

DISCOVERIES FOR LUNG CANCER PATIENTS THROUGH INNOVATIVE RESEARCH

2<sup>ND</sup> JOINT MEETING ON LUNG CANCER UT MD ANDERSON CANCER CENTER HOUSTON, TEXAS 14-15TH OCTOBER, 201 T. BOONE PICKENS ACADEMIC TOWER, FLOOR 3, ROOM 1 & 8



Making Cancer History®

## ORGANIZING COMMITTEE



Sendurai Mani, Ph.D. Professor UT MD Anderson Cancer Center Houston, Texas, USA



Ignacio Wistuba, M.D. Professor & Chair UT MD Anderson Cancer Center Houston, Texas, USA



George Calin, M.D., Ph.D. Professor UT MD Anderson Cancer Center Houston, Texas, USA



Paul Hofman, M.D., Ph.D. Professor OncoAge Nice, France

# **UT MD Anderson Cancer Center**

The University of Texas MD Anderson Cancer Center (UT MDACC) is one of the world's most respected cancer centers devoted exclusively to cancer patient care, research, education and prevention.

The mission of The University of Texas MD Anderson Cancer Center is to eliminate cancer in Texas, the nation, and the world through outstanding programs that integrate patient care, research and prevention, and through education for undergraduate and graduate students, trainees, professionals, employees and the public.

# OncoAge

OncoAge is a Hospital-University Federation (FHU) dedicated to foster innovation for ageing population and Cancer management. It has been awarded in December 2015 by AVIESAN and it is supported by the Hospital University of Nice (CHU) and the Côte d'Azur University (UCA).OncoAge brings together the CHU of Nice, the Center Antoine Lacassagne (CAL), the LenvalFoundation, members of AVIESAN of the Côte d'Azur University, Léon Bérard Center (CLB) of Lyon, Gustave Roussy Institute of Villejuif, teams of research institutes IRCAN, IPMC, iBV,C3M, L2PM, Inria, the Department of Mathematics of the UCA. Through these teams the FHUinvolves INSERM, CNRS, Inria, CEA and UCA. These structures bring together their respective strengths in order to develop projects devoted to the development of care, research, innovation and education/training in the field of cancerand ageing.

# SESSION I MONDAY, 14 OCTOBER, 2019

### SESSION I

12:00 PM – 1:30 PM Lunch & Registration

1:20 PM – 1:30 PM Welcome & Introduction Sendurai Mani, Ph.D., Department of Translational Molecular Pathology, UT MDACC, Houston, TX (USA)

**1:30 PM – 2:10 PM Tissue immuno-profiling Strategies in Lung Cancer Ignacio I. Wistuba M.D.,** *Department of Translational Molecular Pathology, UT MDACC, Houston, TX (USA)* 

**2:10 PM – 2:50 PM Non coding RNA, hypoxia and drug resistance in lung cancer Bernard Mari, Ph.D.,** *Institute of Cellular and Molecular Pharmacology, OncoAge, University of Cote d'Azur, Nice France* 

#### 2:50 PM - 3:30 PM

Pre-clinical and translational approaches to capturing mechanisms of immunotherapy response and resistance in NSCLC Don L. Gibbons, M.D., Ph.D., Department of Thoracic/Head & Neck Medical Oncology, UT MDACC, Houston, TX (USA)

3:30 PM – 3:50 PM Break

**3:50 PM – 4:30 PM AI use of images and omics to decode non-small cell lung cancer Marius Ilie, M.D., Ph.D.,** *IRCAN and Nice Hospital, OncoAge, University Cote d'Azur, Nice France* 

**4:30 PM – 5:10 PM** Non-coding DNAs and non-codingRNAs alterations in human cancers – from mechanisms to therapy George A. Calin, M.D., Ph.D., Department of Experimental Therapeutics, UT MDACC, Houston TX (USA)

**5:10 PM – 5:50 PM** Tumor mutational burden and beyond – Implementation of biomarkers for cancer immunotherapy Simon Heeke, Ph.D., *IRCAN*, *OncoAge*, *University of Cote d'Azur*, *Nice France* 

**5:50 PM – 6:00 PM** Closing Remarks George Calin, M.D., Ph.D.

### SESSION II

7:30 AM – 8:30 AM Breakfast

8:30 AM – 9:10 AM Golgi-resident PI4P synthesis accelerates tumor progression and underlies an actionable secretory vulnerability in chromosome 1q-amplified lung adenocarcinoma Jonathan Kurie, BA, M.D., Department of Thoracic/Head & Neck Medical Oncology, UT MDACC, Houston, TX (USA)

9:10 AM – 9:50 AM Liquid biopsy in lung cancer: The experience of the Leon Berard Cancer Center Pierre Saintigny M.D., Ph.D., Comprehensive Cancer Center Leon Berard, OncoAge, University of Lyon, Lyon, France

9:50 AM – 10:30 AM New Approaches for Identifying and Targeting Molecular Defined Subgroups of NSCLC/SCLC John V. Heymac, M.D., Ph.D., Department of Thoracic/Head & Neck Medical Oncology, UT MDACC, Houston, TX (USA)

10:30 AM – 10:50 AM Break

**10:50 AM – 11:30 AM** Anti-proliferative versus immunometabolic functions of cholesterol efflux pathways in lung cancer Laurent Yvan-Charvet, Ph.D., *C3 Molecular Center, OncoAge, University Cote d'Azur, Nice, France* 

11:30 AM – 12:10 PM Personalized treatment of Small Cell Lung Cancer – Update on emerging biomarkers Lauren Byers, M.D., Department of Thoracic/Head & Neck Medical Oncology, UT MDACC, Houston, TX (USA)

12:10 PM – 12:50 PM Never Travel Alone! The Crosstalk of Circulating Tumor Cells and the Blood Microenvironment Paul Hofman, MD, Ph.D., *IRCAN and Nice Hospital, OncoAge, University of Cote d'Azur, Nice, France* 

12:50 PM – 1:10 PM Closing Remarks Ignacio I. Wistuba M.D., Department of Translational Molecular Pathology, UT MDACC, Houston, TX (USA)

Paul Hofman, IRCAN and Nice Hospital, OncoAge, University of Cote d'Azur, Nice, France

1:00 PM – 2:00 PM Lunch & Dismissal

# SESSION II TUESDAY, 15 OCTOBER, 2019

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# **MODERATORS**



### Sendurai Mani

Sendurai A. Mani is a Professor in the Department of Translational Molecular Pathology at MD Anderson Cancer Center. He is also the co-director of the Metastasis Research Center as well as the Center for Stem Cell and Developmental Biology at MD Anderson Cancer Center. Dr. Mani has received numerous prizes and awards for his research, including a Jimmy V foundation's V-Scholar Award and The American Cancer Society Research Scholar award. Dr. Mani was the first one to demonstrate that the cancer cells acquire stem cell properties by activating the latent embryonic epithelial-mesenchymal transition (EMT) program. This finding provided the foundation and explanation for the presence of plasticity within the tumor as well as the development of resistance to various treatments. Dr. Mani's laboratory investigates the role of EMT and the cancer stem cells in metastasis and chemoresistance.



#### **Paul Hofman**

Paul Hofman is Professor of Pathology at Pasteur Hospital, University Côte d'Azur (UCA), Nice, France. He obtained a MD degree in 1989 from the University of Nice Sophia Antipolis (France) and a Ph.D. degree in 1994 from the University of Montpellier (France). He did a fellowship at the Brigham and Women's Hospital in Boston (Harvard Medical School) from 1992 to 1995, and at the Max Planck Institut (Tubingen, Germany) in 1996. He is the head of a research team at the Inserm 1081/UMR CNRS 7284 (Institute of Research on Cancer and Aging) located at the Comprehensive Cancer Center Antoine Lacassagne (www.ircan. org). The main of interest of Paul is in lung cancer pathophysiology and in the discovery of circulating and tissue biomarkers. He is the head of the Biobank (BB-0033-00025) at UCA (www.biobank-cotedazur.fr), and of the Laboratory of Clinical and Experimental Pathology (LPCE). He is the director of the OncoAge consortium (www.oncoage.org) which aims to fight age-relative pathologies from degenerative to neoplastic diseases. Dr. Hofman has

received prizes and awards for his research, and in 2018, became a member of the Royal Academia of Medicine in Belgium. He is the director of the MSc Biobanks and Complex Data Management at UCA.



#### George Calin

George Adrian Calin received both his M.D. and Ph.D. degrees at Carol Davila University of Medicine in Bucharest, Romania. After working cytogenetics as undergraduate student with Dr. Dragos Stefanescu in Bucharest, he completed a cancer genomics training in Dr. Massimo Negrini's laboratory at University of Ferrara, Italy. In 2000 he became a postdoctoral fellow at Kimmel Cancer Center in Philadelphia, PA, and while working in Dr. Carlo Croce laboratory Dr. Calin was the first to discover the link between microRNAs and human cancers, a finding considered as a milestone in microRNA research history. He is presently a Professor in Experimental Therapeutics and Leukemia Departments at M. D. Anderson Cancer Center in Houston and studies the roles of microRNAs and other non-coding RNAs in cancer initiation and progression and in immune disorders, as well as the mechanisms of cancer predisposition linked to non-codingRNAs. Furthermore, he explores the roles of body fluids miRNAs as potential hormones and biomarkers, as well as new RNA therapeutic options for cancer

patients. Simply, he is having fun making discoveries and publishing and, from time to time, getting funded grants!



#### Ignacio Wistuba

Ignacio I. Wistuba, M.D., is Professor and Chair of the Department of Translational

Molecular Pathology, with a joint appointment in Thoracic/Head and Neck Medical Oncology, and one of the co-directors of the Khalifa Institute for Personalized Cancer Therapy (IPCT) at M.D. Anderson Cancer Center in Houston, TX. He is also Director of the Thoracic Molecular Pathology Laboratory, co-leader of the institutional Tissue bank and Pathology Resources, and director of the ECOG-ACRIN Central Biorepository and Pathology Facility. He is a surgical and molecular pathology specialist with a strong record of scientific achievement in lung cancer with over 500 peer-reviewed papers and several book chapters. His research interests include the elucidation of the molecular abnormalities involved in the pathogenesis and progression of lung cancer, and the identification of novel molecular targets and validation of biomarkers for targeted- and immune-therapies. At MD Anderson Cancer Center, Dr. Wistuba oversees biomarker studies for lung cancer therapeutic and other solid tumors clinical trials, and he is co-leader of the Moon Shot APOLLO platform. He currently serves as the pathologist of the Lung Cancer Committee for the Southwestern Oncology Group (SWOG), the Lung Cancer Mutation Consortium (LCMC), and chair of the Pathology Panel of the International Association for the Study of Lung Cancer (IASLC). Dr. Wistuba is the contact PI of three NIH/NCI U24 grants, including the MD Anderson Center for Immune Monitoring and Analysis of Cancer (CIMAC). He serves as senior editor of Cancer Prevention Research (AACR) and Annals of Oncology (ESMO).

### **Bernard Mari**

Bernard Mari, PhD is research director at the Centre National de la Recherche Scientifique (CNRS, France). He has obtained a Ph.D at the University of Nice (1994) and performed a post-doctoral training at the Dana Farber Cancer Institute in Boston in the field of lung cancer. His team at IPMC in Sophia Antipolis mainly focuses on functional genomics approaches to understand the function of non-coding RNAs during lung tumorigenesis and fibrosis.



### **SPEAKERS**

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# **SPEAKERS**



#### **Don Gibbons**

Dr. Gibbons graduated from Harvard University in 1993 (BA, with honors in Biochemistry), and obtained his MD and PhD degrees from Albert Einstein College of Medicine in 2004. Dr. Gibbons completed his Internal Medicine Residency at Baylor College of Medicine before joining MD Anderson Cancer Center in 2006 as a Clinical Fellow and later as a Research Fellow and Instructor. In 2010, he was appointed Assistant Professor in the Department of Thoracic/ Head and Neck Medical Oncology, with a secondary appointment in the Department of Molecular and Cellular Oncology, and promoted to Associate Professor in 2016. Dr. Gibbons is a physician-scientist, specializing in lung cancer medical oncology and with a lab investigating the unique characteristics of the tumor microenvironment and mechanisms that drive metastasis, including how cancer cells orchestrate immune evasion. He was selected for the Physician Scientist Award (2012-2014), the R. Lee Clark Fellowship (2014-2016), the Young Physician-Scientist Award by the American Society of Clinical Investigation (2014), and the Waun Ki

Hong Excellence in Team Science Award (2017). Dr. Gibbons is the Director of the Thoracic/Head and Neck Medical Oncology Translational Genetic Models Laboratory and a Co-Leader of the Lung Cancer Moon Shot Program at MD Anderson Cancer Center. His translational research focuses on understanding the determinants of sensitivity and resistance to immune checkpoint therapies and has driven the development of new clinical trials, particularly in the use of combinations that incorporate immunotherapy.



#### **Marius** Ilie

Dr. Marius Ilié is Professor in Pathology at the Medical School of Nice, Université Côte d'Azur, and Surgical Pathologist at the Clinical and Experimental Pathology Laboratory, Nice University Hospital. His clinical activity is based at the Nice University Hospital with special interest in thoracic pathology, melanoma and thyroid cancer. He has responsibility for the day-to-day running of the Côte d'Azur Biobank and the Liquid Biopsy Unit, as well as management of several projects with industry partners. His research interests include the elucidation of the molecular and cellular abnormalities in the pathogenesis and progression of lung cancer and melanoma, and identification and validation of novel tissue or blood-based biomarkers for early detection of lung cancer and targeted therapies. Dr. Ilié is the lead author or co-author of over 120 published articles, book chapters, reviews and abstracts involving biomedical translational research and biorepository science and he has received several awards. He is also dedicated to teaching at the Medical School in Nice and as Deputy Director of the MSc Biobanks and Complex Data Management at the Côte d'Azur University.



#### Simon Heeke

Simon Heeke has obtained his Bachelor and Master degree from the Medical University of Innsbruck in Austria. He was then selected for the LABEX SIGNALIFE program at the University of Nice and started his PhD in the laboratory of Prof. Paul Hofman in 2016. His work focuses on the development of novel predictive biomarkers for lung cancer patients undergoing anti-cancer immunotherapy and targeted therapies from tissue and liquid biopsies. Additionally, he is involved in the LungMark project which is using a big data approach and machine learning to predict lung cancer cancer in advance.



#### John Heymach

Bernard Mari, PhD is research director at the Centre National de la Recherche Scientifique (CNRS, John V. Heymach, MD, PhD is Chair of the Department of Thoracic/Head and Neck Medical Oncology at MD Anderson Cancer Center. He holds the David Bruton, Jr. Chair in Cancer Research. He is a co-leader of the Lung Cancer Moon Shot<sup>™</sup> at MD Anderson and the institution's primary investigator on the Stand Up to Lung Cancer Dream Team. He attended Harvard College, where he graduated magna cum laude with a Chemistry B.A. degree and received his MD and PhD from Stanford. His laboratory focuses on developing new therapies and biomarkers for lung cancer and understanding the mechanism of drug resistance. Dr. Heymach has led several clinical trials of targeted agents for lung cancer and is a member of the American Society for Clinical Investigation. He earned multiple honors at MD Anderson, including the Finneran Family Prize which recognizes extraordinary achievements and continued efforts to provide hope to cancer patients worldwide.

#### Jonathan Kurie

Dr. Kurie is a Physician-Scientist with 25 years of experience as an independent investigator studying lung cancer biology and translating those findings into novel clinical strategies. He has been a SPORE Project Leader for the past 20 years. His specific area of interest is in understanding the progression of KRAS-mutant lung adenocarcinoma. He has used genetically-engineered mouse models to elucidate the role of epithelial-to-mesenchymal transition in the regulation of tumor cell invasive properties and in the development of an extracellular milieu that favors malignant progression. His work has revealed that the collagen modifying enzyme lysyl hydroxylase 2 (LH2) plays a critical role in regulating a switch in the type of collagen cross-link in tumor stroma and thereby drives metastasis. He has worked collaboratively with Dr Don Gibbons to show that LH2 modulates intra-tumoral CD8 T cell immunity, which is the focus of the SPORE renewal.

The current research of the Kurie Laboratory is centered on the investigation of mechanisms of lung cancer metastasis for the purpose of identifying novel therapeutic targets. Of foremost interest is to understand how the cellular and extracellular matrix constituents of the tumor microenvironment are controlled by tumor cells, and how signals from the microenvironment influence tumor cell behavior. In this effort, the Kurie lab uses cellular models, genetic mouse models of lung cancer that recapitulate key somatic genetic mutations and epigenetic events in tumor cells, and a tissue bank of molecularly and clinically annotated human lung cancers and matched normal lung. Dr. Kurie has been mentoring postdoctoral fellows, graduate students, and technicians, and has received the Mentor of the Year Award at MD Anderson in 2012. He has been actively involved in the career development of several researchers, some of whom have gone on to establish them self as independent investigators and physician scientists.

### **SPEAKERS**

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### Lauren Byers

Lauren Averett Byers, M.D., M.S., is an Associate Professor in the department of Thoracic/ Head and Neck Medical Oncology at MD Anderson and serves on the faculty of The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences. As a physician-scientist, Dr. Byers' research focuses on studying the proteomics and molecular profiles of lung cancer to identify new drug targets and biomarkers to personalize therapy for her patients. This work has led directly to the identification of new drug targets such as DNA damage response (DDR) genes (e.g., PARP1 and Chk1) for small cell lung cancer and the receptor tyrosine kinase AXL for non-small cell lung cancers. Many of these research findings have been translated into the clinic, with Dr. Byers leading several clinical trials of novel targeted therapies for lung cancer patients. Dr. Byers is a member of the NCI Small Cell Lung Cancer Consortium and serves on the NCI Thoracic Malignancy Steering Committee.



#### **Pierre Santigny**

Pierre Saintigny, M.D. PhD, is a medical oncologist and physician-scientist at Centre Léon Bérard in Lyon, heavily involved in the development of translational research programs. He is affiliated to the Department of Medical Oncology, coordinator of the Tumor Characterization Unit in the Department of Translational Research and Innovation, and team leader at Cancer Research Center of Lyon. Both his training as a postdoctoral fellow and clinical fellow and his previous position as an Assistant Professor in the Department of Thoracic/Head and Neck Medical Oncology at the University of Texas M.D. Anderson Cancer Center, Houston, TX, led him to focus most of his research in the lung and head and neck field. He is actively involved in the molecular triage programs at Centre Léon Bérard and is co-medical director of the AURAGEN sequencing platform in the context of the French Genomic Medicine Plan 2025.



#### Laurent Yvan-Charvet

Dr. Laurent Yvan-Charvet obtained his Ph.D. in Endocrinology in 2005 from the University of Paris XI, France. His research work at Columbia University has been mainly focused on how regulation of inflammation and stem cell biology by cholesterol efflux pathways affect chronic inflammatory diseases. He was the recipient of the Roger Davis Award in 2010, finalist of the I.H. Page Young Investigator Award in 2011, recipient of the EAS young Investigator Award in 2013 and the Daniel Steinberg Early Career Investigator Award in 2015. After a contribution to the development of new therapeutics for cardio-inflammatory diseases at Pfizer, his current research interest as a Director of Research and group leader lies in stem cell metabolism - a new area of research for cardiovascular and inflammatory diseases. This work is supported by two most prominent French and European fundings: an Atip-Avenir excellence program and an European ERC consolidator excellence program.

### GLOBAL ACADEMIC PROGRAMS (GAP)

Global Academic Programs, which is a part of MD Anderson Cancer Network\*, supports MD Anderson's sister institutions - a global network of cancer centers working collaboratively to end cancer. Sister institutions are cancer fighting institutions and government health authorities across the globe with whom we have education and research based relationships to advance population health initiatives, public policy initiatives, and translational and clinical research initiatives. Through MD Anderson Cancer Network\*, the program also hosts an annual conference and the Sister Institution Network Fund. Learn more at www. mdanderson.org./gap

### DEPARTMENT OF TRANSLATIONAL MOLECULAR PATHOLOGY

The Translational Molecular Pathology department, under the direction of Ignacio I. Wistuba, M.D., Professor and Chair, is initiating a thematic change that will expand translational research. As MD Anderson moves toward molecular characterization of the cancers of all our patients, allowing their optimal assignments to promising new targeted therapies and potential identification of biomarkers of response and resistance, the department's mission includes thematic translational research and preclinical molecular pathology research.

The mission of Translational Molecular Pathology is focused on three goals: • The discovery of novel molecular targets for chemoprevention and treatment • Development and validation of biomarkers for diagnosis and prediction of response/resistance to treatment • The transition of assays developed in the department into the CLIA environment

These goals will be achieved through collaboration with faculty from MDL and other laboratories, and participation in both the new clinical test evaluation process overseen by the virtual Molecular Targets and Markers Testing Facility, and in the division's clinical laboratory test governance. CLIA-accredited testing will remain in division's clinical laboratories.

### **USEFUL INFORMATION**

#### Venue

UT MD Anderson Cancer Center, T. Boone Pickens Academic Tower, 3rd Floor, Rooms 1 & 8

#### Meals & Breaks

Lunch and coffee breaks will be provided on Monday and Tuesday. Breakfast will be provided on Monday.

#### **Ground Transportation**

MDA Shuttle service is available between MDA buildings until 6:30 pm M-F from the first floor of Pickens Tower. Travelling guests may utilize the Hilton Hotel shuttle service for transport to/from the hotel.

#### **Contact Information**

Department of Translational Molecular Pathology (713) 792-8995

### **OUR SPONSORS**

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