**Curriculum Vitae**

France Carrier, Ph.D.

Associate Professor

University of Maryland School of Medicine

**Date** August 22, 2016

**Contact Information**

Business Address: Marlene and Stewart Greenebaum Cancer Center

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Foreign Languages: French (native)

**Education**

1983 B.Sc., Medical Biology, University of Quebec at Trois-Rivières

Québec, Canada

1986 M.Sc.,Clinical Sciences/Biochemistry, University of Montreal,

Québec, Canada

1988 Ph.D., Clinical Sciences/Biochemistry, University of Montreal

Québec, Canada

**Post Graduate Education and Training**

1988-1989 Postdoctoral Fellow, Protein Engineering group, Biotechnology Research Institute, National Research Council, Montreal Canada

1989-1991 Guest Researcher, Developmental Pharmacology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland

1991-1998 Visiting Associate, Laboratory of Molecular Pharmacology, National Cancer Institute, National Institutes of Health, Bethesda, Maryland

**Employment History**

Academic Appointments

1998-2008 Assistant Professor, Department of Biochemistry and Molecular Biology,

University of Maryland School of Medicine

2007-present Member, Program in Oncology, University of Maryland School of Medicine

2008-2009 Assistant Professor, Department of Radiation Oncology,

University of Maryland School of Medicine

2009-2014 Associate Professor, Department of Radiation Oncology,

University of Maryland School of Medicine

2014-present Tenured Associate Professor, Department of Radiation Oncology,

University of Maryland School of Medicine

**Professional Society Membership**

1992-present American Association for Cancer Research

1992-2003 American Association for the Advancement of Science

1999-present Cosmos Club, Washington, D.C.

2000-2010 New York Academy of Sciences

**Honors and Awards**

1983-1985 Canadian Studentship. Studentship from the Medical

Research Council of Canada and the Clinical Research Institute of Montreal

1986-1988 Canadian Studentship. Studentship from the Canadian Heart Foundation

1988 International fellowship. Visiting fellowship from the National Research Council of Canada

1989 Canadian Fellowship. Postdoctoral fellowship from "Fonds de la

Recherche en Santé du Québec."

1990 International Fellowship. Among the first awardees of a Long-term postdoctoral fellowship from the Human Frontier Science Program Organization

1991 International Fellowship. Visiting associate Fellowship from the National Institutes of Health

1994 Co-author on the second most cited paper in biology in 1994. Science Watch, September 1994, p.5; “ Kastan, M., B., Zan, Q., El-Deiry, W., S., Carrier, F., Jacks, T., Walsh, W., V., Plunkett, B., S.,Vogelstein, B., Fornace, A.J.,Jr. A Mammalian cell cycle checkpoint pathway utilizing p53 and *GADD* 45 is defective in Ataxia Telangiectasia. Cell 71: 587-597, 1992.”

1995 Federal Technology Transfer Award from the National Institutes of Health, National Cancer Institute.

1996 Certificate of Appreciation for being a mentor in the student and teacher internship program 1995-1996 from the Howard Hughes Medical Institute, Montgomery County Public Schools and the National Institutes of Health.

1998, 1999 Intramural Award entitled*:” Induction of Mammalian RNA-Binding Proteins”*, from the office of the Dean, University of Maryland, School of Medicine.

2001 Grad. Student Research Day Award 2nd Place in Molecular Biology (Dony Maiguel)

2002 Brigid Leventhal Award from the American Association for Cancer Research (Myoung Sook Kim). Inhibition of histone deacetylase increases Topoisomerase Inhibitors efficiency in cells clinically resistant to Top2 inhibitors. Myoung Sook Kim, Mellissa Blake, Jin Baek and France Carrier

2002 Grad. Student Research Day Award 2nd Place in Molecular Biology (Dony Maiguel)

2003 Grad. Student Research Day Award 1st Place in Molecular Biology (Jing Lin)

2003 Grad. Student Research Day Award 2nd Place in Molecular Biology (Dony Maiguel)

2004-2016 Biography selected for publication in Who’s Who in America

2004-2016 Biography selected for publication in Who’s Who in the World

2004-2007 National Kidney Foundation. Post-doctoral fellowship (Devulapalli Chakravarty)

2004 Consultant for “Defined Health” on Colorectal Cancer.

2011 Granted Eligibility to VA Merit Awards

2011 Interviewed by Genetic Engineering & Biotechnology News for an article on “Value of PCR Amplified as it moves to Clinic”. Vol 31 (4), p.20-23, feb.15, 2011

2013 Invited Guest Editor: Molecular and Cellular Pharmacology

### **Administrative Service**

Institutional Service

* 1. Course director, departmental seminars: MBIC713 “Biochemistry Seminar”

1. Lead Search committee to buy a departmental phosphorimager

1999-2003 Juror for Cell and Molecular Biology Honor’s paper

1. Medical School Council

2000-present Juror for graduate research day

2000-present Interview Medical School Students applicants

2001 Member: Search committee for Pediatric Department Faculty (NMR)

2001-2002 Member: Search committee for Biochemistry Department Faculty (Fluorescence)

* 1. Course director, departmental seminars: MBIC713 “Biochemistry Seminar”,

2004-2005 Co-Investigator on a Letter of Intent (LOI) for a Phase I Clinical Trial approved by NCI. Principal Investigator: Dr. Douglas Ross: *Phase I Clinical Pharmacokinetic and Translational Trial of SAHA in combination with Arabinosyl Cytosine and Etoposide for patients with relapsed and/or Refractory Acute Leukemias and Myelodysplastic Syndromes*

2008-2013 Member: Governing committee to recruit graduate students for the Biochemistry Department

2011-present Juror for Medical Student Research Day

2013-present Member: Governing committee to recruit graduate students for the Graduate program in Molecular Medicine

2016 Reviewer for Nathan Schnaper Intern Program in Translational Cancer Research (NSIP)

### National and International Service

1992-present Regularly review papers for the following scientific journals:” Cancer Research (4-5 papers/year), Carcinogenesis (1 paper/yr), Mutation Research (1 paper/ yr), International Journal of Radiation Oncology (1 paper/yr),

Oncogene (1 paper/ 2 yr), Molecular Cancer Therapeutics (1 paper/ 2yr), FEBS Letters (1 paper/ 2yr), Radiation Research (1 paper/ 2 yr), Cell Growth & Differentiation ( 1 paper/ 2 yr), Radiation Oncology ( 1 paper/ 2yr), International Journal of Cancer ( 1 paper/ 2 yr), Experimental Cell Research (1 paper/ 2 yr), DNA Repair (1 paper/ 2 yr), European Journal of Cancer ( 1 paper./ 3 yr), Molecular and Cellular Biology (1 paper/ 5 yr), British Journal of Cancer ( 1paper/ 5 yr), Blood,(1 paper/ 5 yr), Leukemia ( 1paper/ 5yr), Environmental Health Perspectives ( 1 paper/ 5 yr)

2004 Invited grant reviewer for Association for International Cancer Research, United Kingdom

2005 Invited grant reviewer for the U.S. Civilian Research and Development Foundation (CRDF)

2005 Invited grant reviewer for the National Aeronautics and Space Administration (NASA)

2005 Elected Council for Gerson Lehrman Group’s Healthcare Council

Invited grant reviewer for the National Science Foundation

Invited grant reviewer for Cancer Research UK

Invited grant reviewer forU.S. Civilian Research & Development

Foundation (CRDF)

2008 Elected Editorial Board Member of “The Open Enzyme Inhibition Journal”

2012 ACS Institutional Research grant reviewer

2013-2016 Elected to the Editorial board of Cancer Research

2013 Editorial board member J. Clinical Oncology and Research

2014 Editorial board member Austin Journal of Radiation Oncology and Cancer

NIH Study sections

2008 NIH Grant reviewer: Stage 1 (mail) review of the ARRA RC1 Challenge Grant applications. ZRG1 OTC-K (58) in Oncology-2 Translational Clinical IRG (OTC).

2011 NIH Grant reviewer: ZRG1 OBT-B(02) study section: Cancer Biology and Therapy

2012 NIH Grant reviewer: Special Emphasis Panel focused on “Fellowship: Oncological Sciences” NIH (ZRG1 FO9B-P (20) June 28

2012 NIH Grant reviewer: Special Emphasis Panel focused on “Fellowship: Oncological Sciences” NIH (ZRG1 FO9B-P (20) November 19-20

NIH Grant reviewer: Special Emphasis Panel focused on “Fellowship: Oncological Sciences” NIH (ZRG1 FO9B-P (20) March 19-20

NIH Grant reviewer: National Cancer Institute (NCI) Special Emphasis Panel to review applications in response to PAR-12-144, “NCI Small Grants Program for

Cancer Research (NCI Omnibus R03)” and PAR-12-145, “NCI Exploratory/Developmental Research Grant Program (NCI Omnibus R21).”Cancer Etiology/Genetics and Prevention, March 28-29

2013 NIH Grant reviewer: Special Emphasis Panel focused on “Fellowship: Oncological Sciences” NIH (ZRG1 FO9B-P (20) October 29-29

2014 NIH Grant reviewer: NCI Omnibus R03 and R21 for “Cancer Genetics”, March 27

2014 NIH Grant reviewer: Special Emphasis Panel focused on “Fellowship: Oncological Sciences” NIH (ZRG1 FO9B-P (20) July 10-11

2014 NIH Grant reviewer: Tumor Cell Biology (TCB), October 15-16

2014 NIH Grant reviewer: NCI Omnibus R03 and R21 for “Cancer Genetics”, November 13

2015 NIH Grant reviewer: NIH Special Emphasis Panel F09A-D Fellowships: Oncology, Nov 5-6, San-Francisco, CA

2016 NIH Grant reviewer: The NCI Predoctoral to Postdoctoral Fellow Transition Award” (F99/K00), June 23-24, Gaithersburg, MD

2016 NIH Grant reviewer: NCI Small Grants Program for Cancer Research (NCI Omnibus R03), June 20-21, Gaithersburg, MD

2016 NIH Grant reviewer: Special Emphasis Panel. ZRG1 F09A-R (20)L

November 14-15, Washington DC

##### Teaching Service

###### Medical Student Teaching

* 1. Lecturer, Cell and Molecular Biology: (Protein Translation I and II, Eukaryotic

Genes Regulation, Protein Targeting)

Development of teaching material including 4 lectures handouts and exam questions

4, 2h/session, 150 students

Offered every fall semester

1998-2008 Leader, Small Group Sessions in Cell and Molecular Biology

3, 2h/session, 15-20 students/group

Development of teaching material (questions, exercises)

Offered every fall semester

1999-2007 Leader, Conferences in Cell and Molecular Biology

7, 2h/session (led 4 sessions) 20-25 students

Development of teaching material on Cystic Fibrosis

Conference Organizer (Cystic Fibrosis)

Offered every fall semester

2008-2009 Lecturer, Radiation Oncology residents: Signal Transduction.

1, 1h lecture, 5-10 students

Offered every spring semester

2008-present Lecturer, Radiation Oncology residents:

In Service questions

Review questions on Signal Transduction, Radio protection, Cancer Biology, Therapeutic ratio, radiobiology with residents

1, 1h lecture, 5-10 residents

Offered every fall

2009-present Lecturer, Radiation Oncology residents: Signal Transduction, Cancer Biology, Types of DNA damage, Cellular radiosensitivity

4, 1h lecture, 5-10 students

Offered every fall and spring semester

### 2012-summer Lecture, *Colloquium of Science* for the OSR Summer Research Training Programs. Frontiers in Critical Thinking Education

15 min, talk. Translational research CSN

2012-present Lecturer, Radiation Oncology residents: Introduction to radiobiology

1, 1h lecture, 5-10 students

Offered every fall and spring semester

2013 Lecturer, Radiation Oncology residents: Molecular Biology Techniques

1h lecture, 5-10 students

Offered every spring semester

2015 Foundations of Research and Critical Thinking (FRCT)

1, 1h small group leader, 20-25 students

### Graduate Teaching

1. Lecturer MBIC608 “Introduction to Biochemistry and Molecular Biology” : (Cell

cycle controls),

2, 2h/sessions (25-30 students)

Lecturer MMCB601 “Molecular and Cell Biology I: (Signal transductions) “,

2, 2h/sessions (25- 30 students)

1998-2001 Course director MBIC713 “Biochemistry Seminar”,

36,1h/session (led 36 sessions) 15-20 students,

Offered every semester

1999-2005 Course director MBIC708 “Graduate Biochemistry Seminar”,

11, 2h/sessions (led 4-5 sessions) 10-15 students

Offered every semester

1998-2010 Lecturer MBIC703 “Advanced Molecular Biology: (Transcription, Signal Transduction, RNA

metabolism)

* 1. Course director MBIC713 “Biochemistry Seminar”

36, 1h/session (led 12 sessions) 15-20 students

Offered every semester

2008-2011 GPILS 601

Mentor: DNA repair, 6 students (1h)

Mentor: MicroRNA, 6 students (1h)

1h students’ presentations (10-15 students)

Offered every fall

2011-present GPILS 655 Cancer Biology: (2 lectures)

Research to clinic:Central Nervous System: Translational CNS

Basic principles of radiobiology

1h lecture, 10-15 students

Offered every fall

2011-2013 GPILS Core course: Special Topic

Epigenetic composition and predisposition of cancer cells to histone deacetylase inhibitor sensitization.

1h lecture, 20-30 students

Offered every fall

2012-present GPILS 655 Cancer Biology: (2 lectures)

Research to clinic: Central Nervous System: Radiobiology

Basic principles of radiobiology

1h lecture, 10-15 students

Offered every fall

2012-present GPLS 624: Lecturer: ONCOPHARMACOLOGY

Stress-activated RNA binding proteins: Cancer Drug Development

1.5 h lecture

1.5h papers discussion

Offered every fall

2016 GPLS 790: Lecturer: Advanced Cancer Biology

Epigenetic and Cancer

1.5 h lecture

1.5h papers discussion

Offered every spring

List of Trainees

* 1. Rachel Winter (advisory committee, thesis reader)
  2. Malkanthi Mudannayake (advisory committee, thesis reader)
  3. Chun Tang- Graduate student (rotation, co-advisor)

1999-2001 Zhongsen Zhang (advisory committee member, thesis reader)

* 1. Dr. Chonglin Yang- Post DoctoralFellow, Current Position: University of Colorado, Post-Doctoral Fellow
  2. Dony A. Maiguel- Graduate student (mentor, advisory committee, thesis reader)

Current Position: Johns Hopkins University, Post-Doctoral Fellow

1999-2004 William M. Mahoney, Jr. (advisory committee member, thesis reader)

1999-2004 Kristen Vallely (rotation, advisory committee member)

* 1. Dr. Myoung Sook Kim- Post-Doctoral Fellow, Current Position: Johns Hopkins University, Post- Doctoral Fellow

2000-2005 Shardell Hawkins (advisory committee member, thesis reader, defense 2008)

Joseph Markowitz (advisory committee member, thesis reader, defense 3/2005)

2001 Jing Lin- Graduate student (co-advisor and advisory committee member, oral 5/4/05, thesis reader, defense 12/1/06)

Ruiqing Yang- Graduate student (co-advisor and advisory committee member, thesis reader, defense 4/25/06)

Paul Wilder (advisory committee member, thesis reader, defense 9/2004)

Grace Kim (advisory committee member, defense 2006)

Brian K. Connor (advisory committee member)

Xiaodong Mu (advisory committee member)

Dr. Devulapalli Chakravarty- Post Doctoral Fellow

Jingsong Zhu (advisory and thesis committee member, defense 7/28/04)

1. Keith Inman (thesis committee member, thesis reader)

2002-2006 Eizadora T. Yu (advisory committee member, thesis reader, defense 3/21/2006)

Michele Vitolo (advisory committee member, defense 11/05/04)

Dr. Zhe Yan- Post Doctoral Fellow (current; post-doc, Univ. Colorado)

Dr. Qinyuang Yang – Post Doctoral Fellow (Proteomics Inc; current post-doc UMB)

2004 Hyakzin Cha (thesis committee member, defense 7/15/04)

2006 Zhishi Guo (thesis committee member)

2007 Adam Pierce (rotation, thesis committee member)

2007-2010 Dr. Narasimharao Nalabothula – Post-doctoral fellow

2008-2011 Dr. Qinyuang Yang – Research Associate

2009 Jateh Major, under grad- summer

2010 Laura Jenkins, med school student-summer

2010-2011 Eric Diss – Graduate Student, Master (mentor, advisory committee, thesis reader)

2011 William White, med school student-summer

2011 Parth Sawhney, molecular medicine graduate student- rotation

##### 2012, 2014 Duc Nguyen, med school student-summer (Radiation Oncology Research Scholarship

##### Award)

2012 Jetaime Ross, rotating student (Ph.D., Biochemistry)

2012-present Elizabeth Chang, rotating student (mentor Ph.D., Molecular Medicine)

2013 Tierra Johnson, rotating student (Ph.D., Molecular Medicine)

2014 Megan Moorer, rotating student (MS, Molecular Medicine)

2014-present Palak Parekh-Post-doctoral fellow

2014 Lena McLaughlin (member committee; qualifying exam for Molecular

Medicine PhD

2014 [Tzvi Urszuy](https://webmail.umaryland.edu/src/read_body.php?mailbox=INBOX&passed_id=85198&startMessage=1&where=FROM&what=Darcel), summer intern/student (Molecular Medicine, PhD program)

2014-2015 Teresa Smith, summer under graduate (high school student) and fall/winter school project

2015 Jin Xu, thesis committee (Biochemistry)

##### 2015 David Wisniewski, thesis committee (Molecular Medicine)

2014-2016 Katie Leonard, Advisory committee T-32

2015 Philip Smith (MD/PhD) Molecular Medicine rotation

2016 Carlos Echeverria (Nathan Schnaper Summer Intern)

##### Grant Support

### **Active Grants:**

Lead and contact PI (30% effort) 07/01/13-06/30/18

NIH: NCI MPIs RO1 CA177981-01

David Weber co-PI (10% effort)

Rational targeting of protein translation for cancer treatments

Total Direct Costs: $1,037,500

Total Direct + Indirect Costs: $1,592,565

NIH: NIH/NCI 1RO1CA107331-01 07/01/11-6/30/16

Role: Co-Investigator

PI: David J. Weber, PhD

Title: Restoration of tumor suppression activity in malignant melanoma

This project aims at developing small molecules targeting the interaction of S100B with p53 in melanoma cells. Nuclear magnetic resonance techniques are used in combination with computer-aided drug design (CADD) and cellular and molecular biology techniques.

NIH: R25CA186872-01A1 09/01/15-08/31/20

Role: Mentor

PI: Bret Hassel

The Nathan Schnaper Intern Program in Translational Cancer Research

The overarching goal of this grant is to inspire and train the next generation of cancer researchers and physicians. Towards this goal, the grant provides funds to expand the educational, laboratory and clinical training components of this longstanding program. In addition, funds are provided for housing and transportation to successfully recruit a diverse and highly qualified pool of applicants from across the US.

NIH: 1 P30 CA 134274-01 08/08/06 – 07/31/17

Role: Member

PI: Kevin Cullen

Title: University of Maryland Greenebaum Cancer Center Support Grant

This is an NCI Cancer Center Support Grant. The Cancer Center Support Grant (CCSG) provides the resources and infrastructure to facilitate the coordination of interdisciplinary programs across a broad spectrum of research from basic laboratory research to clinical investigation to population science.

NIH: T32CA15427406 07/01/16-06/30/21

Role: Mentor

PI: Toni Antalis

Title: Training Grant in Cancer Biology

The Program in Cancer Biology launched in 2011 trains postdoctoral and predoctoral trainees for careers in cancer research. The program is based in the University of Maryland Marlene and Stewart Greenebaum Cancer Center (UMGCC), and includes UMGCC faculty from multiple basic science and clinical departments - the majority based on the University of Maryland Baltimore (UMB) campus, with others from the University of Maryland College Park (UMCP) and the University of Maryland Baltimore County (UMBC)

**Pending Grants**:

Sept 15, 2016 Principal Investigator (25% effort)

VA Merit Award

Total Direct Costs: $1,056,120

Title: Chemopotentiation by Low Dose Fractionated Radiation Therapy for disseminated intra-abdominal cancers

Oct 1st, 2016 Principal Investigator (20% effort)

NIH: NCI RO1

Total Direct Costs: $1,250,000

Title: Therapeutic exploitation of DUOX2 induction for the treatment of locally advanced and/or metastatic tumors of the gastrointestinal (GI) tract.

###### **Completed Grants:**

NIH

1999-2004 Principal Investigator (30% effort)

Radiation induced RNA binding proteins in mammalian cells.

NIH/NIGMS, #RO1 GM57827

Total Direct Costs Awarded: $711,280

Total Indirect Costs Awarded: $342,197

2001-2003 Principal Investigator (10% effort)

Development of basic tools for cancer research.

NIH/NCI, STTR 1R41CA90082-01A1

Total Direct Costs Awarded: $129,500

Total Indirect Costs Awarded: $28,373

2003-2007 Co-Investigator (5 % effort)

Principal Investigator: Dr. David J. Weber

Structure and function studies of S100 proteins and p53

NIH/GM R01 GM58888-08 (Weber)

Total Direct Costs Awarded: $761, 656

Total Indirect Costs Awarded: $369,403

Role: I designed biological studies to complement the structural

analysis and supervised a post-doctoral fellow. I also wrote papers

and rebuttal on biological questions related to the project.

2007-2012 Co-Investigator (5% effort)

Principal Investigator: Dr. David J. Weber

Restoration of Tumor Suppression Activity in Malignant Melanoma

NIH/NCI 1RO1CA107331-01A3 (Weber)

Total Direct Costs Awarded: $1,625,000

Total Indirect Costs Awarded: $780,000

Role: I designed biological studies to complement the structural analysis and supervised a post-doctoral fellow. I also wrote papers and rebuttal on biological questions related to the project.

2007-2011 Principal Investigator (30 % effort)

Biomodulation of anticancer drugs targeting DNA

NIH/NCI, RO1 1CA116491-01

Total Direct Costs: $456,000

Total Indirect Costs: $228,000

Contracts

11/01/12-06/30/13 Co-Investigator (50% effort)

Principal Investigator: Dr. Zeljko Vujaskovic

U.S. Department of Health and Human Services’ Biomedical Advanced

Research and Development Authority (BARDA)

Total Direct Costs Awarded: $32,000

Role: I supervised one technician and ensure that experiments were performed on

scheduled. I also participate in biweekly conference call with BARDA to assess progress.

Foundations

01/00-12/02 Co-Investigator (10% effort)

Principal Investigator: Dr. David J. Weber

Studies of interaction between p53 and S100 proteins

ACS, RPG-00-040-01-CCG

Total Direct Costs Awarded: $360,000

Total Indirect Costs Awarded: $90,000

Role: I designed biological studies to complement the structural

analysis and supervised a graduate student. I also wrote papers

and rebuttal on biological questions related to the project.

05/03-04/04 Principal Investigator (5% effort)

New Mechanisms to activate p53 function in AT cells

A-T Children’s Project

Total Direct Costs Awarded: $35,000

Total Indirect Costs Awarded: $0

07/04-06/06 Principal Investigator (10% effort)

Hypertonic stress-mediated GADD45 mRNAs

National Kidney Foundation

Post-Doctoral Fellowship to Devulapalli Chakravarty

Total Direct Costs Awarded: $40,000

Total Indirect Costs Awarded: $0

07/04-06/07 Co-Investigator (10% effort)

Principal Investigator: Dr. David J. Weber

Small molecule inhibitors of S100 proteins

ACS, RPG-00-040-01-CCG

Total Direct Costs Awarded: $450,000

Total Indirect Costs Awarded: $74,700

Role: I designed biological studies to complement the structural

analysis and supervised a graduate student. I also wrote papers

and rebuttal on biological questions related to the project.

03/05-02/06 Principal Investigator (10% effort)

Down Regulation of Nucleophosmin (NMP):A new mechanism to activate p53 in AT cells.

A-T Children’s Project

Total Direct Costs Awarded: $35,050

Total Indirect Costs Awarded: $0

04/09-03/10 Mentor (2% effort)

Principal Investigator: Dr. Qingyuan Yang, Research Associate

Role of S100A4 in African American breast cancer cells metastasis.

ACS Institutional Research Fund for Junior Faculty

Total Direct/Indirect Costs Awarded: $30,000

Role: I discuss experiments and help design procedures.

Industries

08/10-08/11 Principal Investigator (1% effort)

Studies on hedgehog antagonists

Selexagen Therapeutics, San Diego, CA

Total Direct Costs Awarded: $5,000

University of Maryland

07/98-06/99 Principal Investigator (30% effort)

Start up package

DRIF

Total Direct Costs Awarded: $100,000

07/99-06/00 Principal Investigator (30% effort)

Start up package

DRIF

Total Direct Costs Awarded: $ 80,000

07/03-06/04 Principal Investigator (1% effort)

Bridge funding from UMB Biochemistry department

DRIF

Total Direct Costs Awarded: $10,000

Total Indirect Costs Awarded: $ 0

07/03-06/04 Principal Investigator (1% effort)

Bridge funding from UMB School of Medicine

Dean’s Office

Total Direct Costs Awarded: $25,000

Total Indirect Costs Awarded: $ 0

01/06/10- 12/31/10 Principal Investigator (5% effort)

Epigenetic markers to monitor cancer progression and predict clinical response to anticancer drugs in human colorectal cancer”.

UMBGCC administrative supplement

Total Direct Costs Awarded: $13,500

10/01/10-09/30/11 Principal Investigator (5% effort)

Radiosensitizing effect of Histone Deacetylase Inhibitors for the treatment of Glioblastoma multiform with LDFRT in combination with RT

Department of Radiation OncologyPilot Project Program

Total Direct Costs Awarded: $40,000

05/12-08/12 Mentor (1% effort)

Duc Nguyen (recipient)

University of Maryland Summer Fellowship Award

Role: Supervise the medical student, discuss and design experiments with him and write papers

11/01/11-10/31/13 Co- Investigator (5 % effort)

Principal Investigator: Dr. Navesh Sharma

A Phase II Study of Low-Dose Fractionated Whole abdomen radiation

therapy (LDFRT) as a chemosensitizer in patients with peritoneal

carcinomatosis from gastric or gastroesophageal junction primary

adenomacarcinomas.

Department of Radiation Oncology

Pilot Project Program

Total Direct Costs Awarded: $15,000

Role: I designed pre-clinical experiments and supervise one medical school student and one graduate student to perform experiments.

09/11/12-03/11/14 Co-Investigator (5% effort)

Principal Investigators: Drs. Curt Civin and David Weber

UMGCC pilot grant application to support the development of a multi PI grant application

Total Direct Costs Awarded: $62,500

Role: I am co-investigator on Aim 3 with Dr. Ron Gartenhaus to evaluate the evaluate the role of ER and genotoxic stress on miR34 regulation

01/01/15-6/30/16 Co- Investigator (5 % effort)

Principal Investigator: Dr. Michael Chuong

American Cancer Society Institutional Research Grant

Title: Novel *in situ* tumor vaccination using a radiation “booster shot” following conventionally-fractionated radiotherapy in combination with an anti-PD-L1 monoclonal antibody to enhance anti-tumor immune effects on both irradiated and unirradiated pancreatic tumors

Total Direct Costs Awarded: $30,000

Role: I help design pre-clinical experiments, provide laboratory space and supervise one graduate student to perform experiments.

01/01/15-6/30/16 Co-Investigator (5% effort)

Principal Investigator: Dr. Michael Chuong

Department of Radiation Oncology Seed grant Program

Title: Abscopal Effect of Booster Radiotherapy

Total Direct Costs Awarded: $17,500

Role: I help design pre-clinical experiments, provide laboratory space and supervise one graduate student to perform experiments.

**Patents, Inventions & Copyrights**

1994Patent: U.S. No. 5,858,679

European patent # WO 9411533

Title: Methods for determining the presence of functional p53 in mammalian cells. Addendum: Development and use of Gadd45 antibody. Licensed by Santa Cruz Biotech., Santa Cruz, California.

2006 European Patent: 03723795.5-2123-US0308678

Title: Inhibitors of the S100-p53 protein-protein interaction and method of inhibiting cancer employing the same.

2008 Australian patent Number 2003230705 issued September 11, 2008 for the above mentioned patent.

2011 Patent: U.S. No. 8,053,477 issued on November 8, 2011.

Authors: David J. Weber, Alex MacKerell, Joseph Markowitz, France Carrier

Title: Inhibitors of the S100-p53 Protein-Protein Interaction and Method of Inhibiting Cancer Employing the Same.

2013 Patent: U.S. No. 8,367,340 issued on February 5, 2013.

Authors: France Carrier, Narasimharao Nalabothula

Title: Diagnostic tools to predict the efficiency of anticancer drug treatment targeting chromatin

DNA or enzymes acting on the DNA

2016 U.S. Non-Provisional Patent application No. 15/084,459

Author: France Carrier

Title: Compositions and Methods for Treating Cancer by Rational Targeting of Protein Translation;

submitted March 29th, 2016

**Publications**

**Peer Reviewed Journal Articles** \* = Primary Author; # = Senior Author,

1. Therien, H.M., Gruda, J., Carrier, F. Interaction of filamentous actin with isolated liver plasma membranes. Eur. J. Cell Biol., 35 (1), 112-121, 1984. PMID: 6489356.

2. Thibault, G., Garcia, R., Carrier,F., Seidah,N.G., Lazure, C., Chretien,

M.,Cantin, M., Genest, J. Structure-activity relationships of atrial natriuretic factor (ANF). 1. Natriuretic activity and relaxation of intestinal smooth muscle. Biochem. Biophys. Res.Commun. 125 (3), 938- 946, 1984. PMID: 6542779.

3. Carrier, F\*., Thibault, G., Schiffrin, E.L., Garcia, R., Gutkowska, J., Cantin, M., Genest, J. Partial characterization and solubilization of receptors for atrial natriuretic factor in rat glomeruli. Biochem. Biophys. Res. Commun. 132 (2), 666-673, 1985. PMID: 2998377.

4. Gauquelin, G., Garcia, R., Schiffrin, E.L., Carrier, F., Thibault, G., Cantin, M., Gutkowska, J. Des récepteurs à l'ANF au niveau des glomérules dans l'hypertension réno-vasculaire chez le rat. Arch. Mal. Coeur 80e année,1987, no 6, pp.966-969. PMID: 2821950.

5. Gauquelin, G., Garcia, R., Carrier, F., Cantin, M., Gutkowska, J., Thibault, G., Shiffrin, E.L. Glomerular ANF receptor regulation during changes in sodium and water metabolism. Am.J. Physiol. 254, F51-F55, 1988. PMID: 2827518.

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36. Nguyen, D.M., Parekh, P.R., Chang, E.T., Sharma, N., Carrier, F. DUOX2: The key player for hyper-radiosensitivity in gastric cancer cells with low dose fractionation radio therapy (LDFRT). In: Proceedings of the 106th Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia (PA): AACR; 2015. Abstract nr 1805.

37. Chang, E.T., Parekh, P.R., Yang, Q., Carrier, F. HDAC9 and 11 contribute to UV resistance in melanoma cells. In: Proceedings of the 106th Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia (PA): AACR; 2015. Abstract nr 2116.

38. Smith, T., Parekh, P.R., Chang,E.T., Chuong, M., Carrier, F. Chemopotentiation by low dose fractionated radiation therapy in colon cancer cells. In: Proceedings of the 106th Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia (PA): AACR; 2015. Abstract nr 3307.

39. Chang, E.T., Parekh, P., Yang, Q., Carrier, F. [Regulation of HIF-1α by hnRNP A18 contributes to tumor promotion under hypoxic conditions](http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=7f90c01d-bdf7-4edd-8a63-df57a4ed1698&cKey=5b183a77-e795-4585-b474-26491cf698c3&mKey=%7b1D10D749-4B6A-4AB3-BCD4-F80FB1922267%7d). In: Proceedings of the 107th Annual Meeting of the American Association for Cancer Research; 2016 Apr 16-20; New Orleans (LA): AACR; 2016. Abstract nr 2796.

40. Parekh, P.R., Chang, E., Yang, Q., Carrier, F. [hnRNP A18: an emerging novel target for cancer therapy](http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=fc591eed-9d55-4549-8726-f1c1b56a65c7&cKey=9b78f2cb-780c-4025-bf7b-46172f049aaa&mKey=%7b1D10D749-4B6A-4AB3-BCD4-F80FB1922267%7d). In: Proceedings of the 107th Annual Meeting of the American Association for Cancer Research; 2016 Apr 16-20; New Orleans (LA): AACR; 2016. Abstract nr 5081.

International

1. Weber, D., Markowitz, J., MacKerell, A., Carrier, F#. Restoration of wild -type p53 in malignant melanoma. 16th European Organisation for Research and Treatment of Cancer-NCI-AACR. Symposium on Molecular Targets and Cancer Therapeutics. *Geneva, Switzerland*, 28 September-1 October, 2004. EJC Supplements, Vol.2, No. 8, September, 2004.

2. Kim, M.S., Maiguel, D., Chakravarty, D. and Carrier, F#. Biomodultation of molecular targets for cancer treatments. 9th World Congress on Advances in Oncology and 7th International Symposium on Molecular Medicine. Invited Speaker, October 14-16, 2004. International Journal of Molecular Medicine, Vol. 14, Supplement 1, S5, 103, 2004. *Crete, Greece.*

3. Carrier, F\*., Chakravarty, D. Levels of Nucleophosmin can set a threshold for p53 activation in Ataxia Telangiectasia cells. The 2005 International Workshop on Ataxia-Telangiectasia, ATM and the DNA Damage Response, June 8-11, 2005, *Lake Maggiore*, *Italy*, p.68.

4. Carrier, F\*., Chakravarty, D. New mechanisms to activate p53 functions in Ataxia Telangiectasia cells. Proceedings of the 9th International Wolfsberg meeting on Molecular Radiation Biology/Oncology, p .56, 2005. Invited Abstract. Abstract selected for oral presentation. June 18-20, 2005, *Ermatingen*, *Switzerland*.

5. Chakravarty, D, Pierce, A, Carrier, F\*. A functional ATM is required to prevent constitutive phosphorylation of DNA damage response proteins in AT fibroblasts. International Workshop on Ataxia-Telangiectasia and ATM. *Banff, Canada*, 2006.

6. Nalabothula, N., Chakravarty, D. and Carrier, F. Molecular understanding of Histone Deacetylase Inhibitors (HDACIs) efficiency in cancer cells.1st International Conference on Drug Design and Discovery. Dubai, *United Arabs Emirates*, Feb 2008.

7. Devulapalli, C, Nalabothula, N, Pierce, A and Carrier, F\*. Over expression of Nucleophosmin Ser125 and Nucleolin compromises the p53 response to DNA damage in AT fibroblasts. International Workshop on Ataxia-Telangiectasia. *Otsu, Japan*, April, 2008.

8. Nalabothula, N., Chakravarty, D. and Carrier, F.Understanding the intrinsic chromatin properties of cancer cells to improve therapeutic approaches. World Cancer Congress, *Shanghai, China*, June, 2008.

**Major Invited Speeches**

Local (University of Maryland, Baltimore)

1. Carrier, F.*Molecular mechanisms involved in the mammalian cellular stress-response.*

University of Maryland at Baltimore, Biochemistry and Molecular Biology Department, Baltimore, Maryland. April, 1997.

2. Carrier, F. *Understanding S100B inhibitory effects on p53 transcriptional activity by NMR spectroscopy*. Molecular and Cell Biology Retreat, Baltimore, MD. Understanding S100B inhibitory effects on p53 transcriptional activity by NMR spectroscopy. December, 2001.

3. Carrier, F. *Molecular strategies to counter carcinogenesis*. Seminar speaker. Department of Biochemistry and Molecular Biology, School of Medicine, University of Maryland, Baltimore. January, 2006.

4. Carrier, F. *Targeting HAT and AT for cancer therapies*. Invited speaker. Department of Pharmaceutical Sciences, School of Pharmacy, University of Maryland, Baltimore. February, 2006.

5. Carrier, F. *New mechanism to activate ATR in Ataxia Telangiectasia cells.* RNA Interest group, University of Maryland, Baltimore. MD.

6. Carrier, F. *HAT and AT tricks to counter carcinogenesis*. Grand Rounds: Hematology/Oncology, University of Maryland, Baltimore. Dec. 22, 2008, *Postponed.*

7. Carrier, F. *Molecular strategies to counter carcinogenesis*. Department of Radiation Oncology, University of Maryland, Baltimore. Feb. 09,2009.

8. Carrier, F. 1) *Inherent epigenetic characteristics predispose cancer cells to Histone*

*Deacetylase Inhibitors (HDACIs) sensitization to anticancer drug treatments.  
2) Functional Significance for an hnRNP A18 RNA signature motifs in the 3'UTR of DNA damage responsive transcripts.*  Gene Regulation, Marlene and Stewart Greenebaum Cancer Center, University of Maryland, Baltimore, March 11, 2010.

9. Carrier, F. Cancer cells’ epigenetic composition and predisposition to HDACi sensitization. Molecular and Structural Biology, Marlene and Stewart Greenebaum Cancer Center, University of Maryland, Baltimore, Sept 24, 2010.

10. Carrier, F. *Take your HAT off to improve anticancer therapies*. Grand Rounds: Hematology/Oncology, University of Maryland, Baltimore. Sept. 27, 2010.

11. Carrier, F. *Molecular Strategies to counter carcinogenesis*. Department of Veterinary Medicine and Virginia- Maryland Regional College of Veterinary Medicine at the University of Maryland, *College Park*, Sept 30, 2010.

12. Carrier, F. *Translational Research in Radiobiology and beyond*. Department of Radiation Oncology, University of Maryland, Baltimore, January 9th, 2012.

13. Carrier, F. *Rational Targeting of Protein Translation for cancer research*. Free Radical and Genome Instability Interest Group Seminar. University of Maryland, June 4th, 2013.

14. Carrier, F. Basic and Translational Cancer Research. Bnos Yisroel High School Science Club, Baltimore, MD. May 15, 2016

National

1. Carrier, F. *Role of the tumor suppressor p53 in the mammalian genotoxic-stress*

*response.* Igen INC., Rockville, Maryland, *USA*. August, 1994.

2. Carrier, F. *Genotoxic-stress response in mammalian cells.* JohnsHopkinsUniversity, School of Public Health and Hygene, Toxicology Department, Baltimore, Maryland, *USA*. January, 1995.

3. Carrier, F. *Genotoxic-stress response in mammalian cells: Induction of a Gadd45-related protein and TARRNA binding proteins.*GeorgetownUniversity, Biochemistry Department, Washington, D.C., Maryland, *USA*. May, 1995.

4. Carrier, F. Protein Kinases as Mediators of the Genotoxic- Stress Response. National Institute on Aging, Baltimore, Maryland, *USA*. July, 1996.

5. Carrier, F. *Molecular mechanisms involved in the cellular stress-response to ionizing radiation.* National Cancer Institute, Bethesda, Maryland, *USA*. December, 1996.

6. Carrier, F.*Roles of Nucleolin and Nucleophosmin in the genotoxic stress-response*

National Institute of Aging, Baltimore, MD, *USA*. January, 2003.

1. Devulapalli, C., Nalabothula, N., Pierce, A., Carrier, F. New Mechanisms to restore p53 activation in Ataxia Telangiectasis cells. Oral presentation. American Association for Cancer Research Annual Meeting: *San Diego, CA*. April 15, 2008.

8. Carrier, F. Invited lecture: The inherent epigenetic makeup of cancer cells predisposes them to HDAC inhibitors sensitization to conventional anticancer therapies.

Cambridge Healthtech Institute’s Eight International Discovery on Target

*Boston,* MA, November 2-4, 2010.

9. Carrier, F. Invited lecture:Exploiting an unexpected value of PCR-technology to predict anticancer drugs efficiency. Cambridge Healthtech Institute’s Biomarker Assay Development,*SanDiego,*CA, January 31st-Feb. 2nd, 2011.

International

Carrier, F.*Involvement of the Ah receptor in the regulation of the Cyp1a1 gene.*SherbrookeUniversity, Sherbrooke, Quebec, *Canada*. Department of Biochemistry. April, 1992.

2. Carrier, F. “*Biomodulation de cibles moleculaire pour le traitement du cancer”*.

Institut Bergonie, Laboratoire de Pharmacologie des Agents Anticancereux, Bordeaux, *France*. November, 2004.

3. Carrier, F.*Biomodulation of molecular targets for cancer treatments*.9th World Congress on Advances in Oncology and 7th International Symposium on Molecular Medicine. November, 2004. Crete, *Greece.*

4. Carrier, F. *New mechanisms to activate p53 functions in Ataxia Telangiectasia cells.* 9th international Wolfsberg Meeting on Molecular Radiation Biology/Oncology 2005, June, 2005. Ermatingen, *Switzerland.*

5. Carrier, F. Invited Lecturer for the 10th World Congress on Advances in Oncology and 8th International Symposium on Molecular Medicine, Crete, *Greece*. Invitation declined. November, 2005.

6. Carrier, F. Invited Speaker. Molecular understanding of Histone Deacetylase Inhibitors (HDACIs) efficiency in cancer cells.1st International Conference on Drug Design and Discovery. Dubai, *United Arabs Emirates*, Feb 2008.

7. Carrier, F. Invited Speaker. Understanding the intrinsic chromatin properties of cancer cells to improve therapeutic approaches. BIT Life Sciences 1stWorld Cancer Congress, *Shanghai, China*, June, 12-15, 2008.

8. Carrier, F. Co-Chair: “Chromatin regulation and cancer” session and Invited Speaker. Inherent Epigenetic Characteristics Predispose Cancer Cells to Histone Deacetylase Inhibitors (HDACIs) Sensitization to Anticancer Drug Treatments. BIT Life Sciences 3rd World Cancer Congress, Singapore, June 24, 2010.

9. Carrier, F. Chair: “Novel Technologies for Drug Discovery and Biotherapy: Case Study of Major Diseases” and Invited Speaker. Taking advantage of unexpected value of PCR-technology to predict anticancer drugs efficiency. Biopharmaceutical Summit, Frankfurt, Germany, August 8, 2013.

10. Carrier, F.: “The heterogenous ribonucleoprotein A18 (hnRNP A18) promotes tumor growth by increasing protein translation of selected transcripts in cancer cells in response to cellular stress.” Dynamic DNA and RNA Structures in Damage Responses & Cancer Conference, Cancun, Mexico, 22-25 February 2016.

1. Carrier, F.: Chair: Session 2 “International conference on Nuclear Medicine and Radiation

Therapy” and Invited Speaker. Chemopotentiation by Low Dose Fractionated Radiation Therapy.

Cologne, Germany, July 14-15, 2016