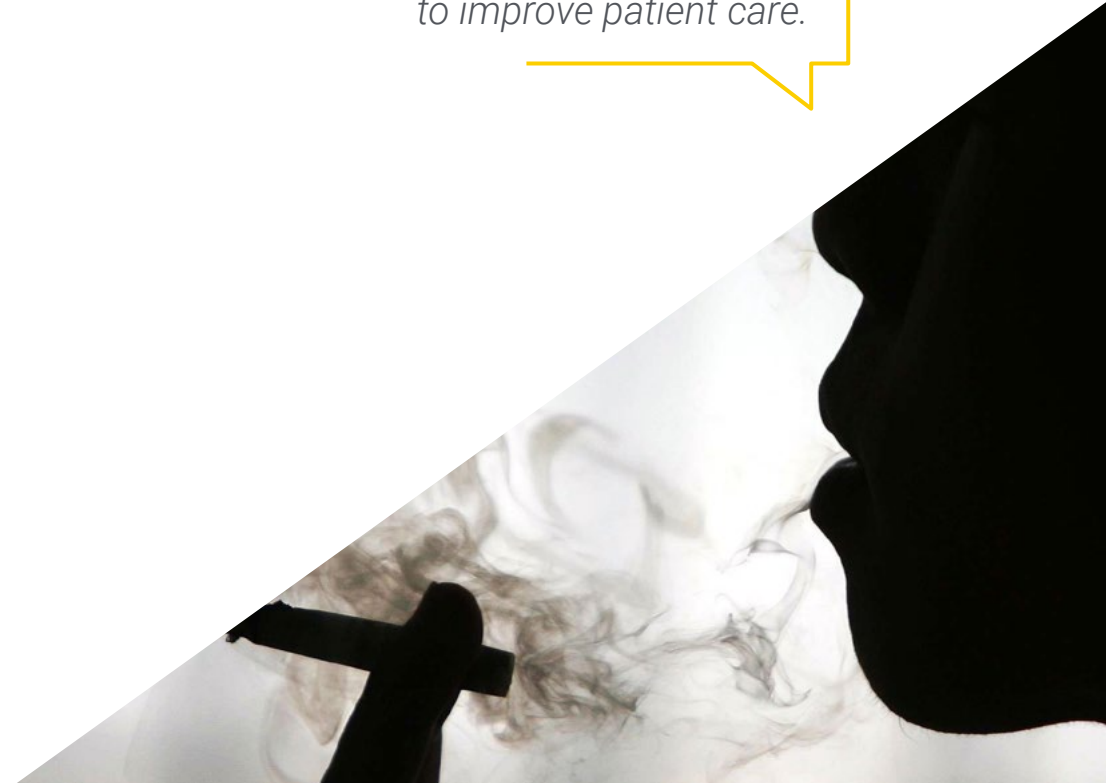
Its teaching staff includes health professionals belonging to the field of thoracic oncology, who contribute their work experience to this program, in addition to renowned specialists belonging to leading scientific societies.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professionals a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this reason, they will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of thoracic oncology who have extensive teaching experience.

Increase your decision-making confidence by updating your knowledge with this Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer.

Don't miss the opportunity to update your knowledge in Screening, Molecular Biology and Staging of Thoracic Cancer to improve patient care.



02

Objectives

The main objective of the program is the development of theoretical and practical learning, so that the physician can master in a practical and rigorous way the study of screening, molecular biology and staging of thoracic cancer.





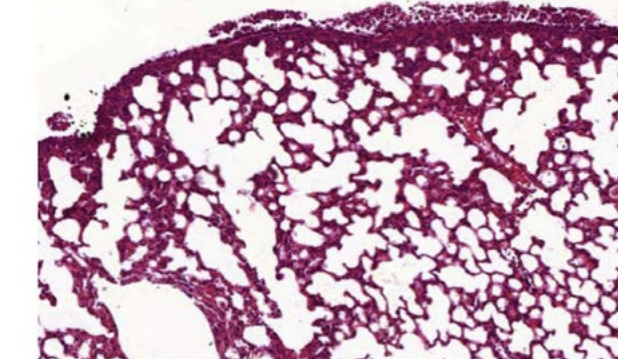
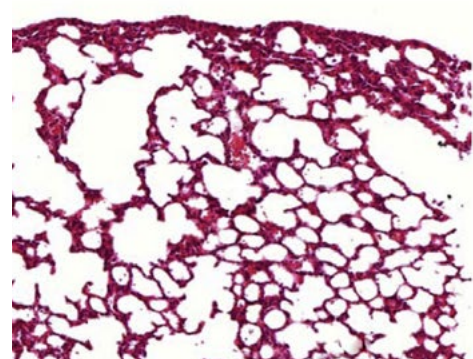
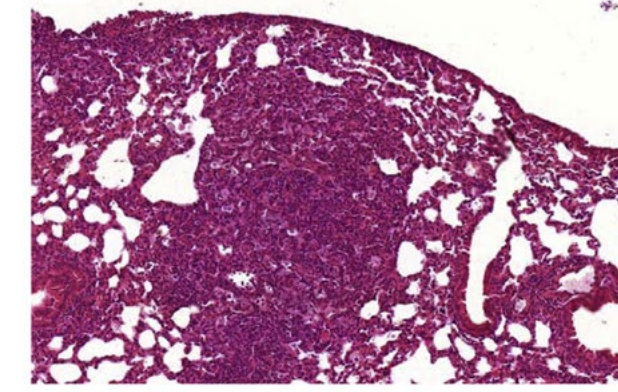
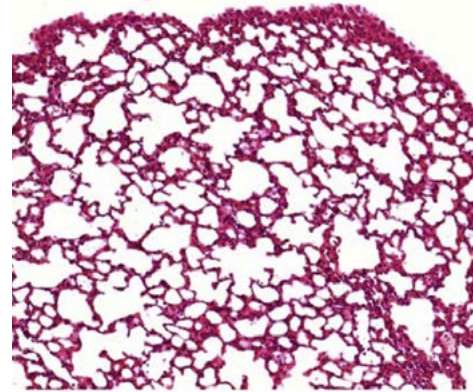
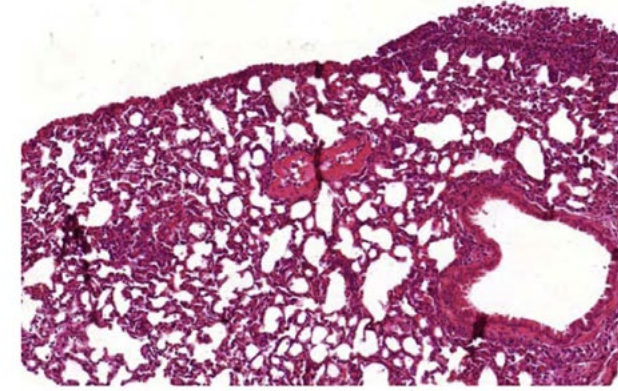
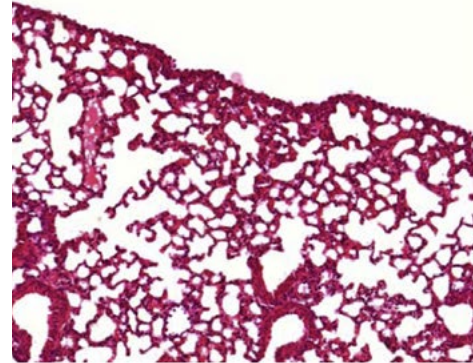
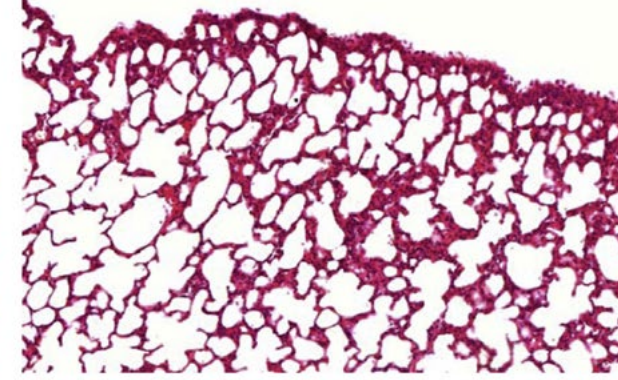
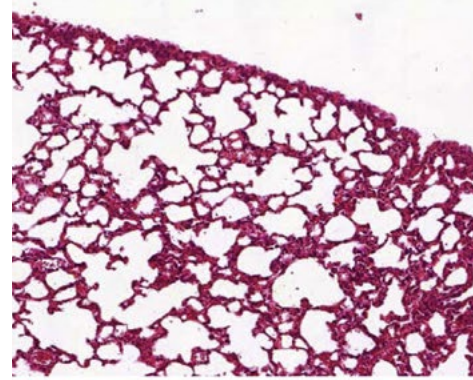
“

This refresher program will generate a sense of confidence when practicing medicine and will help you grow both personally and professionally”



General Objective

- To create a global and up-to-date vision of thoracic oncology and all its aspects, allowing the student to acquire useful knowledge and, at the same time, to generate interest in expanding the information and discovering its application in daily practice





Specific Objectives

Module 1. Etiology, Prevention and Screening

- ♦ Analyze the effectiveness of different tests proposed for lung cancer screening: low-resolution helical computed tomography, chest radiography and sputum cytology in the early diagnosis of lung cancer
- ♦ Define the potential of other screening tests and estimate the population susceptible to be screened for lung cancer
- ♦ Update knowledge in the molecular biology of cancer, especially in relation to the concept of genetic heterogeneity, circulating biomarkers and tissue molecular markers

Module 2. Translational Oncology

- ♦ Provide and expand knowledge on immunotherapy, as an example of a clear scientific advance in translational research, and one of the most promising lines of research in cancer treatment
- ♦ Create a global and updated vision of the exposed topics that will allow the student to acquire useful knowledge and at the same time, generate interest in expanding the information and discovering its application in their daily practice
- ♦ Define the potential of other screening tests and estimate the population susceptible to be screened for lung cancer

Module 3. Diagnosis and Staging

- ♦ Review the performance and usefulness of each of the tests used in the diagnosis of thoracic tumors
- ♦ Describe the usefulness and performance of PET/CT with F18-FDG in the diagnosis, staging, treatment control and monitoring of thoracic tumors
- ♦ Learn more about thoracic MRI since it provides very complete anatomical information that can be fundamental for the patient's treatment, in addition to a functional assessment, and on many occasions its tissue characterization
- ♦ Review of available diagnostic tests for the assessment of cardiopulmonary reserve, necessary for the identification of patients at high risk of developing perioperative complications and significant long-term functional limitation after resection surgery
- ♦ Review the changes proposed for the new edition of the TNM, which imply a more accurate tumor staging



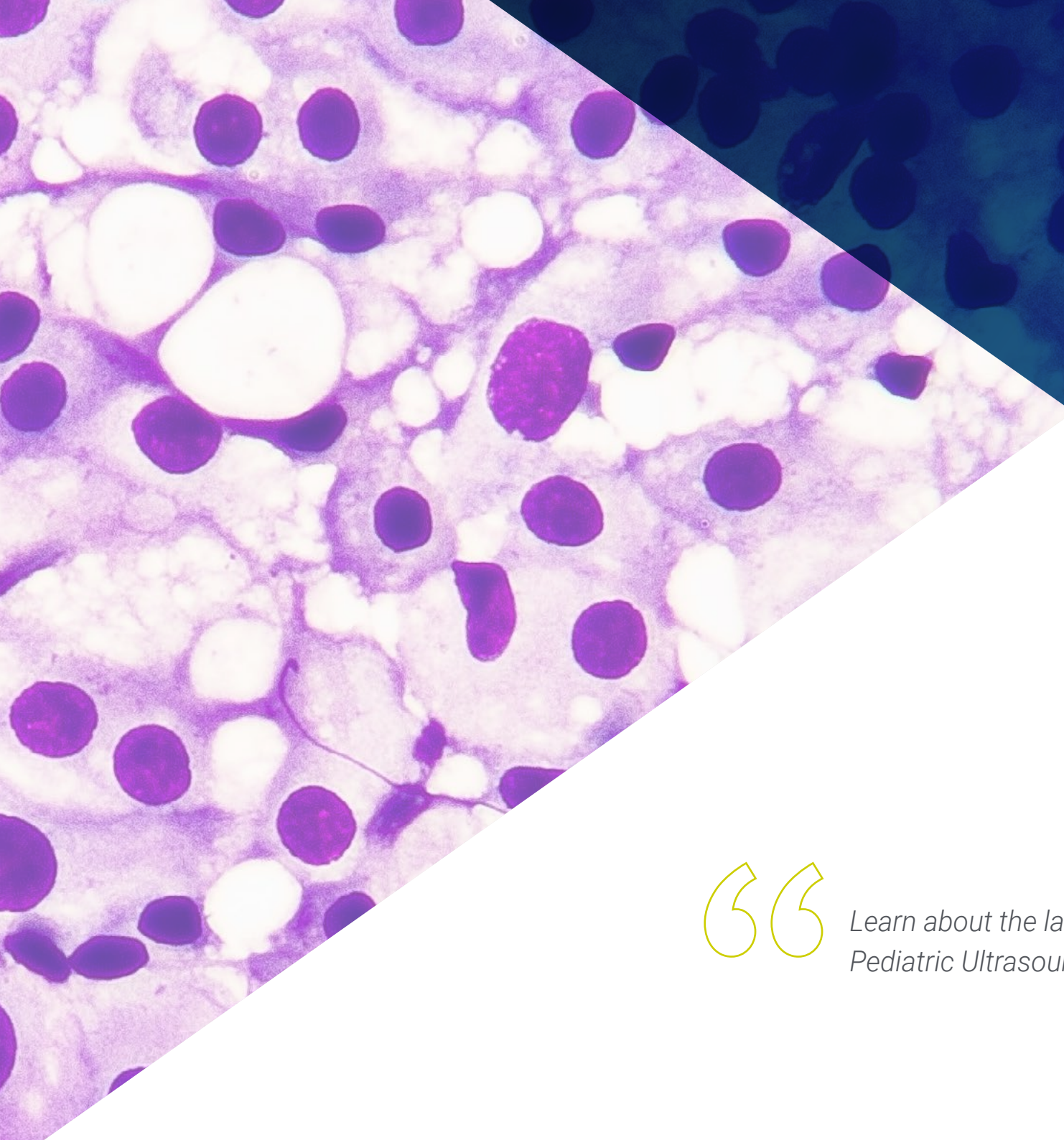
Make the most of this opportunity and take the step to get up to date on the latest developments in Screening, Molecular Biology and Staging of Thoracic Cancer"

03

Course Management

This program includes in its teaching staff health professionals of recognized prestige, who belong to the field of thoracic oncology and who bring to this training the experience of their work. In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.





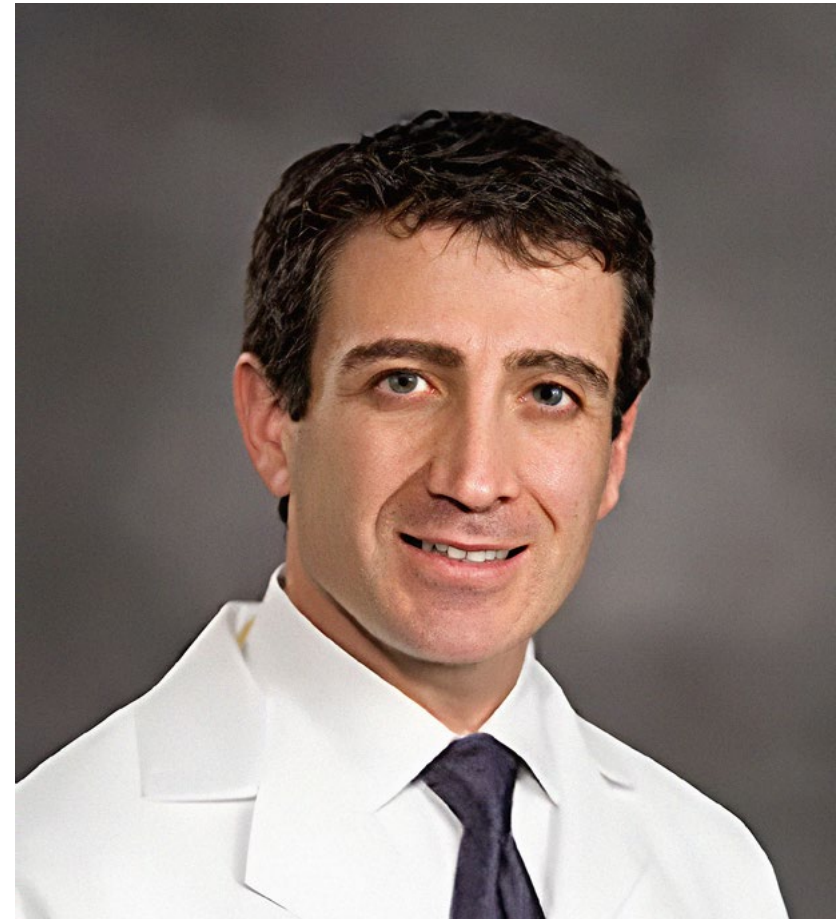
Learn about the latest advances in Clinical Pediatric Ultrasound from leading professionals”

International Guest Director

Awarded for his contribution to innovative advances in the field of **Radiation Oncology**, Dr. Drew Moghanaki is a reference in the treatment of **Lung Cancer**. He specializes in advanced techniques such as **Intensity Modulated Radiation Therapy** to offer more precise, effective and less invasive treatments to his patients. In this sense, he has performed his work in reference health institutions such as **UCLA Health in California, United States**.

He has also been a pioneer in the implementation of **Stereotactic Body Radiotherapy for Lung Tumors**. Through this technique, he has managed to increase survival rates and significantly optimize the quality of life of numerous users. It has also developed a multidisciplinary approach in the management of **Neoplasms**, which has helped specialists to design personalized treatments to improve their clinical results. On the other hand, he has managed more than **50 million dollars in Lung Cancer program** development through the **U.S. Department of Veterans Affairs**. His initiatives have been instrumental in driving progress in diagnosis, treatment and access to high quality care for people who have served in the Armed Forces.

Committed to excellence, he balances this work with his role as a **clinical researcher**. In this sense, he has published numerous scientific articles on subjects such as **Magnetic Resonance Guided Radiotherapy**. One of his most outstanding works is the **VALOR** trial, focused on the analysis of the effectiveness of surgery and Stereotactic Radiotherapy in Lung Cancer. Thanks to this, physicians have obtained solid scientific evidence to make **informed decisions** about the best approach for the treatment of this pathology taking into account the specific characteristics of the patients. In addition, he participates as a speaker at scientific congresses to discuss the latest innovations in **Radiation Oncology**.



Dr. Moghanaki, Drew

- Chief of the Thoracic Oncology Service at UCLA Health, California, United States
- Director of Clinical Research at the U.S. Department of Veterans Affairs
- Director of Pulmonary Precision Oncology at the West Los Angeles VA Medical Center
- Section Chief of Radiation Oncology at VA Greater Los Angeles Health System
- Chair of Diagnostic Research Team at UCLA Jonsson Comprehensive Cancer Center
- Radiation Epidemiology Oncology Residency at the University of Pennsylvania
- General Surgery Internship at Vanderbilt University Medical Center
- M.D. from Vanderbilt University School of Medicine
- Master's Degree in Public Health and Epidemiology from University of California
- Bachelor of Science degree in Biochemistry from California Polytechnic State University.
- Member of: American Cancer Society, American Society for Radiosurgery, International Association for the Study of Lung Cancer



Thanks to TECH, you will be able to learn with the best professionals in the world"

Management



Dr. Oruezábal Moreno, Mauro Javier

- ♦ Head of the medical Oncology Service at La Paz University Hospital
- ♦ Research Fellow at University of Southampton
- ♦ Master's Degree in Bioinformatics and biostatistics UOC-UB
- ♦ Master's Degree in bioinformatic analysis by the Pablo de Olavide University
- ♦ Doctor of Medicine from the Complutense University of Madrid. Outstanding Cum Laude Qualification
- ♦ Member of the Spanish Society of Medical Oncology and GECP Group (Spanish Spanish Group of Lung)
- ♦ Specialist (MIR) in Medical Oncology, University Hospital San Carlos of Madrid
- ♦ Degree in Medicine and Surgery, University of Navarra



Dr. Villar Álvarez, Felipe

- ♦ Associate Physician of Pulmonology, Jiménez Díaz Foundation University Hospital, Madrid
- ♦ Director of the Editorial Committee of the Respiratory Pathology Journal of Neumomadrid
- ♦ Researcher of the CIBER network of Respiratory Diseases (CIBERES) belonging to Group 04
- ♦ Member of the Madrid Society of Pulmonology and Thoracic Surgery (Neumomadrid), the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) and the European Respiratory Society (ERS)
- ♦ Master's Degree in Clinical Unit Management. Murcia University
- ♦ Doctor of Medicine from the Complutense University Madrid (2011). Outstanding Cum Laude Qualification. Best Doctoral Thesis Award in Pulmonology and Thoracic Surgery 2010-2011 by the Madrid Society of Pulmonology and Thoracic Surgery (Neumomadrid)
- ♦ Specialist (MIR) in Pulmonology. Gregorio Marañón General University Hospital
- ♦ Degree in Medicine from the University of Salamanca



Dr. Muguruza Trueba, Ignacio

- ♦ Head of Department, Quirónsalud Public Hospitals
- ♦ Surgeon certified in robotic surgery
- ♦ Associate Professor of Medicine Rey Juan Carlos University of Madrid
- ♦ Director Integrated Research Project (IIP) of Thoracic Oncology of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR)
- ♦ Secretary Integrated Research Project (IIP) Thoracic Oncology SEPAR
- ♦ Secretary Thoracic Oncology Area National Society of Pulmonology and Thoracic Surgery (SEPAR)
- ♦ Deputy Director of the Editorial Committee of the Respiratory Pathology Journal of Neumomadrid
- ♦ Member of the National Commission of Thoracic Surgery, Ministry of Health
- ♦ Pneumomadrid Oncology Area Coordinator
- ♦ PhD in Medicine from the University of Alcalá de Henares. Outstanding Cum Laude Qualification
- ♦ Lung transplant program Ramón y Cajal Hospital
- ♦ Associate Physician in Thoracic Surgery Ramón y Cajal University Hospital
- ♦ Specialist (MIR) in Thoracic Surgery, Ramón y Cajal University Hospital, Madrid
- ♦ Degree in Medicine and Surgery, Autonomous University of Madrid

Professors

Dr. Martín de San Pablo Sánchez, Alejandro

- ◆ Degree in Medicine and Surgery
- ◆ Department of Pulmonology, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Salgado Aranda, Sergio

- ◆ Degree in Medicine and Surgery
- ◆ Pulmonology Department, Sureste University Hospital. Madrid, Spain

Dr. Torres Rivas, Hector Enrique

- ◆ Degree in Medicine and Surgery
- ◆ Department of Anatomical Pathology, Asturias Central University Hospital, Spain.

Dr. Call Caja, Sergi

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Mútua Terrassa University Hospital. Barcelona, Spain

Dr. Puente Maestú, Luis

- ◆ Degree in Medicine and Surgery
- ◆ Department of Pulmonology, Gregorio Marañón General University Hospital. Madrid, Spain

Dr. Ramí Porta, Ramón

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Mútua Terrassa University Hospital. Barcelona, Spain

Dr. González Aragonese, Federico

- ◆ Degree in Medicine and Surgery
- ◆ Head of Service, Gregorio Marañón General University Hospital, Madrid

Dr. Moreno Mata, Nicolás

- ◆ Degree in Medicine and Surgery
- ◆ Head of Thoracic Surgery Department, Ramón y Cajal University Hospital, Madrid

Dr. Vicente Antunes, Sara Isabel

- ◆ Degree in Medicine and Surgery
- ◆ Department of Thoracic surgery, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Marrón Fernández, Carmen

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, 12 de Octubre University Hospital. Madrid, Spain

Dr. Cabañero Sánchez, Alberto

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Gómez de Antonio, David

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Puerta de Hierro University Hospital. Madrid, Spain

Dr. Jiménez Hiscock, Luís

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, HM University Hospital. Madrid, Spain

Dr. Saldaña Garrido, David

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Moreno Basalobre, Ramón

- ♦ Degree in Medicine and Surgery
- ♦ Head of Thoracic Oncology Service, La Princesa Hospital in Madrid and MD Anderson Cancer Center Hospital

Dr. Gámez García, Antonio Pablo

- ♦ Degree in Medicine and Surgery
- ♦ Head of the Thoracic Surgery Service of the Lung Transplant Unit, 12 de Octubre University Hospital. Madrid, Spain

Dr. Díaz Agero, Prudencio

- ♦ Degree in Medicine and Surgery
- ♦ Thoracic Surgery Department, La Paz University Hospital. Madrid, Spain

Dr. Hernando Trancho, Florentino

- ♦ Degree in Medicine and Surgery
- ♦ Head of Thoracic Surgery Department, San Carlos University Clinical Hospital

Dr. Rico Oses, Mikel

- ♦ Degree in Medicine and Surgery
- ♦ Department of Radiation Oncology, Navarra Hospital Complex. Navarra, Spain

Dr. Sánchez Rubio, Javier

- ♦ Pharmacy Service, University Hospital of Getafe. Madrid, Spain

Dr. Karachaliou, Niki

- ♦ Degree in Medicine and Surgery
- ♦ Director, Translational Research Program, Quirón Dexeus University Hospital. Barcelona, Spain

Dr. Ruíz, Eva

- ♦ Account and Research Director, Ipsos Healthcare

Dr. Molins López-Rodó, Laureano

- ♦ Degree in Medicine and Surgery
- ♦ Thoracic Surgery Service, Teknon Medical Center of Barcelona, Spain.

Dr. Disdier Vicente, Carlos

- ♦ Pulmonologist in the Pulmonology Department of the Valladolid University Clinical Hospital.
- ♦ Degree in Medicine and Surgery

Dr. Samper Orts, Pilar

- ♦ Degree in Medicine and Surgery
- ♦ Department of Radiation Oncology, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Fernández Aceñero, María Jesús

- ♦ Head of the Pathology Section at the Madrid Clinical Hospital.
- ♦ Head of the Anatomical Pathology Department at the Gregorio Marañón General University Hospital
- ♦ Doctor in Medicine and Anatomical Pathology from the Autonomous University of Madrid.

Dr. Palacios Miras, Carmelo

- ♦ Degree in Medicine and Surgery
- ♦ Radiodiagnostic Service, Jiménez Díaz Foundation. Madrid, Spain

Dr. Godoy Mayoral, Raúl

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Albacete University Hospital Complex. Castilla La Mancha, Spain

Dr. Barreiro Portela, Esther

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Del Mar Hospital. Barcelona, Spain

Dr. Jiménez Ruiz, Carlos

- ♦ Degree in Medicine and Surgery
- ♦ Head of the Specialized Unit on Smoking of the Community of Madrid

Dr. Forcén Vicente de Vera, Elena

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, San Carlos University Clinical Hospital. Madrid, Spain

Dr. Bernabé Barrios, María José

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, San Carlos University Clinical Hospital. Madrid, Spain

Dr. Rajas Naranjo, Olga

- ♦ Degree in Medicine and Surgery
- ♦ Department of Pulmonology, La Princesa University Hospital. Madrid, Spain

Dr. Moral Chacón, Beatriz

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, San Carlos University Clinical Hospital. Madrid, Spain

Dr. Pérez Warnisher, María Teresa

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Villalba General Hospital. Madrid, Spain

Dr. Paramio Gonzalez, Jesús María

- ♦ Degree in Medicine and Surgery
- ♦ CIEMAT Molecular Oncology Department. 12 de Octubre Research Institute Madrid, Spain

Velastegui Ordoñez, Alejandro

- ♦ Degree in Medicine and Surgery
- ♦ Gregorio Marañón University Hospital. Madrid, Spain
- ♦ San Carlos Clinical University Hospital Madrid, Spain

Dr. Rueda Fernández, Daniel

- ♦ Degree in Biochemistry
- ♦ Hereditary Cancer Laboratory. Biochemistry Service
- ♦ 12 de Octubre University Hospital. Madrid, Spain

Dr. García Foncillas López, Jesús

- ♦ Degree in Medicine and Surgery
- ♦ Head of the Department of Medical Oncology, Jiménez Díaz Foundation. Madrid, Spain

Dr. García Castaño, Almudena

- ♦ Degree in Medicine and Surgery
- ♦ Medical Oncology Department, Marques de Valdecilla University Hospital. Santander, Spain

Dr. Pérez Rojo, Raquel

- ◆ Degree in Medicine and Surgery
- ◆ Pulmonology Department, Móstoles University Hospital. Madrid, Spain

Dr. Arnedillo Muñoz, Aurelio

- ◆ Degree in Medicine and Surgery
- ◆ Clinical Management Unit of Pulmonology, Allergy and Thoracic Surgery, Puerta del Mar University Hospital. Cádiz, Spain

Dr. Hidalgo Molina, Antonio

- ◆ Degree in Medicine and Surgery
- ◆ Clinical Management Unit of Pulmonology, Allergy and Thoracic Surgery, Puerta del Mar University Hospital. Cádiz, Spain

Dr. Alcázar Peral, Andrés

- ◆ Degree in Medicine and Surgery
- ◆ Radiodiagnostic Service, Jiménez Díaz Foundation. Madrid, Spain

Dr. Gallardo Madueño, Guillermo

- ◆ Degree in Medicine and Surgery
- ◆ Radiodiagnostic Service, Jiménez Díaz Foundation. Madrid, Spain

Dr. Villena Garrido, Victoria

- ◆ Degree in Medicine and Surgery
- ◆ Pulmonology Department, 12 de Octubre University Hospital. Madrid, Spain

Dr. Benavides Mañas, Pedro Daniel

- ◆ Degree in Medicine and Surgery
- ◆ Pulmonology Department, 12 de Octubre University Hospital. Madrid, Spain

Dr. Jover Díaz, Raquel

- ◆ Degree in Medicine and Surgery
- ◆ Department of Nuclear Medicine, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Aguado de la Rosa, Carlos

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department
- ◆ Associate Physician of the Medical Oncology Department of the San Carlos Clinical Hospital

Dr. Muñoz de la Espada, Víctor Díaz

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Arganda University Hospital. Madrid, Spain

Dr. López Carrizosa, Concha

- ◆ Degree in Medicine and Surgery
- ◆ Department of Radiation Oncology, Gómez Ulla Military Hospital. Madrid, Spain

Dr. Alonso Gordo, Teresa

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Gómez Martínez, Ana

- ♦ Degree in Medicine and Surgery
- ♦ Department of Thoracic Surgery, San Carlos Clinical University Hospital. Madrid, Spain

Dr. Rincón García, David

- ♦ Degree in Medicine and Surgery
- ♦ Department of Thoracic Surgery, Jiménez Díaz Foundation. Madrid, Spain

Dr. Muñoz Molina, Gemma María

- ♦ Degree in Medicine and Surgery
- ♦ Thoracic Surgery Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Gómez García, Rosa María

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Navío Martín, María Pilar

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Ramón y Cajal University Hospital. Madrid, Spain
- ♦ Coordinator of the Pneumomadrid Techniques and Oncology Group.

Dr. Gómez Sancho, Marcos

- ♦ Degree in Medicine and Surgery
- ♦ Former Director of the Palliative Medicine Unit, Gran Canaria Dr. Negrin University Hospital. Spain

Dr. Weber Sánchez, Luis Alejandro

- ♦ Faculty of Bioethics
- ♦ Anahuac University, Naucalpan de Juárez. Mexico City, Mexico

Dr. Carrión Galindo, Rafael

- ♦ Degree in Medicine and Surgery
- ♦ Medical Oncology Department, Arganda University Hospital. Madrid, Spain

Dr. Zapatero Gaviria, José

- ♦ Degree in Medicine and Surgery
- ♦ Head of the Thoracic Surgery Department at the Fundación Jiménez Díaz University Hospital.

Dr. Peñalver Pascual, Rafael

- ♦ Degree in Medicine and Surgery
- ♦ Department of Thoracic Surgery, Gregorio Marañón General University Hospital. Madrid, Spain

Dr. Roiz Andino, Honan

- ♦ Degree in Medicine and Surgery
- ♦ Emergency Department, Príncipe de Asturias University Hospital, Alcalá de Henares. Madrid, Spain

Dr. Barrios Barreto, Deisy

- ♦ Degree in Medicine and Surgery
- ♦ Pulmonology Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Marcos Rodríguez, Jorge Rojas

- ♦ Degree in Medicine and Surgery
- ♦ Department of Internal Medicine, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Yebra Yebra, Miguel

- ♦ Degree in Medicine and Surgery
- ♦ Department of Internal Medicine, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Pérez Martínez, David Andrés

- ◆ Degree in Medicine and Surgery
- ◆ Head of the Neurology Department, 12 de Octubre University Hospital. Madrid, Spain

Dr. Burón Fernández, María del Rosario

- ◆ Degree in Medicine and Surgery
- ◆ Internal Medicine Department, Infanta Cristina University Hospital, Madrid.

Dr. Botella Romero, Francisco

- ◆ Degree in Medicine and Surgery
- ◆ Head of Endocrinology and Nutrition Department
- ◆ Integrated Care Management. Albacete, Spain

Dr. Fernández Calvo, Ovidio

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Vigo University Hospital Complex. Vigo, Spain

Dr. García Fernández, José Luís

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, La Princesa University Hospital, Madrid.
- ◆ MD Anderson Cancer Center Madrid

Dr. González Larriba, Jose Luis

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, San Carlos University Clinical Hospital. Madrid, Spain
- ◆ Director of the Medical Oncology Area of the IMO Group

Dr. Matilla González, José María

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Valladolid Clinical University Hospital. Spain

Dr. Rodríguez de Dios, Nuria

- ◆ Degree in Medicine and Surgery
- ◆ Department of Radiation Oncology, Parc de Salut Hospital. Barcelona

Dr. Gajate Borau, Pablo

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Casal Rubio, Joaquín

- ◆ Degree in Medicine and Surgery
- ◆ Head of the Medical Oncology Department, Álvaro Cunqueiro Hospital Vigo University Hospital Complex, Spain

Dr. Sotoca Ruíz, Amalia

- ◆ Degree in Medicine and Surgery
- ◆ Radiation Oncology Department, Ruber International Hospital. Madrid, Spain

Dr. Guerra Gutiérrez, Félix

- ◆ Degree in Medicine and Surgery
- ◆ Head of Radiodiagnosis Department, General Hospital of Villalva. Madrid, Spain

Dr. Simón Adiego, Carlos

- ◆ Degree in Medicine and Surgery
- ◆ Department of Thoracic Surgery, Gregorio Marañón General University Hospital. Madrid, Spain

Dr. Hernández Marín, Berta

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Service, Navarra Hospital Complex. Navarra, Spain

Dr. Mielgo Rubio, Xabier

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Alcorcón University Foundation Hospital. Madrid, Spain

Dr. Artal Cortés, Ángel

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Miguel Servet University Hospital. Zaragoza. Spain

Dr. Lázaro Quintela, Martín

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Vigo University Hospital Complex. Vigo, Spain

Dr. Domine Gómez, Manuel

- ◆ Degree in Medicine and Surgery
- ◆ Associate Head of Medical Oncology, Jiménez Díaz Foundation. Madrid, Spain

Dr. Garrido López, Pilar

- ◆ Degree in Medicine and Surgery
- ◆ Head of Medical Oncology Section, Ramón y Cajal University Hospital, Madrid.

Dr. Girón Girón, Carlos

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Burgos University Hospital. Burgos, Spain

Dr. García García, Yolanda

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department
- ◆ Parc Taulí University Hospital. Barcelona, Spain
- ◆ Research and Innovation Institute Parc Taulí I3PT

Dr. García Campelo, María Rosario

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, La Coruña University Hospital. Spain

Dr. Felip Font, Enriqueta

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department
- ◆ Head of Thoracic Tumors Unit
- ◆ Vall d'Hebron Institute of Oncology. Barcelona, Spain

Dr. Esteban González, Emilio

- ◆ Degree in Medicine and Surgery
- ◆ Head of the Medical Oncology Department of HUCA
- ◆ Associate Professor in the Medicine Department at the University of Oviedo

Dr. Cobo Dols, Manuel

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Carlos Haya University Hospital. Málaga, Spain

Dr. Ponce Aix, Santiago

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, 12 de Octubre University Hospital. Madrid, Spain

Dr. Palomar Coloma, Virginia

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department
- ◆ Associate Physician of the Medical Oncology Department of the San Carlos Clinical Hospital

Dr. Juan Vidal, Óscar

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, La Fe University Hospital. Valencia, Spain

Dr. de Olaiz Navarro, Beatriz

- ◆ Degree in Medicine and Surgery
- ◆ Thoracic Surgery Department, Getafe University Hospital. Madrid, Spain

Dr. López Ramírez, María Escarlata

- ◆ Degree in Medicine and Surgery
- ◆ Head of Radiation Oncology Department, Jiménez Díaz Foundation. Madrid, Spain

Dr. Ballesteros Burgues, Javier

- ◆ Degree in Medicine and Surgery, University Hospital of Arganda. Madrid, Spain

Dr. Couñago Lorenzo, Felipe

- ◆ Degree in Medicine and Surgery
- ◆ Radiation Oncology Service, Quirón Salud-Pozuelo University Hospital. Madrid, Spain

Dr. Grande Pulido, Enrique

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Service
- ◆ MD Anderson Madrid Cancer Center

Dr. Firvida Pérez, José Luis

- ◆ Degree in Medicine and Surgery
- ◆ Medical Oncology Department, Orense University Hospital Complex. Orense, Spain

Dr. García Salmones, Mercedes

- ◆ Degree in Medicine and Surgery
- ◆ Department of Pulmonology, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Segrelles Calvo, Gonzalo

- ◆ Degree in Medicine and Surgery
- ◆ Department of Pulmonology, Rey Juan Carlos University Hospital. Madrid, Spain

Dr. Perdices Ramírez, Javier

- ♦ Degree in Medicine and Surgery
- ♦ Senior Telecommunications Engineer

Dr. Cabrer Gonzalez, Miguel Luís

- ♦ Degree in Medicine and Surgery
- ♦ Head of IT
- ♦ Senior Engineer of Computer Science

Dr. Olivas Varela, José Ángel

- ♦ Sub-Director Technologies and Information Systems Department
- ♦ College of Computer Science
- ♦ University of Castilla La Mancha

Dr. Jiménez Merchán, Rafael

- ♦ Degree in Medicine and Surgery
- ♦ Head of Thoracic Surgery Department, Virgen Macarena Hospital, Sevilla

Dr. Fernández Gómez Escolar, Pablo

- ♦ Degree in Medicine and Surgery
- ♦ Department of Thoracic Surgery, Jiménez Díaz Foundation

Dr. Bellido Reyes, Yuri Anthony

- ♦ Degree in Medicine and Surgery
- ♦ Thoracic Surgery Department, Villalba General Hospital

Dr. Martínez Muñiz, Francisco de Borja

- ♦ Pulmonology Department, Príncipe de Asturias University Hospital

Dr. Flandes Aldeyturriaga, Javier

- ♦ Pulmonology Department, Príncipe de Asturias University Hospital

Dr. Carrillo, Esteban

- ♦ Degree in Medicine and Surgery
- ♦ Antares Consulting

Dr. Astudillo González, Aurora

- ♦ Degree in Medicine and Surgery
- ♦ Anatomical Pathology Service
- ♦ Associate Professor at the University of Oviedo linked to the Central University Hospital of Asturias (HUCA)
- ♦ Scientific Director of the Principality of Asturias Biobank. Spain

Dr. Calles Blanco, Antonio

- ♦ Degree in Medicine and Surgery
- ♦ Department of Medical Oncology, Gregorio Marañón General University Hospital. Madrid, Spain

Dr. Couselo, María Luz

- ♦ Degree in Medicine and Surgery
- ♦ Department of Radiation Oncology, Gómez Ulla University Hospital. Madrid, Spain

Dr. Vallejo Ocaña, Carmen

- ♦ Degree in Medicine and Surgery
- ♦ Department of Radiation Oncology, Ramón y Cajal University Hospital. Madrid, Spain

Dr. Mejías Estevez, Manuel

- ♦ Degree in Medicine and Surgery
- ♦ Clinical Management Unit Oncology and Palliative Care, Jerez Hospital. Cádiz, Spain

Dr. Puente Muñoz, Ana Isabel

- ♦ Degree in Medicine and Surgery
- ♦ Clinical Neurophysiology Service, Red Cross Hospital. Madrid, Spain

Dr. Rodríguez Pérez, Aurora

- ♦ Degree in Medicine and Surgery
- ♦ Head of Radiation Oncology Department, Ruber International Hospital. Madrid, Spain

Dr. García Baquero, María Teresa

- ♦ Degree in Medicine and Surgery from the University of Extremadura
- ♦ Former Regional Coordinator of Palliative Care of the Community of Madrid. Spain

Dr. Ahechu Garayoa, Patricia

- ♦ Clinical University of Navarra, Resident

Dr. Dujovne Lindenbaum, Paula

- ♦ Specialist Area Physician, Alcorcón Foundation University Hospital

Dr. Jarabo Sarceda, José Ramón

- ♦ Thoracic Surgery Department, San Carlos Clinical Hospital, Madrid, Spain.

Dr. Lladó Garriga, Laura

- ♦ Specialist Area Physician, Bellvitge University Hospital

Dr. Tuero Ojanguren, Carlota

- ♦ Clinical University of Navarra, Resident

Dr. Hoyos Mejía, Lukas

- ♦ Area Specialist, Puerta de Hierro University Hospital. Majadahonda

Dr. Vega López, Laura

- ♦ General Surgery Specialist at the Fundación Alcorcón University Hospital
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Specialist in General and Digestive System Surgery at the Fundación Alcorcón University Hospital
- ♦ Master's Degree in Clinical Management, Medical and Healthcare Administration at TECH Technological University
- ♦ Specialist Degree in Digital Teaching for Medicine from TECH Technological University
- ♦ Specialist Degree in Leadership and Management Skills in Health at CEU University
- ♦ Specialist Degree in Medical Quality Management in CEU University
- ♦ Spanish Association of Surgeons (AEC)
- ♦ Member of the Spanish Association of Coloproctology (AECOP)

04

Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of specializing in daily medical practice, aware of the relevance of current education to be able to act before the patient with thoracic oncologic pathology and committed to quality teaching through new educational technologies.



“

This Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer contains the most complete and up-to-date scientific program on the market”

Module 1. Etiology, Prevention and Screening

- 1.1. Risk Factors and Prevention
 - 1.1.1. Risk Factors
 - 1.1.2. Lung Cancer and Other Respiratory Diseases (COPD, OSAHS)
 - 1.1.3. Smoking Cessation
- 1.2. Solitary Pulmonary Nodule
 - 1.2.1. Definition and Etiology. Estimation of Malignancy
 - 1.2.2. Diagnostic Techniques in the Study of Solitary Pulmonary Nodules
 - 1.2.3. Sequential Evaluation. Management Algorithm
- 1.3. Screening
 - 1.3.1. Screening. Algorithm of Action
 - 1.3.2. Implementation of Screening in the Healthcare System

Module 2. Translational Oncology

- 2.1. Molecular Biology
 - 2.1.1. Molecular Mechanisms of Cancer
 - 2.1.2. Tumor Immunology: Basis of Cancer Immunotherapy
 - 2.1.3. Microenvironment Reprogramming in Lung Cancer
- 2.2. Translational Oncology
 - 2.2.1. Understanding the New Technology: *Next Generation Sequence* (NGS) in Clinical Practice
 - 2.2.2. Therapeutic Targets in NSCLC
 - 2.2.3. Liquid Biopsies in NSCLC: The Future Is Here
 - 2.2.4. Role of the Biobank in Clinical Research



Module 3. Diagnosis and Staging

- 3.1. Clinical Diagnosis. Serum Markers
 - 3.1.1. Clinical Diagnosis
 - 3.1.2. Paraneoplastic Syndromes
 - 3.1.3. Serum Markers
- 3.2. Imaging Techniques
 - 3.2.1. Chest X-ray
 - 3.2.2. Computed Tomography (CT)
 - 3.2.3. Thoracic Ultrasound Scan
 - 3.2.4. Magnetic Resonance Imaging (MRI) in the Assessment of Thoracic Tumors
 - 3.2.5. Positron Emission Tomography (PET)
- 3.3. Cytohistological Studies
 - 3.3.1. Classification and Anatomopathological Study
 - 3.3.2. Non-Invasive Methods: Sputum Cytology
 - 3.3.3. Non-Surgical Invasive Bronchoscopic Techniques: Standard Bronchoscopy, Ultrasound (EBUS-EUS), Electromagnetic Navigation and Others.
 - 3.3.4. Transthoracic Non-Surgical Invasive Techniques: FNP, CNB, Thoracentesis and Pleural Biopsy
 - 3.3.5. The Role of the Interventional Pathologist in the Diagnosis of Advanced Stage Lung Cancer
 - 3.3.6. Invasive Staging in Lung Cancer
- 3.4. Functional and Staging Assessment
 - 3.4.1. Preoperative Study of Surgical Risk
 - 3.4.2. The Eighth Edition of TNM Classification of Lung Cancer



A unique, key, and decisive training experience to boost your professional development"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06 Certificate

The Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



“

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This private qualification will allow you to obtain a **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

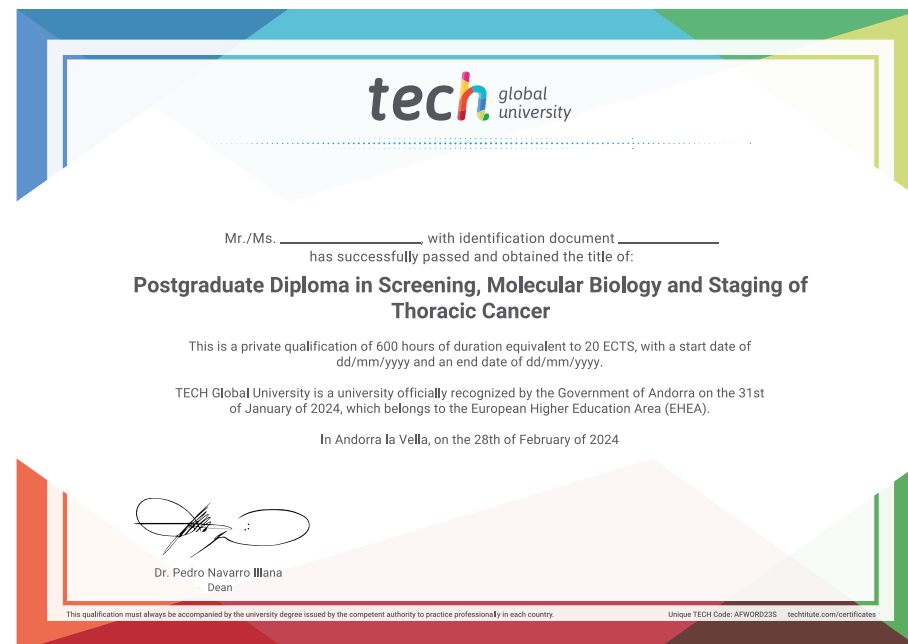
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer**

Modality: **online**

Duration: **6 months**

Accreditation: **20 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.



Postgraduate Diploma

Screening, Molecular
Biology and Staging
of Thoracic Cancer

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 20 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma

Screening, Molecular Biology and Staging of Thoracic Cancer