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Michele Carbone, M.D., Ph.D.

William and Ellen Melohn Chair in Cancer Biology & Human Cancer Genetics
 Special Advisor on Health and Science to the Governor of Hawaii Dr. Green
 Professor (tenured) and Director Thoracic Oncology Program
 University of Hawaii Cancer Center,
 Professor of Pathology, John A. Burns School of Medicine
 University of Hawaii, Honolulu, HI



I. Personal Data

Date of Birth: 24 April 1960, Roma, Italy

Citizenship: U.S.A. (became US Citizen Dec 9, 1999)

Languages: Italian (Mother tongue); Spanish (Mother tongue); English (Fluently).

Work:

University of Hawaii Cancer Center, 701 Ilalo Street, Suite 437, Honolulu, HI 96813

Ph: 808-440-4596/ Fax: 808-587-0790 (Laboratory)

E-mail: mcarbone@cc.hawaii.edu Website: <http://www.oakparkpathology.com/>

Biographical sketch:

h-index: 86 (<https://scholar.google.pl/citations?user=3CM8k84AAAAJ&hl=en>)

Administrative: From December 2008 through December 2014, I was Director of the NCI designated Cancer Center at the University of Hawaii (UH). The University of Hawaii Cancer Center (UHCC) is an independent unit within UH with its own lines of tenure, and an independent budget. As Director, I was responsible for faculty recruitment, the overall budget and space allocation at UHCC. I led the construction of a new cancer center building, and formation of the new Hawaii Cancer Consortium (HCC) with the main hospitals in Hawaii, which was finalized under a new 501c3 to increase access to resources for translational cancer research. Previously, I was Chair of Pathology at the University of Hawaii, and before coming to Hawaii the Director of Thoracic Oncology Program at Loyola University Chicago. Since Jan 2015 I relinquished all administrative duties, except for directing Thoracic Oncology, and I focus on my research.

Leadership Positions:

2023-present: Special Advisor on Health and Science to Josh Green, M.D., Governor of Hawaii.

2018-present. William and Ellen Melohn Chair in Cancer Biology and Human Cancer Genetics, University of Hawaii Cancer Center

2006-present. Professor (tenured) and Director Thoracic Oncology Program University of Hawaii Cancer Center

2016- 2019 International Association to Study Lung Cancer (IASLC): I created and I Chaired the Mesothelioma task force from 2016-2018. Chair Mesothelioma Committee 2019. The task force became an official IASLC committee in 2019 and I was the first Chair.

2018-2021: Senior Advisor on Health Sciences to Vice Chancellor for Research U Hawaii

12/2008 -12/2014. Director, University of Hawaii Cancer Center. As Director of UHCC, I applied the teamwork and collaborative strategy that made me successful in research to turn around a failing cancer center. Key achievements:

- Obtained National Cancer Institute (NCI) P30 renewal in 2012 for the Cancer Center, which had failed to meet minimum NCI requirements before I was asked to take a leadership role
- Received following ratings from the NCI's P30 site review board:
 - Overall Cancer Center - "Excellent"
 - My job as Director - "Outstanding"

- Ratings from the NCI improved across virtually all categories from 2005 and 2012
- Oversaw the process to build a new, state-of-the-art Cancer Center, completing the building 4 months ahead of schedule and \$17M under budget
- Increased fund raising from \$ 0.3 M year/average during the period 2004-2008 (before I was Director), to \$5M year/average during the period 2009-2014
- Secured a Hawaii State Cigarette Tax for the Cancer Center, bringing approximately \$15M - \$19M in funding per year to the Cancer Center since 2009 to present.
- Established the Hawaii Cancer Center Consortium (HCC) and a supporting 501c3 with the major hospitals in Honolulu – The Queens Medical Center, Hawaii Pacific Health and Kuakini
 - This provided a clinical arm for the Cancer Center
 - \$2.2M cash/year since 2009 being allocated to the Cancer Center from the HCC
- Tripled the number of funded investigators through recruitment, mentoring, and investing in the most promising post-Doctoral fellows
- Created a new culture based on excellence in research

2010 through 2014. CEO of the Hawaii Cancer Center Consortium and President of the supporting 501c3 Advisory Board. This cross-functional advisory board for the Cancer Center Consortium included the President of UH, the Chancellor and Vice Chancellor for Research of UH at Manoa, the Dean of the Medical School, and the CEOs of the three participating hospitals.

January, 2008 – April, 2010. Chair of Pathology, University of Hawaii John A. Burns Medical School.

May, 2006 – June, 2008. Director of the Thoracic Oncology Program at Loyola University Chicago.

Research: I apply my combined basic science and pathology training to my research. The experience and reagents I have accumulated over the years, and a terrific team of collaborators, allow me to move my fieldwork directly to the laboratory, and to design and implement measures to help those affected by, or at risk of, cancer. My research is a combination of the fieldwork that I conducted over the course of ~12 years in 3 villages in Cappadocia, Turkey, and later in remote areas of the US, with molecular genetic work in my laboratory at UHCC, and with clinical diagnostic work.

In order to accomplish all of this, I assemble multi-ethnic and multidisciplinary teams. Therefore, while I direct this research, and I was and I am the one conducting the field-work in Cappadocia, WI, LO, ND, and recently in NV, the success of my research is largely the result of team-work. Dr. Haining Yang, a tenured Professor at UHCC and Dr. HI Pass Director Thoracic Surgery at NYU are integral parts of my research team and we have been working together for 18 years (Yang) and 28 years (Pass). Dr. Yang studies asbestos carcinogenesis and she helps me oversee the lab when I do field-work. Our team includes experts in different disciplines with whom we join forces depending on the challenge we face: biostatisticians, chemists, epidemiologists, geneticists, geologists, mineralogists, physicians, Ca²⁺ channels and SPR experts, physicists to model protein structures and cryo-EM experts, etc. Team members participate via Zoom from the US mainland and internationally to our lab meetings providing an array of expertise, critiques and new ideas, and generating a very exciting multidisciplinary environment for our students and post-docs. Our team-work has the additional advantage that by the time we submit a paper the critical data have been reproduced in the laboratories of at least one and often several collaborators to reduce the risk of mistakes.

The same “team-approach philosophy” has helped me use our science as an ambassador of peace among different cultures, and work effectively with local and state authorities to influence public health policies to the direct benefit of citizens. In Cappadocia, for example, I had to deal with cultural, religious and language challenges. How I gained the trust of the villagers in a very religious Islamic community and the trust of my Turkish colleagues, and with their help convinced the Turkish Ministry of Health to build two completely new erionite-free villages where all the villagers have been relocated, was nicely captured in a paper by the former Chair of Pulmonology at the University of Hacettepe in Ankara, Dr. Salih Emri (Emri SA, *Ann Transl Med* 2017). In 2008, because of this work in Cappadocia, we received the *Landon-AACR Innovator Award for International Collaboration in Cancer Research* (M. Carbone PI). Our work has also been recognized by the International Mesothelioma Interest Group (iMig), which comprises scientists and physicians from all countries that study asbestos and mesothelioma. Every 2 years the iMig awards 2 prizes: the “Wagner Award” and the “Research Award”. In 2018, I received the 14th “iMig Wagner Award” and Dr. Yang received the “iMig Research Award”.

Brief summary of my most relevant research. Going against the dogma at that time, I hypothesized and then proved that genetics synergizes with carcinogenic fibers of asbestos and erionite to cause mesothelioma (Roushdy-Hammady I et al., *The Lancet* 2001; Carbone M., et al., *Nat Rev Cancer* 2007 and Carbone M., et al., *Nat Rev Cancer* 2020). With support of a NCI P01 (M. Carbone PI) I discovered that heterozygous germline *BAP1* mutations cause a novel cancer syndrome with high penetrance, and that GxE interaction modulates the incidence of mesothelioma, uveal and cutaneous melanoma, and of other cancers in carriers of germline *BAP1* mutations (Testa JR et al., *Nature Gen.* 2011). I named this inherited condition “The BAP1 Cancer Syndrome” (Carbone et al., *JTM* 2012; Carbone M., et al *Nat Rev Cancer* 2013). Close to 100% of those affected by this cancer syndrome developed one or more malignancies during their lifetime, and ~30% of them developed mesothelioma, findings confirmed by many studies (Carbone M., et al., *Cancer Discovery* 2020). We demonstrated that BAP1 modulates GxE in cancer and elucidated key underlying mechanisms (Bononi A., et al., *Nature* 2017; Bononi A et al., *Cell Death Diff.*, 2017). We studied multiple families affected by the BAP1 cancer syndrome, and we built a family tree of ~80,000 individuals tracking *BAP1* mutations back to the 18th century (Carbone et al., *PLOS Genetics* 2015). Studying these families we discovered that mesotheliomas developing in carriers of germline mutations are much less aggressive with median survival of 5-7 years, versus 12-18 months for sporadic non-genetically related mesotheliomas (Bauman F et al., *Carcinogenesis* 2015; Pastorino S., et al., *JCO* 2018), findings confirmed recently by studies at the University of Chicago and at the NCI. We also found additional germline mutations that increase susceptibility to mesothelioma (Bononi A., et al, *PNAS* 2020). It is now estimated that ~12% of mesotheliomas occur in carriers of heterozygous germline *BAP1* mutations (the most frequent mutation) or of germline mutations of other tumor suppressor genes (Carbone et al., *Cancer Discovery* 2020). We implemented preventive and early detection strategies among affected family members: these measures saved lives by curative resection of early-stage melanomas and other cancers (Carbone M., et al., *CA Cancer J Clin* 2019). During this research, I worked with state governments, in the US and Turkey to implement novel preventive approaches that are expected to save many lives from cancer. Because of our research the NCI established two clinical trials in Bethesda led by our collaborators Dr. Raffit Hassan (non-surgical) and Dr. David Schrupp (surgical) for carriers of germline *BAP1* mutations (ClinicalTrials.gov Identifier: NCT03830229 and NCT04431024). These trials aim to identify novel cancer prevention, early detection and therapies for carriers of germline *BAP1* mutations. These trials improved our ability to help and study those affected by the BAP1 cancer syndrome.

Related studies: We discovered that *BAP1* is also the most frequently (>60%) somatically inactivated gene in mesothelioma. We elucidated why initial studies, including our own (Testa JR *Nature Genetics* 2011), underestimated the frequency of somatic *BAP1* mutations: because ~50% of these mutations encompass DNA segments of about 300-3000 kb, which are identified by high density array-CGH and MLPA, but are easily missed by NGS, a technique developed to detect mostly nucleotide level mutations (Yoshikawa Y., et al., *PNAS* 2016). Studying BAP1 by immunohistochemistry (IHC), I elucidated how BAP1 IHC helped to diagnose mesothelioma; my findings were confirmed by many laboratories (Nasu M., et al., *JTO* 2015). BAP1 IHC is now used routinely in diagnostic pathology in the US and abroad in the differential diagnosis of mesothelioma versus benign mesothelial proliferations and versus other cancer types (Carbone M., et al *CA Cancer J Clin* 2019)

Studying the “E” component of the “GxE”, Dr. Yang and I elucidated critical mechanisms of asbestos carcinogenesis, which we linked to the release of HMGB1 (a DAMP) by mesothelial cells and macrophages following asbestos exposure (Yang H., et al., *PNAS* 2010). Extracellular HMGB1 induces a chronic inflammatory process that promotes the release of TNF- α and the transformation of mesothelial cells. At the same time, this process protects mesothelial cells from asbestos-induced cell death (Xue J., et al., *PNAS* 2020). Mesothelioma cells that grow out of an environment rich in HMGB1 secrete HMGB1 to promote their own growth: HMGB1 serum levels are high in mesothelioma patients, and, targeting HMGB1 in vitro and in mice reduced mesothelioma growth (Jube S., et al., *Cancer Res* 2012). Recently we discovered that BAP1 forms a trimer with HMGB1 and HDAC1, in which BAP1 deubiquitylates and stabilizes HDAC1 allowing HDAC1 to deacetylate HMGB1 which is therefore retained in the nucleus. Reduced BAP1 levels destabilize HDAC1 leading to increased acetylation of HMGB1: this isoform is released from the nucleus into the cytoplasm, where it induces autophagy, and it is also secreted extracellularly where HMGB1 promotes inflammation, mesothelial cell transformation and mesothelioma growth. These results bring together our research on BAP1 and HMGB1, both of which we had

previously linked independently to mesothelioma (Novelli F. et al., *PNAS* 2022)

Having seen the danger of the carcinogenic fiber erionite in Cappadocia, I investigated possible erionite exposure in the US. Conducting fieldwork with my collaborators including mineralogists, we identified exposure in Dunn County, ND. I established a collaboration with the ND EPA led by Drs. A. Miller and S. Way. We discovered that the gravel used to pave over 300 miles of dirt roads (most roads in Dunn County are dirt roads) was heavily contaminated with erionite. However, there were no standards for erionite air contamination, so we suspected, but could not prove, that the air-levels of erionite in ND were a health hazard. I convinced the EPA to dispatch a team led by Dr. Miller to Cappadocia and I convinced the Turkish Ministry of Health to agree to it. We flew to Cappadocia in April of 2008 and collected air samples in the “mesothelioma villages” and nearby “control” villages: the air concentrations of erionite we had measured in school buses in ND were similar to those in the villages. Experiments in my lab revealed that the erionite from ND was as carcinogenic as the one from Cappadocia. Dr. Way and I met with the ND LT Governor and health officers and convinced them to repave the roads with erionite-free gravel. Fortunately, this clean-up took place just before the boom of “fracking” in ND, when an estimated 50,000 trucks a day transited over those roads (Carbone M., et al., *PNAS* 2011). This research led to a new project in Nevada (NV) where I am studying GxE interaction.

Because of our discoveries: 1) *BAP1* germline testing is now conducted routinely on mesothelioma patients; 2) *BAP1* is included in diagnostic germline cancer panels; 3) BAP1 IHC is now routine in pathology to improve the accuracy of mesothelioma diagnosis; 4) *BAP1* germline testing is directly correlated to prognosis and thus influences therapy; 5) The NCI established 2 clinical trials for *BAP1* mutations carriers-see below; 6) Preventive measures to decrease the burden of mesothelioma have been implemented in Turkey and in ND.

Clinical: I am board certified in anatomic pathology (both in Italy and the US) and specialize in pleural pathology. I receive hundreds of consult requests per year from all over the world on challenging cases. My diagnostic skills help me see the most unusual cases and develop new research hypotheses. I discovered and elucidated how BAP1 immunohistochemistry (IHC) helped to diagnose mesothelioma. BAP1 IHC is now used routinely in diagnostic pathology in the US and abroad in the differential diagnosis of mesothelioma versus benign mesothelial proliferations and other cancers.

II. Education

University of Chicago	Anatomic Pathology	1999 Board Certified
Medical School of Rome “La Sapienza” National Institutes of Health, Bethesda, MD. Combined Program	Ph.D. in Human Pathology	1993
Medical School of Rome “La Sapienza”	Anatomic Pathology	1988 Board Certified (Italy)
Medical School of Rome “La Sapienza”	M.D. (cum laude)	1984

III. Academic Appointments

William and Ellen Melohn Chair in Cancer Biology, University of Hawaii Cancer Center		2018-present
Professor (tenured) and Director Thoracic Oncology Program University of Hawaii Cancer Center,		June 2006 – present
Professor of Pathology, John A. Burns School of Medicine University of Hawaii, Honolulu, HI		June 2006- present
Member, Graduate Faculty	Molecular Biosciences & Bioengineering University of Hawaii, Honolulu, HI	Sept 2006 - present
Professor of Anatomical Pathology, University of Calabria, School of Medicine, Italy		2017-present
Special Advisor on Health Sciences Office of the Governor, Josh Green, M.D., State of Hawaii		Jan 2023 - present
Senior Advisor on Health Sciences to Vice Chancellor for Research M. Bruno University of Hawaii		2018-2021
Director	University of Hawaii Cancer Center Honolulu, HI	Sept 2009 – Dec 2014
Interim Director	University of Hawaii Cancer Center Honolulu, HI	Dec 2008 – Aug. 2009
Chair	Department of Pathology John A. Burns School of Medicine University of Hawaii, Honolulu, HI	Jan 2008 – April 2010
Professor	Cancer Center, Department of Pathology, Loyola University, Chicago, IL	2005-2006
Director	Thoracic Oncology Program, Loyola University, Chicago, IL	2005-2006

Associate Professor Tenure	Cancer Center, Department of Pathology, Loyola University, Chicago, IL	July, 2002-2005
Associate Professor	Cancer Center, Department of Pathology, Loyola University, Chicago, IL	July, 2000-2002
Member, Graduate Faculty	Cancer Center, Department of Molecular Biology, Loyola University, Chicago, IL	1997-2006
Assistant Professor	Cancer Center, Department of Pathology, Loyola University, Chicago, IL	1997-June, 2000
Instructor/Resident	Department of Pathology, University of Chicago, IL	1994-1996
Visiting Professor	Anatomic Pathology University "La Sapienza" Rome, Italy	1994 (October)
Adjunct Assistant Professor	Department of Pathology Uniformed Services University of the Health Sciences, Bethesda, MD	1989-1994
Visiting Associate Head Unit of Oncogenes	Section on Viruses and Cellular Biology, NICHD-NIH, Bethesda, MD	1990-1994
Visiting Scientist	Department of Biochemistry, FREIE, University, Berlin Germany	1991 (Oct - Dec)
Adjunct Scientist	Section of Viruses and Cellular Biology, NICHD-NIH, Bethesda, MD	1989-1990
Visiting Fellow	Laboratory of Immunopathology, NIAID- NIH Bethesda, MD	1986-1989
Resident	Anatomic Pathology, University "La Sapienza" Roma	1984-1986

IV. Certifications/Licenses

Hawaii	Licensed Physician and Surgeon	2006-Present
Illinois	Board Certified (Anatomic Pathology) (USA)	1999
Illinois	Licensed Physician and Surgeon	1996-Present
Educational Commission for Foreign Medical Graduates	ECFMG Diploma	1993

Medical School of Rome “La Sapienza”	Board Certified (Anatomic Pathology) (Italy) Valid Throughout EEC	1988
Italy (Valid Throughout EEC)	Licensed Physician and Surgeon	1985-Present

V. Societies

Medical Officer Italian Embassy in the USA, 1989-1994
 Medical Officer Consulate of Italy in San Francisco for the State of Hawaii, 2008-present
 Member, American Association for Cancer Research
 Member, American Society for Investigative Pathology
 Member, European Academy of Tumor Immunology (EATI), 2016-
 Member, Academia Cosentina, Italy
 Member, Academia Europae, Cell and Developmental Biology 2019-
 Member, European Academy of Sciences 2024-

VI. Journal Editorial Activities and Review Committee Memberships

Associate Editor: Journal of Thoracic Oncology 2020-present

Consulting Reviewer: Nature, Nature Genetics, Nature Cancer, Nature Rev Cancer, Nature Rev Immunology, Nature Communications, Science, Cell, Cancer Cell, The Lancet, Lancet Oncology, Journal of Clinical Oncology, Jama Oncology, Cancer Research, Journal of the National Cancer Institute, Oncogene, Proceedings of the National Academy of Sciences, Cell Death and Differentiation, etc.

Study Sections:

Study Section Member, NCI SPORE in Lung and Genitourinary Cancers, 2005
 Study Section Member, NCI, Lung Cancer and Inflammation (RFA CA07-046), Aug. 2007
 Study Section Member, NCI, SPORE Special Emphasis Panel, 2010
 Site Visit Reviewer, NIH/NCI, University of Pittsburgh Cancer Institute (Cancer Center Support Grant, P30), February 2010
 Site Visit Reviewer, NIH/NCI, University of Colorado Comprehensive Cancer Center, University of Colorado (Cancer Center Support Grant, P30), June 2011
 Site Visit P30 Reviewer, NIH/NCI, University of Chicago Medicine Cancer Center, October 2017
 Site Visit P30 Reviewer, NIH/NCI, Memorial Sloan Kettering Cancer Center, May 2018

International Agreements: Member, US-Italy Science and Technology Commission, 1994-1995 that renewed the treaty of scientific collaboration between Italy and the U.S.

VII. Awards

The iMiG Wagner Medal, to “an individual who has made major original contributions to the understanding of mesothelioma, either in basic or applied research. The Wagner medal is the highest honor presented by the iMiG to a leader in the field” for “discovering the role of genetics in the pathogenesis of mesothelioma” 2018

2018 PAIR – PRIZE IN AMERICAN-ITALIAN RELATIONS, category: “Technical and Technological Science” for “overcoming the boundaries of science and the development of technology, in order to improve the quality of human life and protection of the environment” 2018

Mesothelioma Applied Research Foundation-Pioneer Award for “discovering the BAP1 cancer syndrome” 2014

Landon Foundation-AACR INNOVATOR Award for International Collaboration in Cancer Research for “discovering the causes of the Mesothelioma epidemics in Cappadocia, Turkey, and for implementing preventive approaches”

2008

VIII. Honors (selected)

The Bruce Beutler Institute Distinguished Lecture Series, Xiamen University, China	2022
Elected in the Academia Europaea, (Academy of Europe) Life Sciences	2019
Distinguished Min Chiu Li, M.D., Lecture, UC San Diego, Moores Cancer Center	2019
Rector University of Roma La Sapienza Honorary lecture, Rome, Italy	2019
William and Ellen Melohn Chair in Cancer Biology, University of Hawaii	2018
Surgical and GI Grand Rounds, University of Zurich, Zurich, Switzerland.	2015
Grand Rounds, M.D. Anderson Cancer Center, Division Cancer Medicine Houston	2014
XX th Annual Harold L. Stewart Lecture in Experimental Oncology, USUHS Bethesda	2010
Honorary Consul of Italy for the State of Hawaii	2010-present
Sixth Annual Deal Lectureship Cancer Center, Wake Forest University	2009
Grand Rounds M.D. Anderson, Blaffer Visiting Professorship Lecture, Houston	2008
Knight of the Republic of Italy (Cavaliere della Repubblica)	2001

IX. Grants and Contracts:

Complete list NIH funding: <http://grantome.com/grant/NIH/R01-CA198138-01#panel-funding>
Summary:

Active

1R01CA290173-01 NIH/NCI “Novel Strategies to Improve Mesothelioma Therapy”	05/01/24-04/30/29 \$2,640,965 (Total cost)	Yang (Contact PI), Carbone, Ripley; MPIs
1R01CA237235 NCI "Mechanisms of BAP1 activity in human cancer development"	12/13/19-11/30/24 \$2,187,764 (Total cost)	Carbone (Contact P.I.) and Yang, MPIs.
UH Foundation "Pathogenesis of Malignant Mesothelioma", through <u>unrestricted donations</u> from: Honeywell Int. Inc; Riviera United-4-a Cure; and Maurice and Joanna Sullivan Family Foundation, Weinman Foundation	7/1/10-Open ~\$1.0M available	Carbone, P.I.

Pending:

U01 NCI “Targeting the BAP1 Paradox for Cancer Therapy”	12/01/24-11/30/28 \$2,601,636 (Total direct cost)	Carbone (Contact PI), Yang, Schrupp; MPIs
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Past National Funding:

1R01ES030948 NIEHS "Influence of germline mutations on	08/15/19-06/30/24 (NCE) \$2,032,169 (Total cost)	Carbone (Contact P.I.), Yang (U Hawaii), Grzymalski, (DRI, Nevada) co-P.I.s
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susceptibility to environmental carcinogens"		
5R01CA198138 NCI "Germline BAP1 Mutations and Malignant Mesothelioma: Mechanisms and Early Detection"	07/01/15-06/30/22 (NCE) \$1,922,500 (Total cost)	Carbone, P.I.
W81XWH-16-1-0344/ CA150220 DoD (PRCRP-IDEA Award) "Identification and Validation of Novel Germline DNA Variants Associated to Increased Risk of Malignant Mesothelioma"	08/01/16-07/31/19 \$616,000 (Total cost)	Carbone/Yang, co-P.I.s
W81XWH-16-1-0441/ CA150671P1 DoD (Peer Reviewed Cancer Research Program-Translational Team Science Award) "HMGB1 and Its Isoforms as Biomarkers For Mineral Fiber Exposure and MM Detection" Team members: H. Yang , Initiating PI, M.Carbone. HI Pass, T. Mak, J. Fert-Bober; partnering PIs)	09/01/16-08/31/21 (NCE) \$1.2M (Total direct cost)	Carbone, partnering P.I. \$462,000 Total cost, \$300K direct cost
5P30 CA071789-13 NIH/NCI "University of Hawaii Cancer Center CCSG"	01/01/08-12/31/14 \$462,000 \$2,978,952 (annual direct costs)	Carbone, P.I.
NCI-PO1CA114047-01A1 "Pathogenesis of Mesothelioma"	09/15/06-08/31/13 \$8,306,435 (Total Cost)	40% - Carbone, P.I. Project 1. Gene Environment Interaction in Mesothelioma; Carbone, P.I. 20% Project 2. ERK Pathways in Pathogenesis of Mesothelioma; Mossman, P.I. (U Vermont) Project 3. AKT & Tumor Suppressor Pathways in Mesothelioma; Testa, P.I. (Fox Chase) Administrative Core. Carbone, Director, 5% Clinical Core. Pass, Director (NYU) Pathology and Virology Core. Carbone, Director, 15%
AACR-Landon Award for International Collaboration in Cancer Research 2008	01/12/08-12/31/11 \$ 100,000 (Total cost)	Carbone, P.I.

NCI-RO1CA106567 “Role of cell mediators in asbestos -SV40 carcinogenesis”	03/08/05-01/31/11 \$1,724,529 (Total Cost)	10% - Carbone, P.I.
NCI- RO1CA 092657-01 “SV40-like sequences in human tumors: analysis and biological implications”.	04/01/02-03/31/09 \$1,831,920 (Total Cost)	30% - Carbone, P.I.
NIH-EDRN U0-1 (subcontract from NYU “Australian-American Mesothelioma Research Consortium”	2005-2008 \$14,800 (Total Cost)	Pass, P.I Carbone, Co-Invest.
RSG CCE-106924 American Cancer Society-National “Contribution of genetic predisposition to fiber related mesotheliomas”	01/01/04-12/31/07 \$677,000 (Total Cost)	20% - Carbone, P.I.
Cancer Research Foundation of America “Genetics and human mesothelioma”	01/15/03-01/14/05 \$79,541 (Total Cost)	5% - Carbone, P.I.
R29 CA77220-01 NCI “SV40-like sequences in human tumors: analysis and biologic implications”	8/1/97-8/31/02 \$539,677 (Total Cost)	50% - Carbone, P.I.
RPG-99-238-01-CNE American Cancer Society-National “SV40 as a co-carcinogenesis in asbestos-induced mesothelioma”	7/1/99-6/30/03 \$375,000 (Total Cost)	20% - Carbone, P.I.
R21 NCI “In vitro selection of chemical inhibitors of papovaviruses oncoproteins”	04/01/01-03/31/03 \$304,000 (Total Cost)	5% - Bocchetta, P.I. Carbone, Co-P.I.
Riviera United-4-a Cure “Role of SV40, JC and BK viruses in predisposing to asbestos carcinogenesis”	04/15/03-Open \$120,000 (Total Cost)	Carbone, P.I.
Butitta Mesothelioma Foundation “Poliovaccines and mesothelioma”	08/01/04-06/01/06 \$15,000 (Total Cost)	N/A Carbone, P.I.

X. Patents

Yang, H., **Carbone, M.**, Pass, H. I. 2011. Biomarker of asbestos exposure and mesothelioma. U.S. Patent 9,244,074, issued Jan 26, **2016**.

Yang, H., **Carbone, M.**, Bianchi, M.E. 2011. Treatment and Prevention of Cancer with HMBG1 Antagonists. U.S. Patent 9,561.274, issued Feb 7, **2017**.

Testa, J.R., **Carbone, M.**, Cheung, M., Pei, J. 2011. Methods for Diagnosing a Predisposition to Develop Cancer. U.S. Patent 10,344,333, issued Jul 9, **2019**.

XI. Original Research Articles

1. Haddada H, Sogn JA, Coligan JE, **Carbone M**, Dixon K, Levine AS, and Lewis Jr AM. Viral Gene Inhibition of Class I Major Histocompatibility Antigen Expression: Not a General Mechanism Governing the Tumorigenicity of Adenovirus Type 2, Adenovirus Type 12, and Simian Virus 40 Transformed Syrian Hamster Cells. *J Virology*, 62:2755-2761, **1988**.
2. **Carbone M**, Lewis Jr. AM, Matthews BJ, Levine AS, and Dixon K. Characterization of Hamster Tumors Induced by SV40 Small-t Deletion Mutants as True Histiocytic Lymphomas. *Cancer Res*, 49:1565-1571, **1989**.
3. **Carbone M**, Kajiwara E, Patch CT, Lewis Jr. AM, Levine AS, and Dixon K. Biochemical Properties of Media Conditioned by Simian Virus 40-Induced Hamster Tumor Cells: Correlation with Distinct Cell Phenotypes But Not with Oncogenicity. *Cancer Res*, 49:6809-6812, **1989**.
4. **Carbone M**, Hauser J, Rundell K, Dixon K, Carthy M, and Levine AS. Simian Virus 40 Small-t Antigen Inhibits DNA Replication In Vitro. *J Virology*, 66:1804-1808, **1992**.
5. Cicala C, Pompetti F, Nguyen P, Dixon K, Levine AS, and **Carbone M**. SV40 Small-t Deletion Mutants Preferentially Transform Mononuclear Phagocytes and B Lymphocytes In Vivo. *Virology*, 190:475-479, **1992**.
6. Cicala C, Pompetti F, and **Carbone M**. Simian Virus 40 Induces Mesotheliomas in Hamsters. *Am J Pathol*, 142:1524-1533, **1993**.
7. Cicala C, Avantaggiati ML, Rundell K, Graessmann A, Levine AS, and **Carbone M**. SV40 Small-t Antigen Stimulates Viral DNA Replication in Permissive Monkey Cells. *J Virology*, 68:3138-3144, **1994**.
8. **Carbone M**, Pass HI, Rizzo P, Marinetti MR, DiMuzio M, Mew DJY, Levine AS, and Procopio A. Simian virus 40-like DNA sequences in human pleural mesothelioma. *Oncogene*, 9:1781-1790, **1994**.
9. Penno MB, Askin FB, Ma H, **Carbone M**, Vargas MP and Pass HI. High CD44 expression on human mesotheliomas mediates association with hyaluronan. *The Cancer J*, 1:196-203, **1995**.
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XIII. Book and Journal Editorship

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3. Current Understanding of Human Carcinogens and Carcinogenesis. **Carbone M**, Gruber J. and Wong M. (Eds.). “*Seminars in Cancer Biology*”, (December), 14: 399-405, **2004**.
4. Malignant Mesothelioma, Advances in Pathogenesis, Diagnosis, and Translational Therapies. *Malignant Mesothelioma*. Pass, HI, Vogelzang NJ and **Carbone M** (eds). Springer **2005**.
5. Asbestos: Risk Assessment, Epidemiology, and Health Effects (3rd Edition). **Carbone M**, Dodson R, Pass H, Yang H (Eds.). Taylor & Francis Group, CRC Press, Boca Raton, pp 456, August **2024, in press**.

XIV. Book Chapters

1. **Carbone M**, Pompetti F, Cicala C, Nguyen P, Dixon K, and Levine AS. The Role of Small-t Antigen in SV40 Oncogenesis. *Molecular Basis of Human Cancer*, Plenum Press, C. Nicolini (ed.), p. 191-206, **1991**.
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 23. Elmishad A.G., Bocchetta M., Pass H.I. and **Carbone M**. Polio vaccines, SV40 and human tumours, an update on positive and negative results. Vaccine Cell Substrates. Petricciani J., Sheets R (eds). Dev. Biol. (Basel), Basel Karger pp. 85-94, **2005**.
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 30. **Carbone M** and Yang H. SV40. *Encyclopedia of Cancer, 2nd Ed.*, Schwab M (Ed.). Springer.
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 33. **Carbone M** and Bocchetta M. SV40 and Notch-I: multi-functionality meets pleiotropy. *Viruses and Apoptosis*. C. Alonso (ed.), Springer Verlag, Heidelberg, 2nd printing XVI, **2008**. (1st ed., 2004).

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37. Napolitano A, Pellegrini L, Yang H, **Carbone M**. Somatic and germline BAP1 mutations in malignant mesothelioma. In: *Malignant Pleural Mesothelioma: Present Status and Future Directions*, 1st ed. Mineo TC (Ed). Sharjah U.A.E: Bentham Science Publishers Ltd.; **2016**. ISBN: 978-1-68108-193-9.
38. **Carbone M**, Yang H. Biological Activities of Asbestos and Other Mineral Fibers. In: Gualtieri, AF (Ed), *European Mineralogical Union, EMU Notes in Mineralogy, Vol 18; Mineral fibres: crystal chemistry, chemical-physical properties, biological interaction and toxicity*. European Mineralogical Union, pp435-441, **2017**. ISBN 978-0903056-65-6
39. Pass HI, **Carbone M**, Krug LM, Rosenzweig KE. Benign and Malignant Mesothelioma. In: *Cancer: Principles and Practice of Oncology*, 11th ed. De Vita VT, Rosenberg SA, and Lawrence TS (Eds). Philadelphia: Wolters Kluwer; **2019**. ISBN/ISSN 9781496394637
40. Pass HI, Alimi M, **Carbone M**, Yang H, Goparaju CM. Mesothelioma biomarkers discovery in search of validation. In: *Thoracic Surgery Clinics*, Volume 30, Issue 4. Malignant Pleural Mesothelioma: State of the Art. Burt BM (Ed); Litle VR (Consulting Ed). Elsevier: Philadelphia, PA, pp. 395 – 423, **2020**. ISBN-13: 978-0-323-75964-9.
41. Gaudino G, Minaai M, **Carbone M**, Yang H. Biomolecular Pathways in Mesothelioma: What Is New Perspective on Biomolecular Research for Mesothelioma? In: *Malignant Pleural Mesothelioma Advances in Pathogenesis, Diagnosis, and Treatments*, Nakano T, Kijima T (Eds). Gateway East, Singapore: Springer Nature Singapore Pte Ltd., pp.43-52, **2021**. ISBN 978-981-15-9157-0.
42. Giannakou L, Yang H, **Carbone M**. Mesothelioma in 2024. In: *Asbestos: Risk Assessment, Epidemiology, and Health Effects (3rd Edition)*. Carbone M, Dodson R, Pass H, Yang H (Eds.). Taylor & Francis Group, CRC Press, Boca Raton, pp 456, August **2024**.
43. Zolondick AA and **Carbone M**. Bioinformatics Approaches for Mesothelioma. In: *Asbestos: Risk Assessment, Epidemiology, and Health Effects (3rd Edition)*. Carbone M, Dodson R, Pass H, Yang H (Eds.). Taylor & Francis Group, CRC Press, Boca Raton, pp 456, August **2024**.
44. Nowak A, **Carbone M**, Pass HI, Flores RM, Baas P. Mesothelioma. In: *IASLC History: Advances in Thoracic Oncology Treatment and Research (50th Anniversary Edition)*. Hirsch FR, Bunn PA (Eds.). In press, **2024** Jul.

XV. Scientific Correspondence:

1. **Carbone M** and Testa JR. Genetic susceptibility and familial malignant mesothelioma. *Lancet*, 357:1804, **2001**.
2. Dogan UA, Baris YI, Emri S, Testa JR and **Carbone M**. Familial malignant mesothelioma. *Lancet*, 358:1813-1814, **2001**.
3. **Carbone M** and Pass HI. Debate on the link between SV40 and human cancer continues. *J. Natl. Cancer Inst.*, 94:229-230, **2002**.
4. **Carbone M**. Commentary. *Anti-Cancer Research*, 23:3116, **2003**.
5. **Carbone M**. Pathology of asbestos-associated diseases. *Archives of Pathology*. 2nd ed, Roggli VL, Oury TD, and Sporn TA (eds). Pp 421, New York, NY, Springer-Verlag, **2004**.
6. Pass H, **Carbone M**, Wali A. Asbestos Exposure, Pleural Mesothelioma, and Serum Osteopontin Levels. *N Engl J Med* 353:1564-73, **2005**.
7. Baumann F, Buck BJ, Metcalf RV, McLaurin BT, Merkler D, **Carbone M**. Reply to "No increased risk for mesothelioma in relation to natural-occurring asbestos in Southern Nevada". *J*

Thorac Oncol, 10:e64-65, **2015**.

8. Napolitano A, **Carbone M**. Letter to Editor "Concerns about presence of a wild-type BAP1 allele in absence of nuclear protein expression". *JAMA Dermatol*, 151:1265-1266, **2015**.
9. **Carbone M**. Just a handful of publications can collect the prize. *Nature*, 561(7724): 464, **2018**. doi: 10.1038/d41586-018-06816-0.

XVI. Clinical and Teaching Activities

Clinical activities: I review about 300 pleural pathology consults per year that I receive from, Hawaii, the US and from all over the world. Also, I am and I have been the pathologist reviewer of clinical trials for mesothelioma. I provide my diagnostic expertise free of charge to all patients and physicians who ask for my opinion on issues related to pleural and peritoneal diagnosis, and I teach how to diagnose mesothelioma to pathologists in the US and abroad.

Professor, Department of Pathology	John A. Burns School of Medicine University of Hawaii, Honolulu, HI	2006 - present
Professor of Anatomical Pathology	University of Calabria, School of Medicine, Italy	2017-present
Director, Research Lecture Series For Medical Students	Loyola University, Chicago, IL	2003 – 2006
Director, Molecular Biology of Oncogenesis Course	Loyola University, Chicago, IL	2003 – 2006
Autopsy Service and Consulting Pleural Pathologist	Loyola University, Chicago, IL	2000 – 2006
Research Funding Committee	Loyola University, Chicago, IL	1998 – 2006
Molecular Biology of Oncogenesis to Ph.D. Students in Molecular Biology	Loyola University, Chicago, IL	1997 - 2002
Associate Director Molecular Pathology	Loyola University, Chicago, IL	1996 - 2006
20 hours course on “Oncogenes” to Residents in Oncology and Anatomic Pathology	University La Sapienza” Rome, Italy	1994
Molecular Pathology to M.D. and Ph.D. Students	Uniformed Services University of the Health Sciences, Bethesda MD	1989-1994

XVII. Meetings Organized and Chaired

1. **Carbone M** and Vogelzang N. *Malignant Mesothelioma: Therapeutic Options and Role of SV40: An Update*. University of Chicago, Chicago, IL, April 20-21, **2001**.
2. **Carbone M** and Wong M. *Validation of a Causal Relationship: Criteria to Establish Etiology*. National Cancer Institute Workshop, Washington, DC, Dec. 11-12, **2003**.
3. **Carbone M** and Nerurkar V. *Interactions Among Infectious Agents, Environmental Carcinogens, & Genetics in Human Cancer Development*. Symposium, John A. Burns School of Medicine and Cancer Research Center of Hawaii, Honolulu, HI, February 16, **2007**.

4. **Carbone M.** *Mesothelioma, Early Detection, Diagnosis, and Therapeutic Implications.* Workshop, John A. Burns School of Medicine and Cancer Research Center of Hawaii, Honolulu, HI, August 17, **2007**.
5. **Carbone M.** *Translational Cancer Medicine Symposium: Preventive Therapeutic Opportunities in Gene-Environment Interaction & Immunotherapy.* Cancer Research Center of Hawaii, The Queen's Medical Center, Hawaii Pacific Health, Kuakini Health Systems, Honolulu, HI, February 17-18, **2009**.
6. **Carbone M.** *Hepatitis B Virus and the Prevention and Control of Liver Cancer.* Cancer Research Center of Hawaii and The Queen's Medical Center, Honolulu, HI, March 11, **2010**.
7. **Carbone M,** Chadwick D, Gaudino G, Ishihara-Wong D, Iwahashi GY, Morris PT, Yang H. Third Annual Translational Cancer Medicine Symposium. *Mesothelioma-Melanoma Cancer Syndrome: Gene-Environment Interaction?* University of Hawaii Cancer Center, The Queen's Medical Center, Honolulu, HI, December 2, **2011**.
8. **Carbone M,** Yu H, Fagan P. Fourth Annual Translational Cancer Medicine Symposium. *How Do We Reduce Cancer Risks? Altering Pathways to Obesity and Tobacco Use.* University of Hawaii Cancer Center, The Queen's Medical Center, Honolulu, HI, July 27, **2012**.
9. **Carbone M.** Fifth Annual Translational Cancer Medicine Symposium. *Looking closely at HMGB1.* University of Hawaii Cancer Center, Honolulu, HI, February 25, **2013**.
10. **Carbone M,** Yu H. Workshop: *Gene Environment interaction in human cancer development.* University of Hawaii Cancer Center, Honolulu, HI, September 23-24, **2013**.
11. **Carbone M.** Weinman Symposium. University of Hawaii Cancer Center, Honolulu, HI, February 21-22, **2014**.
12. **Carbone M.** 2014 Weinman Symposium. Hawaii Bridging the U.S. and Asia in the Fight Against Cancer. University of Hawaii Cancer Center, Honolulu, HI, May 5, **2014**.
13. **Carbone M.** Weinman: Cancer Mini Symposium (Dr. Tak Mak, Dr. Gerry Melino, Dr. Qiang Pan-Hammarstrom). University of Hawaii Cancer Center, Honolulu, HI, January 16, **2015**.
14. **Carbone M.** Weinman: Nobel Laureate Seminar "Bridging the Cancer Research World". University of Hawaii Cancer Center, Honolulu, HI, August 20-21, **2015**.
15. **Carbone M,** Chao A, Kanodia S, Malik S, Miller M, Wali A, Johnson R. 2015 Weinman Symposium. International Conference On Mesothelioma In Populations Exposed To Naturally Occurring Asbestiform Fibers. University of Hawaii Cancer Center, Honolulu, HI, November 9-10, **2015**.
16. **Carbone M,** Beutler B, Yang H. 8th Weinman Symposium. International Conference on Gene X Environment Interaction. University of Hawaii Cancer Center, Honolulu, HI, January 26-27, **2017**.
17. **Carbone M,** Beutler B, Croce C, Yang H. 9th Weinman Symposium. International Conference on Gene, Metabolism, and Cancer. University of Hawaii Cancer Center, Honolulu, HI, November 30-December 1, **2017**. <https://www.weinmansymposium.com/>
18. **Carbone M,** Beutler B, Croce C, Yang H. 10th Weinman Symposium. International Conference on Cancer Syndromes. University of Hawaii Cancer Center, Honolulu, HI, November 29-30, **2018**. <https://www.weinmansymposium.com/>
19. **Carbone M,** Pass HI, Bueno R, Tsao A (Co-chairs), IASLC Mesothelioma Meeting, July 10-12, **2019**, New York, NY. Chair & Lead Discussion: DNA Repair Session; and Moderator: Debate2, Genomic Profiling.
20. **Carbone M.,** Satouchi M (Session Chairs): BAP1 & Other Novel Molecular & Metabolic Targets in Mesothelioma. IASLC World Conference on Lung Cancer, September 7-10, **2019**, Barcelona, Spain.
21. **Carbone M,** Beutler B, Croce C, Yang H. 11th Weinman Symposium. International Conference on Cancer Cell Metabolism. University of Hawaii Cancer Center, Honolulu, HI, January 22-24, **2020**. <https://www.weinmansymposium.com/>
22. **Carbone M,** Hassan R, Schrupp. BAP1 Virtual Workshop. Cancer Prevention and Therapy in carriers of BAP1 and other germline mutations. University of Hawaii Cancer Center, Honolulu, Hawaii, February 13, **2021**.
23. **Carbone M,** Jaurand MC. Innovative Models to Design New Therapies for Mesothelioma (Session Chairs). Virtual Meeting – Why do we need independent research in oncology? The “Mesothelioma Model”, Rome, Italy, February 18-29, **2021**.

24. Robinson B, **Carbone M.** (Session Chairs); Fennell D, Carbone M, Robinson B, Chin M. Panel Discussion; Pre-Conference Workshop: The Future of Mesothelioma - What Might the Next Decade Look Like For Our Patients? 15th International Conference of the International Mesothelioma Interest Group (iMig), Virtual, May 2, **2021**.
25. **Carbone M,** Beutler B, Croce C, Yang H. 12th/13th Weinman Symposium. International Conference on GXE in Cancer. University of Hawaii Cancer Center, Honolulu, HI, January 26-28, **2022**. <https://www.weinmansymposium.com/>
26. **Carbone M,** Beutler B, Croce C, Yang H. XIV Weinman Symposium. International Conference on GXE in Cancer. University of Hawaii Cancer Center, Honolulu, HI, January 25-27, **2023**. <https://www.weinmansymposium.com/>
27. **Carbone M** (Session Chair). Biomarkers, Genetics/Bioinformatics Workshop. International Mesothelioma Interest Group (iMig), June 25-27, **2023**, Lille France.
28. Carbone M, Beutler B, Croce C, Yang H. XV Weinman Symposium. International Conference on GXE in Cancer. University of Hawaii Cancer Center, Honolulu, HI, January 24-26, **2024**. <https://www.weinmansymposium.com/>

XVIII. Invited Lectures (at major conferences and courses)

1. **Carbone M.** *SV40 Induces Mesotheliomas in Rodents.* II International Mesothelioma Conference, San Francisco, CA, **1993**.
2. **Carbone M.** *Evidence for and Implications of SV40-like Sequences in Human Mesotheliomas.* 14th Nordic Virus Symposium, Tromso, Norway, p. 24 proceedings of the meeting, **1995**. (Keynote Lecture.)
3. **Carbone M.** *SV40 and Mesothelioma.* 3rd International Mesothelioma Interest Group Conference, Paris, France, **1995**. (Invited Speaker & Chairman of session on Genetics).
4. **Carbone M.** *Possible role of SV40 in the Pathogenesis of Human Mesotheliomas.* 1st U.S.-Italy Mesothelioma Conference, Torino, Italy, **1996**. (Invited Speaker and US-Chairman of the Conference).
5. **Carbone M.** *Role of DNA Tumor Viruses in the Development of Human Osteosarcomas.* II International Bone Tumor Conference, November 18-23, Bologna, Italy, **1996**.
6. **Carbone M.** *SV40 Oncogenicity in Hamsters.* United States of America, Department of Health and Human Services, CBER-NCI-NICHD-NCID-NIP-NVPO, Simian Virus (SV40): A Possible Human Polyomavirus, Workshop, Jan. 28, p.60 proceedings of the meeting, Bethesda, MD, **1997**. (Invited Speaker and Panelist).
7. **Carbone M.** *Evidence for Implication of SV40 Sequences in Human Mesotheliomas and Osteosarcomas.* United States of America, Department of Health and Human Services, CBER-NCI-NICHD-NCID-NIP-NVPO, Simian Virus (SV40): A Possible Human Polyomavirus, Workshop, Jan. 27, p.266-282, proceedings of the meeting, Bethesda, MD, **1997**. (Invited Speaker and Panelist)
8. **Carbone M.** *Evidence for SV40 in mesothelioma.* 4th International Mesothelioma Interest Group Conference, Philadelphia, PA, March 12-15, **1997**. (Invited Speaker and Chairman of session on Genetics).
9. **Carbone M.** *SV40 and its Association with Human Mesotheliomas.* 2nd U.S.-Italy Mesothelioma conference. Belgirate, Italy, May 29-30, **1997**. (Invited Speaker and U.S. Chairman of the Conference).
10. **Carbone M.** *Evidence for and Implications of SV40 Sequences in Human Tumors.* First Joint International Conference, AACR and Sbarro Institute for Molecular Medicine, Gene Targets for Cancer Treatment, Capri, Italy, June 3-6, **1997**.
11. **Carbone M.** *SV 40 and Human Mesothelioma.* A Workshop on The Health Effects of Chrysotile Asbestos: Contribution of Science to Risk Management Decisions, Montreal, Canada, September 14-16, **1997**.
12. **Carbone M.** *Simian Virus 40; A Possible Co-Factor in the Development of Malignant Pleural Mesothelioma.* New Developments in Pathogenesis of Malignant Pleural Mesotheliomas. Hacettepe University. Ankara, Turkey, November 19-26, **1997**. (Keynote Lecture).
13. **Carbone M.** *Molecular Biology for Microbiology and Virology.* International Meeting -

- Molecular Biology Clinical Perspectives. Parma, Italy, December 12, **1997**.
14. **Carbone M.** *SV40 and Asbestos as Co-Carcinogenesis in Mesothelioma Development*. Seminar on Environmental Pathology, 305 Course, University of Vermont, College of Medicine, Burlington, Vermont, April 2, **1998**.
 15. **Carbone M.** *Possible Pathogenic Role and Detection of SV40 in Human Mesothelioma*. Molecular Biology of Small DNA Tumor Viruses Meeting. Madison, WI. 7/14-7/19, **1998**.
 16. **Carbone M.** *Pitfalls in Pathologic Diagnosis of Malignant Mesothelioma*. 3rd U.S.-Italy Mesothelioma conference. Brescia, Italy, October 16, **1998**. (Invited Speaker and U.S. Chairman of the Conference).
 17. **Carbone M.** *SV40 Associated Tumorigenesis*. The Society for Biological Therapy, Pittsburgh, PA, October 21-24, **1998**.
 18. **Carbone M.** *SV40 Virus, Polio Vaccine, and Human Mesothelioma: Recent Developments*. American College of Chest Physicians. Mesothelioma Update: 1998. Toronto, Canada, November 10-12, **1998**. Panel Discussion.
 19. **Carbone M.** *Role of SV40 in the Pathogenesis of Mesothelioma*. Multimodality Therapy of Chest Malignancies: Update 98. Harvard Medical School, Boston, MA, **1998**. Guest Faculty.
 20. **Carbone M.** *Simian Virus 40 and Human Mesothelioma*. 4th U.S.-Italy Mesothelioma conference. Lignano Sabbiadoro, Italy, March 18-19, **1999**. (Invited Speaker and U.S. Chairman of the Conference).
 21. **Carbone M.** *The Association of Simian Virus 40 with Hamsters and Human Lymphomas: Biological Significance*. British Lymphoma Society Meeting. Cardiff, U.K., May 14, **1999**. (Keynote lecture, delivered by P. Rizzo).
 22. **Carbone M.** *Mesothelioma*. 1st International Chicago Symposium on Malignancies of the Chest and Head/Neck. Chicago, IL, October 1-2, **1999**.
 23. **Carbone M.** *Molecular Genetics of Mesothelioma*. American College of Chest Physicians. Plenary Lecture: Mesothelioma. Chicago, IL, November 2, **1999**.
 24. **Carbone M.** *Role of SV40 in the Pathogenesis of Mesothelioma*. Multimodality Therapy of Chest Malignancies: Update 2000. Harvard Medical School, Boston, MA, **2000**. Guest Faculty.
 25. **Carbone M.** *Molecular Genetics of Mesothelioma*. International Mesothelioma Conference. Aviano, Italy, April 25, **2000**.
 26. **Carbone M.** *Malignant Mesothelioma*. Joint Meeting of Pulmonary Diseases and Thoracic Surgery. Antalya, Turkey, November 6-9, **2000**.
 27. **Carbone M.** *Epidemiology and pathogenesis of mesothelioma: asbestos, SV40 and genetics*. Le mesotheliome Das Mesotheliom. Fribourg, November 20, **2000**. (Keynote Lecture).
 28. **Carbone M.** *Human Mesothelial Cells are Uniquely Susceptible to SV40 Infection and Transformation*. 2nd International Mesothelioma Meeting, Chicago, IL. April 21, **2001**.
 29. **Carbone M.** *Role of environment virus and genetic in the pathogenesis of mesothelioma*. ICC International Cancer Center, Rovigo, Italy, May 11, **2002**.
 30. **Carbone M.** *Malignant Mesothelioma: New Biological and Clinical Advances*. Meet the Professors Session: American Society of Clinical Oncology, Orlando, FL, May 18-21, **2002**.
 31. **Carbone M.** *Mesothelioma Pathogenesis*. American Society of Clinical Oncology, Orlando, FL, May 18-21, **2002**.
 32. **Carbone M.** *Pathogenesis of mesothelioma: Role of asbestos, SV40 and genetic predisposition*. 18th UICC International Cancer Congress, Oslo, Norway, June 30–July 5, **2002**.
 33. **Carbone M.** *The presence and mechanisms of SV40 in human cancers*. National Academy of Science – Immunization Safety Review Committee, Washington, DC, July 11, **2002**.
 34. **Carbone M.** *Role of environmental carcinogens, viruses, and genetic predisposition in the pathogenesis of malignant mesothelioma*. Internal Medicine Grand Rounds Lecture. Eastern Virginia Medical School, July 24, **2002**.
 35. **Carbone M.** *The presence and mechanisms of SV40 in human cancers*. Milton S. Hershey Medical Center - Department of Microbiology & Immunology Seminar, Hershey, PA, October 3, **2002**.
 36. **Carbone M.** *Il Mesotelioma maligno: novita eziologiche e terapeutiche*. Sala Rossini – Caffè Pedrocchi, Padova, Italy, March 5, **2003**.
 37. **Carbone M.** *SV40 and human cancer* Society for General Microbiology. 152nd Meeting. Edinburgh, Scotland, April 7-11, **2003**.

38. **Carbone M.** Etiology and Pathology of Mesotheliomas 4th International Lung Cancer Congress. Maui, Hawaii, June 25-28, **2003**.
39. **Carbone M.** *Molecular pathogenesis of mesothelioma*. 10th World Conference on Lung Cancer. Vancouver, Canada, August 10-14, **2003**.
40. **Carbone M.** *Pathogenesis of mesothelioma*. Italian Society of Anatomic Pathology, Genova, Italy. October 22-25, **2003**.
41. **Carbone M.** *Multistep and multifactorial carcinogenesis. When does a contributing factor become a human carcinogen?* Validation of a causal relationship: criteria to establish etiology. National Cancer Institute Workshop, Washington, DC, Dec. 11-12, **2003**.
42. **Carbone M.** *Role of environmental carcinogens, SV40 and genetic predisposition in the pathogenesis of human mesothelioma*. Karmanos Cancer Institute Grand Rounds, Detroit, Michigan, Jan. 8, **2003**.
43. **Carbone M.** *Pathogenesis of mesothelioma*. VII Meeting of the International Mesothelioma Interest Group (iMig), Brescia, Italy, June 24-26, **2004**.
44. **Carbone M.** *SV40 in human tumors, an update*. National Institute of Allergy and Infectious Diseases (NIAID) Vaccine Cell Substrates, June 29-July 1, **2004**.
45. **Carbone M.** *Inherited mesothelioma*. First International Symposium on Malignant Mesothelioma, October 14-16, Las Vegas, **2004**.
46. **Carbone M.** *The Pathogenesis of Mesothelioma*. Karmanos Cancer Institute, Detroit, Michigan, November 15, **2004**.
47. **Carbone M.** *Contribution of Asbestos, Erionite, Genetics and SV40 in the Pathogens of Human Malignant Mesothelioma*. University of Pittsburgh, February 23, **2005**.
48. **Carbone M.** *Mesothelioma: Carcinogenesis Issues: New Insights on "The Asbestos/SV40 Phenomenon"*. 11th World Conference on Lung Cancer, Barcelona, Spain, July 3, **2005**.
49. **Carbone M.** *Pathogenesis of Mesothelioma-Early Detection Markers*. University of Sydney, Australia. July 25, **2005**.
50. **Carbone M.** *Interaction among Asbestos, Erionite, SV40 and Genetics in the Pathogenesis of Human Malignant Mesothelioma*. Honolulu, University of Hawaii. August 29, **2005**.
51. **Carbone M.** *Turkey, Erionite, and the Genetic Connection*. Second International Symposium on Malignant Mesothelioma. Las Vegas, NV. October 6-8, **2005**.
52. **Carbone M.** *Mesothelioma in Cappadocia: The Gene/Environment Interaction*. The 8th International Conference of the International Mesothelioma Interest Group. Chicago, IL, October 19-22, **2006**.
53. **Carbone M.** *Asbestos*. An International Conference on Occupational Lung Diseases: Up Close. Sudbury, Ontario, May 10, **2007**.
54. **Carbone M.** *Gene Environmental Interaction in Mesothelioma*. 10th Annual West Hawaii Cancer Symposium. Kailua-Kona, HI, September 7-8, **2007**.
55. **Carbone M.** *Interaction of Mineral Fibers with Genetic and Viruses in the Pathogenesis of Mesothelioma*. Harvard Medical School, Brigham and Women's Hospital. Boston, MA, September 14, 2007. Lecturer, International Mesothelioma Program.
56. **Carbone M.** *Mesothelioma: New Developments in Pathogenesis and Early Detection Offer Possible Opportunities for Immunotherapy*. Workshop, NCI-University of Texas in El Paso. El Paso, TX, September 21-22, **2007**.
57. **Carbone M.** *Interactions Among Genetics, Erionite and Asbestos Exposure, and SV40 Infections, in the Pathogenesis of Human Malignant Mesothelioma*. M.D. Anderson Grand Rounds Lecture, Blaffer Visiting Professorship, Houston, TX, February 1, **2008**.
58. **Carbone M.** *SV40 Tag/p53 Complexes Actively Promote Malignant Cell Growth of Human Mesothelial Cells*. 2nd Conference on Aneuploidy and Cancer: Clinical and Experimental Aspects, Oakland, CA, February 2-3, **2008**.
59. **Carbone M.** *New Approaches in Treatment and Screening of Mesothelioma*. National Cancer Week of Turkey, April 3, **2008**.
60. **Carbone M.** *Mesothelioma 2008: Diagnostic and Therapeutic State of the Art*. 11th Annual West Hawaii Cancer Symposium. Kailua-Kona, HI, September 5-6, **2008**.
61. **Carbone M.** *Etiology of mesothelioma other than mineral fibres: hereditary factors and virus*. European Respiratory Society (ERS) Congress 2008, Berlin, Germany, Oct. 4-8, **2008**.
62. **Carbone M.** *Gene Environment Interaction as Cause of Mesothelioma Epidemics*. Translational

- Cancer Medicine Symposium: Preventive and Therapeutic Opportunities in Gene-Environment Interaction and Immunotherapy. Honolulu, HI, February 17-18, **2009**.
63. **Carbone M.** *Results of a randomized Phase 3 clinical trial using Onconase+doxorubicin vs. doxorubicin alone and possible use of Onconase in individuals from high risk families with high levels of mesothelin/osteopontin.* 2nd NIH Mesothelioma Conference, Bethesda, MD, March 6, **2009**.
 64. **Carbone M.** *Early Detection of Mesothelioma in Cappadocia.* 6th Early Detection Research Network (EDRN) Scientific Workshop, & 19th EDRN Steering Committee Meeting. Mesothelioma Working Group Meeting, Bethesda, MD, August 31-September 3, **2009**.
 65. **Carbone M.** *Interactions among viruses, genetics and environment in mesothelioma pathogenesis.* Comprehensive Cancer Center of Wake Forest University, Department of Cancer Biology: Sixth Annual Deal Lectureship, Winston-Salem, NC, October 6, **2009**.
 66. **Carbone M.** *Gene-Environment Cancer Interaction.* 5th International Asian Pacific Organization for Cancer Prevention (APOCP) Conference, Istanbul, Turkey, April 3-7, **2010**.
 67. **Carbone M.** *Role of mineral fibers, genetics and SV40 in the pathogenesis of mesothelioma.* Twentieth Annual Harold L. Stewart Lecture in Experimental Oncology, USHUS Bethesda, MD, November 18, **2010**.
 68. **Carbone M.** *Mechanisms of mineral fibers, genetics and SV40 in the pathogenesis of human mesothelioma lead to novel preventive and therapeutic approaches.* Medical Academy of Rome, Speaker, 2010-2011 Scientific Program, Rome, Italy, November 25, **2010**.
 69. **Carbone M.** *Gene-Environment Interaction in Mesothelioma.* Center for Translational and Public Health Genomics: Seminar Series, M.D. Anderson Cancer Center, Houston, TX, March 30, **2011**.
 70. **Carbone M.** *Genetic Predisposition, Erionite, and Mesothelioma.* 1th Joint Meeting: Advances in Cancer Research between Magna Graecia University and University of Hawaii. Distinguished Lecture, Instituto Nazionale Tumori "Regina Elena", Catanzaro, Italy, July 8, **2011**.
 71. **Carbone M.** *Genetics, asbestos and HMGB1 driven inflammation in the pathogenesis of mesothelioma.* University of Pittsburgh: Immunology Seminar Series, Pittsburgh, PA, October 27, **2011**.
 72. **Carbone M.** *The BAP1 Cancer Syndrome: Mesothelioma, Cutaneous and Uveal Melanoma and Atypical Spitz Nevi.* 15th Annual West Hawaii Cancer Symposium, Kona, HI, September 7-8, **2012**.
 73. **Carbone M.** *The BAP1 Cancer Syndrome.* 11th International Conference of the International Mesothelioma Interest Group (iMig), Boston, MA, September 11-14, **2012**. (Keynote speaker and Session Chair).
 74. **Carbone M.** *The Bap1 Cancer Syndrome: Mesothelioma, uveal and cutaneous melanoma.* The Second Symposium of the Affiliated Shanghai Sixth People's Hospital of SJTU and University of Pittsburgh School of Medicine, Shanghai, China, September 20, **2012**.
 75. **Carbone M.** *The Bap1 Cancer Syndrome.* 2012 Zhejiang and Jiangxi Cancer Conference, Hangzhou, Zhejiang, China, September 27-29, **2012**.
 76. **Carbone M.** (Panel Speaker) News from the genetics front; and Multidisciplinary panel to promote interaction between clinicians and researchers to achieve the best possible outcome for mesothelioma patients. Meso Foundation 2013 Symposium: All-in for a Cure! Las Vegas, NV, March 6-8, **2013**.
 77. **Carbone M.** *Functional p53 facilitates Simian Virus infection of human cells via IGF-1.* 5th International Conference on Polyomaviruses and Human Diseases: Basic and Clinical Perspectives, Stresa, Italy, May 9-11, **2013**.
 78. **Carbone M.** *Bap1 Cancer Syndrome.* Seminar-Cooperative Program on Translational Research on Pleural Mesothelioma, Magna Graecia University and Tommaso Campanella Cancer Center, Catanzaro, Italy, May 15, **2013**.
 79. **Carbone M.** *BAP1 gene mutation and mesothelioma pathogenesis.* IASLC: 15th World Conference on Lung Cancer, Sydney, Australia, October 27-30, **2013**.
 80. **Carbone M.** *Contributions of genetic and environmental factors to mesothelioma.* The 18th Congress of the Asian Pacific Society of Respiriology (APSR 2013), Yokohama, Japan, November 11-14, **2013**. (Session Chair/Speaker).
 81. **Carbone M.** *The BAP1 Cancer Syndrome: What do mesotheliomas, melanomas, and renal cell*

- carcinomas have in common?* The Division of Cancer Medicine Grand Rounds, M.D. Anderson Cancer Center, Houston, TX, February 11, **2014**.
82. **Carbone M.** Keynote Address. Mesothelioma Applied Research Foundation International Symposium on Malignant Mesothelioma, Alexandria, VA, March 5-7, **2014**.
 83. **Carbone M.** Keynote Speaker. *BAP1 cancer syndrome: mesothelioma and other malignancies*. 2014 Eastern China Thoracic Oncology Symposium and the 7th Thoracic Oncology Forum of Zhejiang Province, Hangzhou, China, June 27-29, **2014**.
 84. **Carbone M.** BAP1 mutations in sporadic mesothelioma. 2014 International Mesothelioma Interest Group (iMig) Cape Town, South Africa, October 21-24, **2014**.
 85. **Carbone M.** The BAP1 Cancer Syndrome and Mesothelioma, Sidra Medical and Research Center, October 28, **2014**, Doha, Qatar.
 86. **Carbone M.** *The BAP1 Cancer Syndrome: High Incidence of Mesothelioma, Uveal and Cutaneous Melanomas, and Other Malignancies*. Department of Biomedical Informatics (DBMI) Colloquium, University of Pittsburgh Cancer Institute, Pittsburgh, PA, October 31, **2014** (Visiting Professor).
 87. **Carbone M.** *Pathogenesis and Diagnosis of Mesothelioma*. DRI: Asbestos Medicine Seminar, November 6-7, **2014**, San Francisco, CA.
 88. **Carbone M.** *BAP1 mutations-spectrum and biology in cancer*. The Cholangiocarcinoma Foundation Annual Conference, February 5-6, **2015**, Salt Lake City, Utah.
 89. **Carbone M.** *The BAP1 cancer syndrome: Mesothelioma, melanoma, sarcomas, renal cell, cholangiocarcinomas and MBAITs*. Workshop on New Frontiers in Oncology, University of Rome Tor Vergata, April 27, **2015**, Rome, Italy.
 90. **Carbone M.** *BAP1 cancer syndrome, mesothelioma, melanomas and carcinomas: Mechanisms and preventive strategies*. Mini Workshop: Mesothelioma Maligno della Pleura, University of Ferrara, April 29, **2015**, Ferrara, Italy.
 91. **Carbone M.** *The BAP1 cancer syndrome traced to a Switzerland family in the 1700's: Mechanisms and clinical implications*. Surgical & Gastroenterological Grand Rounds, University of Zurich, June 16, **2015**, Zurich, Switzerland.
 92. **Carbone M.** *The Bap1 cancer syndrome: Mesothelioma, melanomas, carcinomas and more, ancestral origin, clinical presentation and molecular mechanisms*. Dipartimento di Medicina Sperimentale - Università di Roma Sapienza, June 25, **2015**, Rome, Italy.
 93. **Carbone M.** *The BAP1 cancer syndrome: Mesotheliomas, melanomas, carcinomas and sarcomas*. Department of Thoracic Surgery, Mount Sinai Hospital, New York, July 31, **2015**.
 94. **Carbone M.** *BAP1 cancer syndrome and mesothelioma* (Presenter-Mini Symposium). Discussant: Oral Session: Prevention & Cancer Risk; Session Chair: Mini Oral: Epidemiology, Early Detection, Biology. IASLC: 16th World Conference on Lung Cancer, Denver, Colorado, September 5-9, **2015**.
 95. **Carbone M.** *Aspirin and others HMGB1 inhibitors as potential drugs to prevent or delay human mesothelioma growth* (Presenter). Chair of Session: DAMPS in Tumor Immunology. 7th International Symposium DAMPS and HMGB1, September 10-12, **2015**, Bonn, Germany.
 96. **Carbone M.** *BAP1 mutations originating in 1500s in Switzerland and transmitted through multiple generations*. Seminars in Molecular Oncology, Department of Medicine and Clinical Trials, University Magna Grecia, Catanzaro, Italy, September 24, **2015**.
 97. **Carbone M.** *The BAP1 Cancer Syndrome: Mesothelioma, Melanomas, Carcinomas and Sarcomas. Causes, Mechanisms and Clinical Implications* (Keynote speaker). UC Davis Comprehensive Cancer Center: 21st Annual Cancer Research Symposium, Sacramento, CA, October 29-30, **2015**.
 98. **Carbone M.** *The BAP1 Syndrome and the significance of somatic BAP1 mutations in mesothelioma and other malignancies*. San Raffaele Rome Research Center, Rome Italy, November 18, **2015**.
 99. **Carbone M.** *BAP1 cancer syndrome asbestos and mesothelioma*. Seminar: Genetic and carcinogenic asbestos, University of Turin Science Department of Public Health and Pediatric, Section of Occupational Medicine, November 19, **2015**.
 100. **Carbone M.** *BAP1 mutations and mesothelioma*. UT Southwestern Medical Center, Center for Genetics of Host Defense Seminar, Dallas, TX, February 1, **2016**.

101. **Carbone M.** BAP1 and Genetics (Mini Symposium Session Chair); *BAP1 and mesothelioma* (Speaker). 13th International Conference of the International Mesothelioma Interest Group (iMig), Birmingham, UK, May 1-4, **2016**.
102. **Carbone M.** *BAP1 mutations and cancer*. Loyola University Chicago, Cardinal Bernardin Cancer Center, Chicago, IL, June 20, **2016**.
103. **Carbone M.** Topic: Mesothelioma -- progress of research (Speaker panel). Rotary of Catanzaro, Catanzaro, Italy, September 13, **2016**.
104. **Carbone M.** *Mesothelioma: new scientific and clinical developments*. Seminar: University of Roma "Tor Vergata", Department of Medicine, Rome, Italy, September 20, **2016**.
105. **Carbone M.** *Gene-environment interaction in mesothelioma: multiple noncontiguous minute deletions on chromosome 3p21*. Genes Versus Environment in Cancer Workshop. University of Roma "Tor Vergata", Department of Medicine, Rome Italy, December 2, **2016**.
106. **Carbone M.** Mesothelioma Workshop (Session Chair); *Mesothelioma in a Setting of Germline BAP1 Mutations* (Speaker). IASLC: 17th World Conference on Lung Cancer, Vienna, Austria, December 4-7, **2016**.
107. **Carbone M.** *Gene mutations in mesothelioma*. 2017 International Symposium on Malignant Mesothelioma (MARF), Bethesda, MD, March 27-28, **2017**.
108. **Carbone M.** *Germline BAP1 and genetic interactions with the environment*. NCI Mesothelioma Clinical Trials Planning Meeting, Bethesda, MD, March, 29-30, **2017**.
109. **Carbone M.** *Genetics of Mesothelioma*. 2017 European Lung Cancer Conference (ELCC), Malignant Pleural Mesothelioma Educational Session, Geneva, Switzerland, May 5-8, **2017**.
110. **Carbone M.** *Molecular epidemiology of pleural mesothelioma: the role of BAP1*. Magna Graecia University, Specialty School Program of Medical Oncology, Catanzaro, Italy, May 8-12, **2017**.
111. **Carbone M.** *Natural occurring asbestos with special attention to erionite; and Genetic factors and carcinogenesis of mineral fibres* (Distinguished Lecturer). 2017 European Mineralogical Union (EMU) School on Mineral fibres: crystal chemistry, chemical physical properties, biological interaction and toxicity, Modena, Italy, June 19-23, **2017**.
112. **Carbone M.** *How BAP1 regulates gene-environment interaction in preventing or, when mutated, causing human cancer* (Keynote speaker). 2017 Eastern China Thoracic Malignancy Symposium and the 9th Thoracic Malignancy Forum of Zhejiang Province, Huzhou, China, July 1-2, **2017**.
113. **Carbone M.** *Molecular mechanisms regulating gene-environment interaction in human cancer*. Institute for Health Innovation, Desert Research Institute, Reno, Nevada, July 24, **2017**.
114. **Carbone M.** *How BAP1 modulates gene-environment interaction in carcinogenesis and renders tumor cell resistant to chemotherapy*. IASLC 2017 Multidisciplinary Symposium in Thoracic Oncology, Chicago, IL, September 14-16, **2017**.
115. **Carbone M.** *Gene-environment interaction in asbestos carcinogenesis and mesothelioma*. The Monticello Conference on Elongated Mineral Particles: An Assessment of Health Effects, Definitions, and Research Priorities, Charlottesville, VA, October 18-20, **2017**.
116. **Carbone M.** The Roles of miRNA and BAP1 (Mini Symposium Session Chair); *How BAP1 modulates gene-environment interaction in carcinogenesis and renders tumour cells resistant to chemotherapy* (Oral presenter); *Application of CGH in mesothelioma and its role in the identification of new treatment targets* (Speaker). 14th International Conference of the International Mesothelioma Interest Group (iMig), Ottawa, Canada, May 2-5, **2018**.
117. **Carbone M.** *Course of lessons on mesothelioma and gene-Environment interaction in human cancer*. Xiamen University, China, May 29-June 4, **2018**.
118. **Carbone M.** *Mechanisms and targets for BAP1 activity* (Speaker, Mini Symposium- Clinical Science in Mesothelioma); Mesothelioma Workshop (Session Chair/Moderator): *BAP1 mutations: Mechanisms and Significance* (Oral presentation). IASLC: 19th World Conference on Lung Cancer, Toronto, Canada, September 23-26, **2018**.
119. **Carbone M.** *BAP1 mutations and mesothelioma*. 2018 Hangzhou International Symposium of Oncology, Zhejiang Cancer Hospital, Hangzhou, China, October 19-21, **2018**.
120. **Carbone M.** *The BAP1 Cancer Syndrome: Mesothelioma, Uveal Melanoma, Renal, Cholangio and Breast Carcinomas; Mechanisms and Clinical Significance*. Temple University, Department of Biology, Philadelphia, PA, October 29, **2018**.

121. **Carbone M.** *The BAP1 Cancer Syndrome: Mesothelioma, Uveal Melanoma, Renal, Cholangio and Breast Carcinomas; Mechanisms and Clinical Significance.* University of Roma La Sapienza, Rector Honorary lecture, Rome, Italy, May 17, **2019**.
122. **Carbone M.** *The Bap1 Cancer Syndrome (Open Lecture).* Xiamen University, China, June 3-8, **2019**.
123. **Carbone M.** *BAP1 cancer syndrome -mesothelioma-melanoma, etc.-, how we discovered it, where it originated, GxE, mechanisms and clinical implications.* Distinguished Min Chiu Li, M.D., Lecture, University of California San Diego, Moores Cancer Center, San Diego, CA, August 5, **2019**.
124. **Carbone M.** *Mesothelioma (Speaker), Highlight of the Previous Day Session.* IASLC World Conference on Lung Cancer, Barcelona, Spain, September 7-10, **2019**.
125. **Carbone M.** *BAP1 cancer syndrome: how this gene regulate gene x environment interactions.* ABCD 2019 Congress, Bologna, Italy, September 19-21, **2019**,
126. **Carbone, M.** *BAP1 and Mesothelioma.* From Genes to Environment in Thoracic Cancers (Claudio Mineo Honorary lecture). University of Rome Tor Vergata, Rome, Italy, September 23, **2019**.
127. **Carbone M.** *The BAP1 cancer syndrome: unique mechanisms and clinical characteristics requiring specific medical approaches (Distinguished Lecture).* Conference of Italian Association of Cell Cultures (AICC); From Single Gene Analysis to Single Cell Profiling: A New Era for Genomic Medicine, Catanzaro, Italy, October 1-2, **2019**.
128. **Carbone M.** *COVID-19.* Webinar presentation (Speaker), ABA Conference, May 14, **2020**.
129. **Carbone M.** *SARS-CoV-2 infection vs. COVID-19 disease.* Podcast "Unbreaking Science with Dr Jack" (Dr. Lyons-Weiler), July 29, **2020**. Podcast Guest.
130. **Carbone M.** *COVID-19.* Webinar: Maui County Medical Society, September 16, **2020**. Guest Speaker.
131. **Carbone M.** *The BAP1 Cancer Syndrome: a model to study Gene x Environment interaction in mesothelioma and in other cancers.* Webinar, Lighthouse Series talk, Navigate BioPharma Services, Inc. November 4, **2020**. Guest Speaker.
132. **Carbone M.** *Mesothelioma: Scientific Clues for Prevention, Diagnosis and Therapy.* Webinar: Eskisehir Osmangazi University Lung and Pleural Cancers Clinical and Research Center, Research Conferences, January 13, **2021**.
133. **Carbone M.** *BAP1 as a Biomarker - Implications for Treatment (Including Immunotherapy).* IASLC 2020 World Conference on Lung Cancer, Singapore, Worldwide Virtual Event (WCLC 2020), January 28–31, **2021**.
134. **Carbone M.** *Biological differences of mesothelioma in carriers of germline mutations of BAP1 and of other genes.* BAP1 Virtual Workshop. Cancer Prevention and Therapy in carriers of BAP1 and other germline mutations. University of Hawaii Cancer Center, Honolulu, Hawaii, February 13, **2021**.
135. **Carbone M.** *Mesothelioma Metabolism.* Virtual Meeting – Why do we need independent research in oncology? The “Mesothelioma Model”. February 18-29, **2021**.
136. **Carbone M.** *Gene X Environment Interaction in Cancer and in Mesothelioma: Opportunities for Prevention, Early Detection and Novel Therapies.* 15th International Conference of the International Mesothelioma Interest Group (iMig), Virtual, May 7-9, **2021**.
137. **Carbone M.** *Environmental exposure to carcinogenic fibres, genetic predisposition and mesothelioma.* Assessing and managing the risk of carcinogenic erionite in New Zealand - Webinar Series, June 8, **2021**, Auckland, Wellington.
138. **Carbone M.** *Mesothelioma in carriers of germline BAP1 mutations: Story and discovery.* 3rd International NTNU Symposium on Clinical Biomarkers of Cancer, Virtual, June 15-17, **2021**, Oslo, Norway.
139. **Carbone M.** Webinar. *Pleural Mesothelioma: clinical Implications of genetic and molecular alterations*, June 29, **2021**, Alessandria, Italy.
140. **Carbone M.** *The BAP1 cancer syndrome and the overall significance of GXE interaction in mesothelioma.* Alliance Against Cancer (ACC) 6th Annual Meeting, Virtual, September 23-25, **2021**, Italy. <https://meetingacc2021-ircsbari.it/>
141. **Carbone M.** *The discovery of the BAP1 Cancer Syndrome and its present clinical impact.* Renown Cancer Institute Seminar Series, Reno, Nevada, March 10, **2022**.

142. **Carbone M.** *Pleural Mesothelioma: clinical Implications of BAP1 mutations.* (Open Lecture) The Beutler Institute Distinguished Lecture Series at Xiamen University, China. Webinar: March 17, **2022**.
143. **Carbone M.** *Gene-environmental interaction in mesothelioma* (Speaker); Mesothelioma Session (Moderator). Hawaii Lung Cancer Summit (1st Global Summit on Thoracic Malignancies), Kona, Hawaii, July 6-9, **2022**.
144. **Carbone M.** *BAP1a novel regulator of HIF1-alpha: Clinical implications.* Plenary lecture. International Mesothelioma Interest Group (IMIG) June 25-27, **2023**, Lille France.
145. **Carbone M.** *BAP1 as an Evolving Target.* IASLC/iMig Workshop. IASLC 2023 World Conference on Lung Cancer, September 9-12, **2023**, Singapore.
146. **Carbone M.** *Gene-Environment Interaction and Cancer.* Cutting Edge Advancements in Our Fight Against Cancer: Science as a Symbol of Resilience of a Town and a Community, September 15, **2023**, L'Aquila, Italy.
147. **Carbone M.** *Gene Versus Environment: Mesothelioma.* National Academy LINCEI, September 18-19, **2023**, Rome, Italy.
148. **Carbone M.** *Bap1 and Cancer.* Baylor College of Medicine, Department of Molecular and Cellular Biology Seminar Series, January 10, **2024** (Virtual), Houston, Texas. Guest Speaker.

XIX. Editorials and Commentaries in Scientific Journals about Dr. Carbone's Research:

1. Brown P. Mystery virus linked to asbestos cancer. *New Scientist*, p.4, May, **1994**.
2. *Comment.* Fear of failing. *New Scientist*, p.3, May, **1994**.
3. Brown P. Polio vaccine linked to cancer. *New Scientist*, p.16, August, **1996**.
4. Pennisi E. Monkey virus DNA found in rare human cancers. *Science*, p.748-749, February, **1997**.
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11. Vastag B. Sewage yields clues to SV40 transmission. *JAMA*, 288(11): **2002**.
12. Bookchin D. Vaccine scandal revives cancer fear. *New Scientist*, p. 6-7, July **2004**.
13. Ross K. Millions May Have Received Contaminated Polio Vaccine. *Science AAAS*, 11/15/**2005**.
14. Bangham J. A rock and a hard place. *Nature Reviews Cancer* V 6: 489, **2006**.
15. Editorial: How asbestos triggers cancer. *Chemical & Engineering News*, Vol 84(26):34, June **2006**.
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23. Lobb R. Michele Carbone: Gene hunter of Hawai'i. *American Association for Cancer Research*, <https://www.aacr.org/professionals/research-funding/grantees/michele-carbone-gene-hunter-of-hawaii/>, May **2022**.

24. **Carbone M**, Yang H, Pass HI, Taioli E. Did the ban on asbestos reduce the incidence of mesothelioma? *J Thoracic Oncol*, 18:694-697, **2023**. DOI: <https://doi.org/10.1016/j.jtho.2023.03.013>

XX. Professional Courses:

1. Acquired Immunodeficiencies and Related Pathology. Scuola Superiore di Oncologia e Scienze Biomediche, Genova, Italy. May 6-7, 1985.
2. TRAC 3 Recombinant DNA Methodology. Foundation for Advanced Education in Sciences, National Institutes of Health, Bethesda, MD. October 2 - December 18, 1986.
3. TRAC 2 Separation Techniques: Proteins and Other Biomolecules. Foundation for Advanced Education in Sciences, National Institutes of Health, Bethesda, MD. March 31 - June 2, 1987.
4. XI Course of the International School of Pure and Applied Biostructure NATO-ASI on Molecular Basis of Human Cancer, Erice, Italy. May 1990.
5. Forty- First Tutorial on Clinical Cytopathology. Chicago, IL March 9-16, 1996.
6. Forty-Second Tutorial on Clinical Cytopathology. Los Angeles, CA. March 15-22, 1997.
7. 9th Annual Review, Gastrointestinal Surgical Pathology and the 19th Annual Course Hepatopathology '98. Armed Forces Institute of Pathology, Bethesda, MD, August 16-20, 1998.
8. Thoracic Pathology: With Clinical and Radiologic Correlations. Armed Forces Institute of Pathology, Lake Buena Vista, Florida, December 10-13, 1998.
9. 9th Annual Anatomic Pathology. Armed Forces Institute of Pathology, Silver Spring, MD. May 2-8, 1999.
10. 10th Annual Review, Gastrointestinal Surgical Pathology and the 20th Annual Course Hepatopathology '99. Armed Forces Institute of Pathology, Bethesda, MD, August 15-17, 1999.
11. 2nd Annual Soft Tissue Tumors. Armed Forces Institute of Pathology, Silver Spring, MD. October 7-9, 1999.
12. Current Issues in Gynecologic Pathology. Armed Forces Institute of Pathology, Amelia Island, Florida, December 9-11, 1999.
13. U.S. and Canadian Academy of Pathology – Diagnostic Pathology 2000. Armed Forces Institute of Pathology, Philadelphia, PA, August 3-11, 2000.
14. Thoracic Pathology with Clinical and Radiologic Correlation. Armed Forces Institute of Pathology. Bethesda, MD, November 13-15, 2002.
15. Diagnostic Pathology of Soft Tissue Tumors. Harvard Medical School. Boston, MA, November 18-22, 2002.
16. Soft Tissue Tumor Pathology. Armed Forces Institute of Pathology, Bethesda, MD. September 29-October 3, 2003.
17. Fundamentals of Personnel Law for Managers and Supervisors. Human Resources Council January 15, 2004.
18. Soft Tissue Tumor Pathology. Armed Forces Institute of Pathology, Bethesda, MD. September 26-29, 2005.

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2. **Carbone M**, Mirolo M, and Baroni CD. Morphological and Immunohistochemical Characteristics of LAS Induced by HTLVIII. XVI Meeting of the Medical Society of Calabria. Cosenza, Italy, **1985**.
3. **Carbone M**, and Caramanico L. Immunological and Morphological Characteristics of the Immune Response in Breast Cancer. *Recentia Medica*, 2:99-108, **1985**.
4. Grandinetti M, Vero S, Tripodi G, Pingitore D, Perri F, **and Carbone M**. Evaluation of the Muscle and Skeleton Pathology of the Leg by CAT Scan. *Scripta Medica Brutia*, 1:2-10, **1985**.
5. Iritano A, Raffa S, Tripodi G, **and Carbone M**. Skeletal Malformation in the Fat Syndromes of

- Children. *Scripta Medica Brutia*, 3:142-149, **1985**.
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 7. Pompetti F, Cicala C, Nguyen P, Dixon K, Levine AS, **Carbone M**. Transformation by SV40 small t mutants is restricted, *in vivo*, to limited cell types. **1987**.
 8. Roy A, Murai K, **Carbone M**, Levine AS, and Patch CT. Growth of SV40 Induced Tumors: A Recently Identified Growth Inhibitory Factor Secreted by SV40-Transformed Hamster Cells has an Anti-proliferative Effect on Immune Effector Cells. Nato Advance Research Workshop, Les Arcs, France. Cell to Cell Signals in Mammalian Development. **1988**.
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 10. **Carbone M**, Chattopadhyay SK, and Lewis Jr. AM. "Hit and Run" Transformation by Human Adenoviruses: Ad5 Genome Function May Initiate But Not Be Required to Maintain the Neoplastic Phenotype of Transformed Mouse Cells. AACR Special Conference in Cancer Research: The Role of DNA Viruses in Human Tumors, San Diego, CA. **1989**.
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 15. Pompetti F, Cicala C, Picci P, Levine AS, and **Carbone M**. RB, P53, RAS, and MYC Oncogenes in Primary Untreated Osteosarcomas Negative Controls on Cell Growth and Their Breakdown During the Pathogenesis of Cancer. AACR Special Conference on Cancer, Cape Cod, MA. **1991**.
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ORCID iD: 0000-0001-8928-8474