

CURRICULUM VITAE

ROBERT C. SMART

William Neal Reynolds Distinguished Professor
Department of Biological Sciences and Toxicology Program
Director, Center for Human Health and the Environment
North Carolina State University
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EDUCATION

University of Massachusetts at Dartmouth
North Dartmouth, Massachusetts
Biology, B.S. 1977

University of Michigan
Ann Arbor, Michigan
Toxicology, Ph.D. 1984

Roche Institute of Molecular Biology
Department of Molecular Oncology
Laboratory of Experimental Carcinogenesis and Metabolism
Postdoctoral Fellow 1984-1986

RESEARCH INTERESTS

Major Interests include: i) identification and characterization of genes/signaling pathways that are determinants of susceptibility to cancer particularly as it relates to gene-environment interactions, ii) programing programmed cell death: understanding how cells make decisions to live or undergo apoptosis in response to DNA damage and tumor stress. The ability to influence these programmed cell death decisions has important implications for tumor development and tumor regression. These studies are focused on CCAAT/enhancer binding protein transcription factors (C/EBPs) and long noncoding RNAs, iii) use of genetically modified mice to characterize the function of genes in cellular processes involving cell cycle regulation, differentiation, apoptosis, DNA damage response and cancer pathogenesis.

<http://smartlab.wordpress.ncsu.edu>

EMPLOYMENT/AFFILIATIONS

2013-Present	William Neal Reynolds Distinguished Professor Department of Biological Sciences North Carolina State University
2012	North Carolina Agromedicine Institute Faculty Affiliate
2012	William Neal Reynolds Distinguished Professor Department of Environmental and Molecular Toxicology North Carolina State University

2010-Present	Director, Center for Human Health and the Environment NIEHS-funded Environmental Health Science Core Center https://chhe.research.ncsu.edu North Carolina State University
2006-2015	Member, Center for Comparative Medicine and Translational Research Oncology Research Core College of Veterinary Medicine North Carolina State University
2004-2013	Director of Graduate Programs Department of Environmental and Molecular Toxicology North Carolina State University
2001-Present	Adjunct Faculty Member Integrated Toxicology and Environmental Health Program Duke University
2001-Present	Director, NIH Training Program/Grant in Molecular Pathways to Pathogenesis in Toxicology https://tox.sciences.ncsu.edu/degree-programs/graduate-program/niehs
2000-Present	Member of Genomic Sciences Graduate Program North Carolina State University
1997-2013	Professor Department of Environmental and Molecular Toxicology North Carolina State University
1996-Present	Member of Comparative Biomedical Sciences Graduate Program Pharmacology and Cell Biology Programs College of Veterinary Medicine North Carolina State University
1996-2011	Director of Molecular and Cellular Toxicology Graduate Study Option Department of Environmental and Molecular Toxicology North Carolina State University
1991-1996	Associate Professor Department of Toxicology North Carolina State University
1989-1993	Director, NIH Training Program/Grant in Environmental and Biochemical Toxicology
1989-2008	Member of Nutrition Faculty North Carolina State University
1988-Present	Member of Biotechnology Faculty North Carolina State University
1988-1993	Director of Graduate Programs Department of Toxicology & Toxicology Program North Carolina State University
1986-1991	Assistant Professor Department of Toxicology North Carolina State University
1984-1986	Postdoctoral Fellow (Advisor Allan H. Conney, Member, NAS) Department of Molecular Oncology Laboratory of Experimental Carcinogenesis and Metabolism Roche Institute of Molecular Biology

1980-1984 Nutley, New Jersey
Predoctoral Fellow – Toxicology (Advisor Vincent Zannoni, Professor)
Department of Pharmacology
University of Michigan Medical School
Ann Arbor, Michigan

1978-1980 Biochemist
New England Nuclear Corporation
Boston, Massachusetts

HONORS AND AWARDS

William Neal Reynolds Distinguished Professor (2012)
Alumni Outstanding Research Award (2017)
NC State Research Leadership Academy (2017)

PROFESSIONAL SOCIETIES

American Association for Cancer Research
Society of Toxicology
North Carolina Regional Chapter of the Society of Toxicology

PROFESSIONAL ACTIVITIES

SCIENTIFIC SOCIETIES, EDITORIAL BOARDS AND MEETING ORGANIZER

2018 Epigenetics, Environment and Human Health, Second Annual CHHE Symposium, Organizing Committee

2017 NIEHS Environmental Health Science Core Centers Meeting – Member Organizing Committee, Emory University

2017 Toxic Metals – From Exposures and Model Systems to Human Populations, First Annual CHHE Symposium, Organizing Committee

2015 Center for Human Health and the Environment – Retreat – Contemporary Art Museum, Raleigh, NC

2010 Evaluating the Health Effects to Local Communities of Confined Animal Feeding Operations (CAFOs) Co-Organizer, McKimmon Conference Center, NC State University

2009 New Insights into Skin Homeostasis and Carcinogenesis Symposium, Co-Chair Society of Toxicology Baltimore MD

2008-09 Reviewed/site visited Toxicology Program at Gulf Medical College, Ajman, United Arab Emirates

2007 Determinants of Genome Stability and Human Disease Symposium, Co-Organizer, Friday Center, Chapel Hill, NC

1996-1998 Member of the Editorial Advisory Board for Skin Pharmacology

1996 Nominating Committee, Carcinogenesis Specialty Section, Society of Toxicology

1996 Program Committee, American Association for Cancer Research, 87th Annual Meeting

1996 Member of the Editorial Advisory Board for Oncology Reports

1993-1994 President, North Carolina Regional Chapter of the Society of Toxicology

1992-1993 Vice President, North Carolina Regional Chapter of the Society of Toxicology

1988-1990	Councilor, North Carolina Regional Chapter of the Society of Toxicology
1987-1989	Board of Directors, Genotoxicity and Environmental Mutagen Society
1985-1994	Member of the Editorial Advisory Board for <u>The Journal of Drug Metabolism and Disposition (ASPET)</u>

SERVICE TO OTHER UNIVERSITIES

2018-present	Member, External Advisory Board, Duke University, Program in Environmental Health and Toxicology
2017	Chair, Program Review Team for the UNC Chapel Hill Curriculum in Toxicology, University of North Carolina at Chapel Hill
2017-present	Member External Advisory Board, NIH RCMI Center for Health Disparities Research U54 grant, North Carolina Central University
2010-2012	Duke University Environmental Health Science Core Center Member External Advisory Board

GRANT REVIEW PANELS

2018	National Institute of Environmental Health Sciences, P30 awards
2016	National Institute of Environmental Health Sciences, R25 awards, Chair
2016	National Institute of Environmental Health Sciences, Board of Scientific Councilors, Ad Hoc Member, Intramural Program Review
2015	National Institutes of Health, Systemic Injury by Environmental Exposure Study Section, Ad Hoc member
2012	National Institute of Environmental Health Sciences K awards Panel
2011	National Toxicology Program Technical Reports Review Panel
2010	National Institutes of Health, Special Emphasis Panel
2009	National Institute of Environmental Health R13 Review Panel
2009	National Institute of Environmental Health Sciences – Tenure and Promotion Committee, Ad Hoc Member
2009	National Institutes of Health, RC1 grant reviews
2003-2007	National Institute of Environmental Health Sciences, Environmental Health Science Review Committee, Member
2002	National Institute of Environmental Health Sciences – Tenure and Promotion Committee, Ad Hoc Member
2001	National Institute of Environmental Health Sciences Special Emphasis Panel, Review of Program Project Grant Application, <i>Ad hoc</i> member
2001	CIIT Centers for Health Research, Scientific Advisory Committee, <i>Ad hoc</i> member
2000	National Cancer Institute, Laboratory of Cellular Carcinogenesis and Tumor Promotion, Reviewer of Intramural Program and Member of Site Visit Team
1999	National Institute of Arthritis and Musculoskeletal and Skin Diseases, <i>Ad hoc</i> Reviewer
1997	National Institute of Environmental Health Sciences, SBIR-Phase 1
1997	National Institute of Environmental Health Sciences, RFP Review

1997	National Institute of Environmental Health Sciences, Training Grant and Conference Grant Review
1995	American Cancer Society, <i>Ad hoc</i> reviewer
1994	National Institute of Environmental Health Sciences, <i>Ad hoc</i> Reviewer
1992	National Institute of Environmental Health Sciences, RFP Review - Chairman
1992	National Institute of Environmental Health Sciences, SBIR-Phase 1 and 2
1991	National Institute of Environmental Health Sciences, SBIR-Phase 1
1991	National Institute of Environmental Health Sciences, Sixth Annual Report on Carcinogens
1990	National Institute of Environmental Health Sciences, RFP Review
1990	National Institute of Environmental Health Sciences, Promotion/Tenure <i>Ad hoc</i> member
1990	National Institute of Environmental Health Sciences, Special Study Section, Training Grant Supplements

UNIVERSITY COMMITTEES

2018-present	Chair, Faculty Advisory Committee, Molecular Education, Technology and Research Innovation Center (METRIC)
2107-present	Member, Professor of Distinction Review Committee
2018-2019	Chair, Research Leadership Academy
2017-2018	Chair-Elect, Research Leadership Academy
2017-present	Member, Search Committee, High-Dimensional Integration of Biological Systems Interdisciplinary Faculty Cluster
2014-2016	Member, Growth of Doctoral Education Implementation Team
2013-2017	Member, University Research Committee
2012-present	Leader, CFEP Environmental Health Sciences Cluster
2012-2013	Chair, Search Committee, Cluster Hire in Environmental Health Sciences

COLLEGE COMMITTEES (COS, CALS, CVM, CED)

2018-present	Member, University Scholars Committee, COS
2018	Member, Search Committee, Dept. Head, Molecular Biomedical Sciences, CVM
2018-2021	Member, Advisory Board NIH R25 Environmental Health Research Experiences for Teachers in High-Poverty Schools: A Professional Development Program CED
2017-present	Member, Internal Stakeholder Advisory Committee, Plant Science Initiative CALS
2014-2015	Member, Dept of Biological Sciences Search Committee for Head, COS
2012	Member, Search Committee, Director Center for Comparative Medicine and Translational Research CVM
2011-2013	Member, CALS Graduate Studies Committee
2009-2011	Member, CALS Search Committee for Cluster Hire Plants for Human Health Institute
2008-2009	Member, CALS Search Committee for Associate Dean and Director of Research

2008-2010	Member, CALS Reappointment, Tenure and Promotion Committee
2005-2012	Member, CALS Biological Resources Facility Advisory Committee
1998-2000	Member, CALS Research Committee

DEPARTMENT AND TOXICOLOGY PROGRAM COMMITTEES

2108-	Member, Advisory Committee to Department Head
2014-2015	Member, Advisory Committee to Department Head
2002-Present	Chair, Admissions Committee, Toxicology Program
2007-Present	Animal Welfare Liaison, Toxicology Program
2007-Present	Member, Graduate Student Progress Committee
2007	Member, Toxicology Faculty Search Committee
2004-2013	Chair, Masters of Toxicology Student Committees
2004-2006	Member, Graduate Program and Curriculum Committee
2003-2004	Member, Recruitment Committee
2001-2004	Chair, Written Exam Committee
2001	Chair, Faculty Search Committee, Molecular Toxicology
2002	Chair, Faculty Search Committee, Toxicogenomics
1998-2002	Chair, Recruitment Committee
1998-2001	Member, Admissions Committee
1997-2001	Member, Toxicology Building Committee
1997-1998	Chair, Toxicology Website Committee
1997	Chair, Curriculum Committee
1988	Chair, Faculty Search Committee Toxicology

FACULTY MENTORING

Current Mentoring

Michael Bereman, Biological Sciences, COS (Environmental Health Sciences Cluster)
 Michael Cowley, Biological Sciences, COS (Environmental Health Science Cluster) (NIH NIEHS K22 Award Chair, Advisory Committee K22ES027510 9/2017-8/2020)
 Jonathan Hall, Biological Sciences, COS
 Jane Hoppin, Biological Sciences, COS (Environmental Health Sciences Cluster)
 Catherine Hoyo, Biological Sciences, COS (Environmental Health Sciences Cluster)
 Heather Shive, Population Health and Pathobiology, CVM (NIH K01 Award Co-Mentor K01OD021419 3/2016-2/2021)
 Jennifer Luff, Population Health and Pathobiology, CVM (NIH K01 Award Co-Mentor K01OD023219 9/2017-6/2022)

Former Mentoring

Shobhan Gaddameedhi, Biochemistry and Biophysics UNC-CH NIH K99/R00 Award
 Yu-Ying He, Dermatology, University of Chicago (NIEHS R01 Outstanding New Environmental Health Scientist (ONES) Award)
 Scott McCulloch, Environmental and Molecular Toxicology, (NIEHS R01 Outstanding New Environmental Health Scientist (ONES) Award) (CALs)
 Jun Ninomiya-Tsuji, Environmental and Molecular Toxicology (CALs)
 Yoshi Tsuji, Environmental and Molecular Toxicology (CALs)

ACTIVE RESEARCH FUNDING

7/15-6/20	NIH-T32-ES07046 Molecular Pathway to Pathogenesis in Toxicology, PI and Training Grant Director R.C. Smart (\$1,352,000 Total Costs)
4/15-3/20	NIH-P30-ES025128 Center for Human Health and the Environment (\$6,127,354 Total Costs) PI R.C. Smart
6/16-5/21	NIH-R01-ES024471 Role of Long Intergenic Noncoding RNA in UVB-induced Apoptosis and Skin Cancer (\$1,679,000 Total Costs) PI R.C. Smart
11/17-10/19	NIH-R21-ES029353 Assessing Impact of Drinking Water Exposure to GenX in the Cape Fear River Basin North Carolina (\$430,000) PI J.A. Hoppin Co-I R.C. Smart
5/18-8/18	NIH-R01-ES024471 Administrative Supplement for Undergrad Summer Student PI R.C. Smart (\$18,000) PI R.C. Smart

PENDING RESEARCH FUNDING

4/19-3/21	NIH-R21 Impact of Dermal Metal Exposure on Allergen-Induced Lung Disease (\$418,000) PI J.C. Bonner, Co-I R.C. Smart
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PAST RESEARCH FUNDING

4/09-3/16	NIH-R01-GM068812 TAK1 Signaling in Tissue Homeostasis, PI Jun Ninomiya-Tsuji, Co-I R.C. Smart
7/10-6/15	NIH-T32-ES07046 Molecular Pathways to Pathogenesis in Toxicology PI and Training Grant Director R.C. Smart
7/07-6/15	NIH-R01-CA46637 Role of C/EBP in Cell Survival and Neoplasia PI R.C. Smart
7/10-6/13	NIH-F32-ES Role of C/EBP α in Genome Stability and Tumor Progression PI J.R. Hall, Co-I R.C. Smart
1/05-12/11	NIH-R01-ES012473 Regulation and Function of C/EBP in UVB Responses PI R.C. Smart
6/10-12/11	NIH-R01-ES012473-S1 Recovery Act Funds for Administrative Supplements Providing Summer Research Experiences for Students and Science Educators PI R.C. Smart
7/03-6/10	NIH-T32-ES07046 Training in Biochemical and Environmental Toxicology. Training Grant Director-R.C. Smart
2/01-1/07	NIH-R01-CA46637- Role of C/EBPs in Squamous Differentiation and Neoplasia. PI R.C. Smart
7/96-6/01	NIH-R01-ES08127- Mechanism of Pesticide Mirex-Induced Tumor Promotion. PI - R.C. Smart
5/96-4/01	NCI-R01-CA46637 Diacylglycerols and Multistage Carcinogenesis PI - R.C. Smart
3/93-8/95	MITRE Corporation-N78245- Role of Signal Transduction Pathways in Chemical Carcinogenesis. PI-R.C. Smart
3/93-2/96	NIH-P01-ES00044 - Project # 3Mechanisms of Pesticide-Induced Multistage Carcinogenesis PI R.C. Smart
7/92-6/94	American Cancer Society-CN-19CD- Endogenous Diacylglycerols and the Alteration of Protein Kinase C in Tumors. PI-R.C. Smart
7/90-6/92	American Cancer Society-CN19AB- sn-1,2-Diacylglycerols: Endogenous Tumor Promoters? PI-R.C. Smart
5/90-4/96	NCI-R29-CA46637- Diacylglycerols as Endogenous Tumor Promoters. PI-R.C. Smart

5/89-12/93	NIH-T32-ES07046 Training in Biochemical and Environmental Toxicology, PI and Training Grant Director-R.C. Smart
7/88-6/90	American Cancer Society-BC-644- Cutaneous Metabolism, Penetration and Tumorigenicity of sn-1,2-Dioctanoylglycerol. PI-R.C. Smart
3/88-2/93	NIH-P01-ES00044- Project#5- Mechanisms of Organochlorine Pesticide-Induced Tumor Promotion PI-R.C. Smart

INVITED PRESENTATIONS

2108	East Carolina University, Symposium on Multidisciplinary Research
2018	American Society for Photobiology Biennial Meeting, Tampa FL
2017	Research Triangle Environmental Health Collaborative
2017	University of Cincinnati, Center for Environmental Genetics
2017	Brody School of Medicine, ECU Dept. of Pharmacology and Toxicology
2016	Brody School of Medicine, ECU Department of Dermatology
2016	NC State, Department of Molecular and Structural Biochemistry
2016	Robinson Institute, University of Adelaide, Australia
2016	University of Wollongong, Australia
2016	Center for Marine Sciences and Technologies, NC State
2015	University of North Carolina-Charlotte Dept. of Biology
2015	North Carolina Central University, Cancer Center
2104	University of Surrey, UK
2013	Genetics and Environmental Mutagenesis Society Spring Symposium, Mechanisms of Environmental Carcinogenesis, US EPA, RTP, NC
2012	Stewards of the Future; Research for Human Health and Global Sustainability, McKimmon Center, North Carolina State University
2012	Careers in Toxicology Workshop, NC Biotechnology Center, RTP, NC
2011	North Carolina State University Department of Molecular and Structural Biochemistry
2010	International Skin Carcinogenesis Conference, University Park, PA
2009	University of North Carolina, Chapel Hill - Center of Environmental Health and Susceptibility
2009	National Institute of Environmental Health Sciences, Laboratory of Molecular Carcinogenesis
2009	New Insights into Skin Homeostasis and Carcinogenesis Symposium, Co-Chair and Speaker Society of Toxicology, Baltimore, MD
2008	Mechanisms of Toxicity – Toxicant Risk Factor Interactions in Chronic Disease, Gordon Conference, Lewiston, ME
2008	National Institute of Environmental Health Sciences, Laboratory of Molecular Toxicology and Pharmacology, RTP, NC
2007	Determinants of Genome Stability and Human Disease Symposium, Co-Organizer and Speaker, Friday Center, Chapel Hill, NC
2006	Columbia University, Department of Dermatology, New York, NY
2006	National Institute of Environmental Health Sciences, Laboratory of Pharmacology and Chemistry and Laboratory of Molecular Toxicology, RTP, NC
2005	University of Kentucky, Toxicology Program, Lexington KY

2004 National Institute of Environmental Health Sciences, Laboratory of
Molecular Carcinogenesis, RTP, NC

2004 CIIT Centers for Health Research, RTP, NC

2004 University of Kentucky, Dept. of Molecular and Biomedical
Pharmacology, Lexington, KY.

2004 Ohio Valley Society of Toxicology Annual Meeting, Lexington KY

2004 National Cancer Institute, Laboratory of Protein Dynamics and
Signaling, Frederick, MD

2001 Duke University, Integrated Toxicology Program, Durham, NC

2001 National Institute of Environmental Health Sciences, Receptors
Mechanisms Group, RTP, NC

2000 Imperial Cancer Research Fund (ICRF), London, UK

2000 AstraZeneca, Macclesfield, Cheshire, UK

2000 National Institute of Environmental Health Sciences, Molecular
Carcinogenesis, RTP, NC

2000 National Institute of Occupational Health and Safety, Laboratory of
Molecular Toxicology, Morgantown, WV

1999 National Institute of Environmental Health Sciences, Laboratory of
Pharmacology, RTP, NC

1998 Colorado State University; Center for Environmental Toxicology and
Technology, Fort Collins, CO

1998 National Cancer Institute, Laboratory of Comparative
Carcinogenesis, Frederick, MD

1998 Second Intercontinental Meeting of Hair Research Societies,
Washington, DC

1998 National Cancer Institute, Eukaryotic Transcriptional Regulation
Group, Frederick, MD.

1998 North Carolina State University, Department of Biochemistry

1997 Annual Conference for Reproductive Biologist in the Research
Triangle, Friday Center, University of North Carolina at Chapel Hill,
NC

1997 Procter and Gamble Company, Sharon Woods Technical Center,
Cincinnati, OH

1997 North Carolina State University, Department of Poultry Science,
Raleigh, NC

1997 C.L. Davis Seminar, Central South Division, CVM, North Carolina
State University

1996 Experimental Skin Carcinogenesis: Second International
Conference, M.D. Anderson Cancer Center, University of Texas

1996 National Institute of Environmental Health Sciences, Cell Biology
Group, RTP, NC

1996 National Cancer Institute, Eukaryotic Transcriptional Regulation
Group, Frederick, MD.

1996 Bowman Gray School of Medicine, Wake Forest University,
Comprehensive Cancer Center, Winston-Salem, NC

1996 Bowman Gray School of Medicine, Wake Forest University,
Department of Dermatology, Winston-Salem, NC

1996 Society of Toxicology Meeting, Speaker, De-Regulation of Ras Signaling by Toxic Injury, Anaheim, CA

1995 American Association for Cancer Research Meeting, Co-chairman, Tumor Progression: Intracellular and Extracellular Signals. Toronto Canada

1994 Therapeutic Potential of Biological Antioxidants, Linus Pauling Institute of Science and Medicine, Tiburon, CA

1994 National Institute of Environmental Health Sciences, RTP, NC

1993 Chemical Institute of Toxicology, RTP, NC

1993 North Carolina State University, Dept. of Biochemistry Raleigh, NC

1993 University of Tennessee, Department of Pathobiology, Knoxville, TN

1992 University of North Carolina, Curriculum in Toxicology, Chapel Hill, NC

1992 Texas A & M University, Toxicology Program, College Station, TX

1992 American Association for Cancer Research Meeting, Co-chairman, Signal Transduction and Tumor Promotion, San Diego, CA

1992 Rutgers University, Department of Chemical Biology and Pharmacognosy, Piscataway, NJ

1991 National Institute of Environmental Health Sciences, Receptor Mechanisms Series, Research Triangle Park, NC

1991 MITRE Corporation, McLean, VA

1991 Duke University, Integrated Toxicology Program, Durham, NC

1990 National Cancer Institute Symposium, Vitamin C: Biological Function and Relation to Cancer, Bethesda, MD

1990 U.S.-Japan Meeting, Pesticides and the Future: Toxicological Studies of Risks and Benefits, Rockville, MD

1989 National Institute of Environmental Health Sciences - Cell Biology Group, Research Triangle Park, NC

1989 Medical College of Virginia, Department of Pharmacology & Toxicology, Richmond, VA

1989 University of Michigan, Department of Environmental & Industrial Health, Ann Arbor, Michigan

1988 University of North Carolina, Carcinogenesis Series, Chapel Hill, NC

1988 Burroughs Wellcome Symposium, Dermal Toxicology. North Carolina State University, Raleigh, NC

1987 Environmental Protection Agency, Research Triangle Park, NC

Teaching Experience

Past Lecturer in the following courses within the Toxicology Program, Dept of Biological Sciences, and Dept. of Molecular Biomedical Sciences: Principles of Pharmacology, Fundamentals of Toxicology, Molecular and Biochemical Toxicology, Responsibilities in Science and Cancer Biology Course. Former lecturer Molecular Biology of the Cell, Dept. of Biochemistry; Former Course Coordinator; Molecular and Biochemical Toxicology 1992-2006, Chemical Carcinogenesis 1990-2006

Graduate Student Training

Ph.D. Students

Current Ph.D. students for which I am chair;

Currently a member on students Ph.D. committee

Sarah Quinlan, Comparative Biomedical Sciences

Former Ph.D. students for which I was chair; (Current position)

Kevin J. Mills (1991) Toxicology (Research Scientist, Procter & Gamble Company)

Laura A. Hansen (1992) Toxicology (Professor, Creighton University Medical School)

Glenda J. Moser (1993) Toxicology (Division Manager, Integrated Laboratory Systems, NC)

David M. Owens (1996) Toxicology (Associate Professor, Columbia University Medical School)

Tae Won Kim (1996) Toxicology (Executive Director, Toxicology ISIS Pharmaceuticals)

Hye-Sun Oh (1997) Toxicology Senior Principal Scientist, Boehringer Ingelheim Pharmaceuticals)

HuiQin Wang (2000) Environ. and Molecular Toxicology (Scientist, Novartis Institute)

Michael E. Vianna (2000) Environ. and Molecular Toxicology (Toxicologist, Dynamic Corp NC)

Karen L. Porter (2001) Environ. and Molecular Toxicology (Toxicologist, US Army)

Minsub Shim (2003) Environ. and Molecular Toxicology (Asst Professor, Univ. of South Carolina)

Kyungsil Yoon (2004) Environ. and Molecular Toxicology (Senior Researcher, National Cancer Center, S Korea)

Sarah J. Ewing (2007) Comparative Biomedical Sciences (Dept Head, Associate Professor

Gannon University)

Kari D. Loomis (2008) Functional Genomics Program (Associate Professor, Curry College, MA)

Elizabeth Thompson (2009) Environ. and Molecular Toxicology (Lecturer, NC State)

Rakesh Ranjan (2009) Environ. and Molecular Toxicology (Scientist II, Bayer CropScience, NC)

John S. House (2011) Environ. and Molecular Toxicology (Bioinformatician, NC State NC)

Hann Tam (2016) Toxicology Program (Post-doc, NC State, NC)

Zachary Messenger (2018) Toxicology Program (Post doc)

Former Ph.D. students for which I was co-chair;

James Christensen (1998) Toxicology (Chief Scientific Officer, Mirati Therapeutics)

Christopher Saranko (1998) Toxicology (Principal, GeoSyntec Consultants)

Lynn Crosby (1999) Toxicology (Toxicologist, US FDA)

Theresa Allio (1999) Toxicology (Project Manager, US FDA)

John Couse (2004) Toxicology (Vice President, Taconic Biosciences)

Leslie Tompkins (2007) Environ. and Molecular Toxicology (Toxicologist, US FDA)

Elizabeth MacKenzie (2007) Environmental and Molecular Toxicology (Medical

Writer/Editor ETSI)

Kiros Hailemariam (2007) Environ. and Molecular Toxicology (Toxicologist, US FDA)

Wei-Chun Huangfu (2007) Environmental and Molecular Toxicology (Assistant

Professor, Taipei Medical University)

Former Ph.D. students for which I was a committee member

Mark Wolfe - Toxicology

Richard T. Miller - Microbiology, Pathology and Parasitology CVM

Jingwu Lee - Anatomy, Physiological Sciences and Radiology CVM

Hongfei Li - Anatomy, Physiological Sciences and Radiology CVM
Scott Knowles - Toxicology
Michael Lawton - Toxicology
Vickie Burnette - Toxicology
Leon King - Toxicology
Donald Keleman - Poultry Science
Christina Johnson - Microbiology
Nong-Hoon Choe - Anatomy, Physiological Sciences and Radiology CVM
Patricia Chalada - Toxicology
Ladda Tangbangnukul - Toxicology
Lynn Blalock - Toxicology
Kenneth Rudo - Toxicology
Darrick Sauls - Food Science
Javier Cisneros - Comparative Biomedical Sciences
David Draper - Microbiology
Fang He - Comparative Biomedical Sciences
Debra Piddington - Microbiology
Michelle Rau - Toxicology Duke University
Jennifer O'Brien - Microbiology
Muriel Saulnier - Comparative Biomedical Sciences
Pierre Bushel - Bioinformatics
Jin-Ah Park - Environmental and Molecular Toxicology
Christopher Brynczka - Environmental and Molecular Toxicology
Scott Morefield - Functional Genomics
Amber Goetz - Environmental and Molecular Toxicology
Cheng Wan - Molecular and Structural Biochemistry
Leah Rose - Comparative Biomedical Sciences
Steve Simmons - Environmental and Molecular Toxicology
Everado Macias - Comparative Biomedical Sciences
Cheng Wan – Molecular and Structural Biochemistry
Jennifer Zurney - Microbiology
Randall Reynolds - Comparative Biomedical Sciences
JaeYoung Kim - Environmental and Molecular Toxicology
Peter Broglie - Environmental and Molecular Toxicology
Christopher Sistrunk - Comparative Biomedical Sciences
Larissa Williams - Environmental and Molecular Toxicology
Joshua Warren - Statistics
Tae-Hyung Kim – Comparative Biomedical Sciences
Xian Wang – Comparative Biomedical Sciences
Huiying Zhang - Environmental and Molecular Toxicology
Susan Fetics – Molecular and Structural Biochemistry
Bo Wen Huang – Environmental and Molecular Toxicology
Brian Sayers – Environmental and Molecular Toxicology
Ellen Glista – Environmental and Molecular Toxicology
Sun Hye Kim – Comparative Biomedical Sciences
Sam Suarez- Environmental and Molecular Toxicology
Zi Wang – Statistics/Bioinformatics
Renee Beardslee – Environmental and Molecular Toxicology

Kelly Shipkowski – Environmental and Molecular Toxicology
Kimberly Herman – Environmental and Molecular Toxicology
SungHyun Lee – Comparative Biomedical Sciences
Alicia Simmons – Environmental and Molecular Toxicology
Rachel Spreng – Bioinformatics
Yosuke Sakamachi – Toxicology Program
Rachel Spreng – Bioinformatics
Yosuke Sakamachi – Toxicology Program
Gina Hilton – Toxicology Program
Katherine Duke – Toxicology Program
Mark Ihrle – Toxicology Program
Vassili Koupryanov – Comparative Biomedical Sciences Program

Master of Science and Master of Toxicology Students

Current MS and MTOX students for which I am chair;

Former MS/MTOX students for which I was chair;

Catherine Crawford – MS Toxicology
Anne Marie Colapietro - MS Toxicology
Glenda Moser – MS Toxicology
Kevin J. Mills – MS Toxicology
Theodor A. Zainel – MS Toxicology
Dominique Williams – MS Environmental and Molecular Toxicology
JianLi Huang – MTOX Environmental and Molecular Toxicology
Sabrinia Rodgers – MTOX Environmental and Molecular Toxicology
Abbey Wood – MTOX Environmental and Molecular Toxicology
Brent Gilbert – MTOX Environmental and Molecular Toxicology
Michelle Oh – MTOX Environmental and Molecular Toxicology
Lamont Booker – MTOX Environmental and Molecular Toxicology
Supriya Vasudevan – MTOX Environmental and Molecular Toxicology
Victoria Youn – MTOX Environmental and Molecular Toxicology
Johnathan Owens – MTOX Environmental and Molecular Toxicology
Rose Verhoeven – MTOX Environmental and Molecular Toxicology
September Mihaly- MTOX Environmental and Molecular Toxicology
Angela Hofhine- MTOX Environmental and Molecular Toxicology
Kirsten Amaral – MTOX Environmental and Molecular Toxicology
Devin Pastoor – MTOX Environmental and Molecular Toxicology
Sarah Koury-MTOX Environmental and Molecular Toxicology
Olga Sichevaya-MTOX Environmental and Molecular Toxicology

Former MS student for which I was a committee member;

Fred Stratton de Pollok - Marine, Earth and Atmospheric Science
Hope Hart - Microbiology
Lee Briley - Poultry Science
Karen Porter - Toxicology
Linda Schmidt - Toxicology
Darryl Stuart - Toxicology

Dana Danger - Toxicology
Scott Knowles – Toxicology

Postdoctoral Students

Current Postdoctoral Students

Former Postdoctoral Students (Current Position)

Sharon A. Meyer (Associate Professor, University of Louisiana at Monroe)
Boumdiene Bouzahzah (Research Scientist, Albert Einstein School of Medicine)
Joan Rivers (unknown)
Audrey Goodell (Director, Clinical Development, Salix Pharmaceuticals)
Jackie Akunda (Director, Pre-Clinical Safety, Novartis Phrama)
Sanjay Chanda (Senior Vice President, Anacor Pharmaceuticals)
HyeSun Oh (Senior Principal Scientist, Boehringer Ingelheim Pharmaceuticals)
Sonyun Zhu (Senior Scientist, NC State University (retired))
Kyungsil Yoon (Senior Researcher, National Cancer Center, South Korea)
Wei Ding (Scientist, USFDA)
Feng Zhu (Assistant Professor, Hormel Institute, University of Minnesota)
Jonathan Hall (Research Assistant Professor, NC State University)

PUBLICATIONS

JOURNAL ARTICLES:

- Smart, R.C. and V.G. Zannoni. DT-Diaphorase and peroxidase influence the covalent binding of the metabolites of phenol, the major metabolite of benzene. *Mol. Pharmacol.* **26**:105-111, 1984.
- Smart, R.C. and V.G. Zannoni. Effect of ascorbate on covalent binding of benzene and phenol metabolites to isolated tissue preparations. *Toxicol. Appl. Pharmacol.* **77**:334-343, 1985.
- Smart, R.C. and V.G. Zannoni. The effect of dietary ascorbate on covalent binding of benzene to bone marrow and hepatic tissue in vivo. *Biochem. Pharmacol.* **35**:3180-3182, 1986.
- Smart, R.C., M-T. Huang, R.L. Chang, J.M. Sayer, D.M. Jerina and A.H. Conney. Disposition of the naturally occurring antimutagenic plant phenol, ellagic acid and its synthetic derivatives, 3-O-decylellagic acid and 3,3'-di-O-methylellagic acid. *Carcinogenesis* **7**:1663-1667, 1986.
- Smart, R.C., M-T. Huang, R.L. Chang, J.M. Sayer, D.M. Jerina, A.W. Wood, and A. H. Conney. Effect of ellagic acid and 3-O-decylellagic acid on the formation of benzo[a]pyrene-derived DNA adducts in vivo and on the tumorigenicity of 3-methylcholanthrene in mice. *Carcinogenesis* **7**:1669-1675, 1986.
- Smart, R.C., M-T. Huang, and A.H. Conney. sn-1,2-Diacylglycerols mimic the effects of 12-O-tetradecanoylphorbol-13-acetate in vivo by inducing biochemical changes associated with tumor promotion in mouse epidermis. *Carcinogenesis* **7**:1865-1870, 1986.
- Huang, M-T., R.C. Smart, P.E. Thomas, C.B. Pickett and Y.H. Lu. Characterization of purified DT-diaphorase from liver cytosol of 3-methylcholanthrene-treated rats. *Chemica Scripta* **27A**:49-54, 1987.
- Smart, R.C., M-T. Huang, Z.T. Han, M.C. Kaplan, A. Focella and A.H. Conney. Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase activity, DNA synthesis, and tumor promotion in mouse skin by ascorbic acid and ascorbyl palmitate. *Cancer Res.* **47**:6633-6638, 1987.
- Zannoni, B.G., J.I. Brodfuehrer, R.C. Smart and R.L. Susick. Ascorbic acid, alcohol and environmental chemicals. *Third International Conference on Vitamin C*. New York Acad. Sci., **498**:364-388, 1987.

- Smart, R.C., M-T. Huang, N.A. Monteiro-Riviere, C-Q. Wong, K.J. Mills and A.H. Conney. Comparison of the effect of sn-1,2-didecanoylglycerol and 12-O-tetradecanoylphorbol-13-acetate on cutaneous morphology, inflammation and tumor promotion in CD-1 mice. *Carcinogenesis* 9:2221-2226, 1988.
- Huang, M-T., R.C. Smart, C-Q. Wong and A.H. Conney. Inhibitory effect of curcumin, chlorogenic acid, caffeic acid and ferulic acid on tumor promotion in mouse skin by 12-O-tetradecanoylphorbol-13-acetate. *Cancer Res.* 48:5941-5946, 1988.
- Mills, K.J. and R.C. Smart. Comparison of epidermal protein kinase C activity, ornithine decarboxylase induction, and DNA synthesis stimulated by TPA or dioctanoylglycerol in mouse strains with differing susceptibilities to TPA-induced tumor promotion. *Carcinogenesis* 10:833-838, 1989.
- Moser, G.J. and R. C. Smart. Hepatic tumor promoting organochlorine pesticides stimulate protein kinase C *in vitro*. *Carcinogenesis*, 10:851-856, 1989.
- Smart, R.C., K.J. Mills, L.A. Hansen and A.H. Conney. Synthetic lipid second messenger, sn-1,2-didecanoylglycerol: A complete tumor promoter in mouse skin. *Cancer Res.* 49: 4455-4458, 1989.
- Hansen, L.A., N.A. Monteiro-Riviere and R.C. Smart. Differential down regulation of protein kinase C by TPA and diacylglycerol: Association with epidermal hyperplasia and tumor promotion. *Cancer Res.* 50:5740-5745, 1990.
- Smart, R.C. and C.L. Crawford. The effect of ascorbic acid and its synthetic lipophilic derivative ascorbyl palmitate on phorbol ester-induced skin tumor promotion in mice. *Amer. J. Clin. Nutr.* 54:1266s-1273s 1991
- Moser, G.J., S.A. Meyer and R.C. Smart. The chlorinated pesticide, mirex is a novel non-phorbol ester tumor promoter in mouse skin. *Cancer Res.* 50:631-636 1992
- Mills, K.J., S.B. Bocckino, D.J. Burns, C.R. Loomis and R.C. Smart. Alteration in protein kinase C isozymes β and β_2 in activated Ha-*ras* containing papillomas in the absence of an increase in diacylglycerol. *Carcinogenesis* 13:1113-1118 1992
- Moser, G.J. and R.C. Smart. Characterization of mirex-induced tumor promotion; structure activity relationships, sexual dimorphism and presence of Ha-*ras* mutation. *Carcinogenesis* 14:1155-1160 1993
- Meyer, S.A., G.J. Moser, N.A. Monteiro-Riviere and R.C. Smart. Minimal role of enhanced cell proliferation in skin tumor promotion by mirex, a new nonphorbol ester-type tumor promoter. *Environ. Hlth. Perspec.* 101:265-270 1993
- Colapietro, A., A.L. Goodell and R.C. Smart. Characterization of benzo[a]pyrene-initiated mouse skin papillomas for mutated Ha-*ras* gene and protein kinase C levels. *Carcinogenesis* 14: 2289-2295 1993
- Mills, K.J., S.H. Reynolds and R.C. Smart. Diacylglycerol is an effector of the clonal expansion of cells containing activated Ha-*ras* genes. *Carcinogenesis* 14: 2645-2648 1993
- Meyer, S.A., T-W. Kim, G.J. Moser, N.A. Monterio-Riviere and R.C. Smart. Synergistic interaction between nonphorbol ester-type promoter mirex and 12-O-tetradecanoylphorbol-13-acetate in mouse skin. *Carinogenesis* 15: 47-52 1994
- Owens, D.M., J.W. Spalding, R.W. Tennant and R.C. Smart. Genetic alterations cooperate with v-Ha-*ras* to accelerate multistage carcinogenesis in TG.AC transgenic mouse skin. *Cancer Res.* 55: 3171-3178 1995
- Kim, T-W. and R.C. Smart. Lack of effect of retinoic acid and fluocinolone acetonide on mirex tumor promotion indicates a novel mirex mechanism. *Carcinogenesis* 16: 2199-2204 1995

- Owens, D.M., T.A. Zainal, A.M. Jetten and R.C. Smart. Localization and expression of cornifin- α /SPRR-1 in mouse epidermis, anagen hair follicles and skin neoplasms. *J. Invest. Dermatol.* 106: 647-654 1996
- Goodell, A.L., H-S. Oh, S.A. Meyer and R.C. Smart. Epidermal protein kinase C- β_2 is highly sensitive to down-regulation and is exclusively expressed in Langerhans cells; Down-regulation is associated with attenuated contact hypersensitivity. *J. Invest. Dermatol.* 107: 354-359 1996
- Oh, H-S and R.C. Smart. An estrogen receptor pathway regulates the telogen-anagen hair follicle transition and influences interfollicular epidermal cell proliferation. *Proc. Natl. Acad. Sci. USA* 93: 12525-12530 1996.
- Kim, T-W, K.L. Porter, J.F. Foley, R.R. Maronpot and R.C. Smart. Evidence that mirex promotes a unique population of epidermal cell that cannot be distinguished by their mutant Ha-ras genotype. *Mol. Carcinogenesis* 20:1115-1124 1997
- Oh, H-S and R.C. Smart. Expression of CCAAT/enhancer binding proteins (C/EBP) is associated with squamous differentiation in epidermis and isolated primary keratinocytes and is altered in skin neoplasia. *J. Invest. Dermatol.* 110:101-107 1998
- Smart, R.C. and H-S. Oh. On the effect of estrogen receptor agonists and antagonists on the mouse hair follicle cycle *J. Invest. Dermatol.* 111:175 1998
- Matsuura, H, H. Adachi, R.C. Smart, X. Xu, J. Arata and A.M. Jetten. Correlation between expression and peroxisome proliferator-activated receptor- β and squamous differentiation in epidermal and tracheobronchial epithelial cells. *Mol. Cell Endocrinol.* 147:85-92 1999
- Owens, D.M., S-J. C. Wei and R.C. Smart. A multihit, multistage model of chemical carcinogenesis. *Carcinogenesis* 20:1837-1844 1999
- Zhu, S., H.S. Oh, M. Shim, E. Sterneck, P.F. Johnson and R.C. Smart. C/EBP β modulates the early events of keratinocyte differentiation involving growth arrest, keratin 1 and keratin 10 expression. *Mol. Cell. Biol.* 19: 7181-7190 1999
- Wang, H.Q. and R.C. Smart. Overexpression of protein kinase C- α in the epidermis of transgenic mice results in striking alterations in phorbol ester-induced inflammation and COX-2, MIP-2, and TNF- α but not tumor promotion. *J. Cell Sci.* 112: 3497-3506.1999
- Smart, R.C., H.S. Oh, S. Chanda and C.L. Robinette. Effects of 17- β -estradiol and ICI 182,780 on hair growth in various strains of mice. *J. Invest. Dermatol.* 4:285-289 1999
- Chanda, S, C.L. Robinette and R.C. Smart. 17 β -Estradiol and ICI 182,780 regulate the hair follicle cycle in mice through an estrogen receptor- β pathway. *Amer. J. Physiol.* 278: 202-210 2000
- Wang, H.Q., M.P. Kim, H.F. Tiano, R. Langenbach and R.C. Smart. Protein kinase C- α coordinately regulates cytosolic phospholipase A₂ activity and the expression of cyclooxygenase-2 through different mechanisms in mouse keratinocytes. *Mol. Pharmacol.* 59:860-866 2001
- Zhu, S., K. Yoon, E. Sterneck, P.F. Johnson and R.C. Smart. CCAAT/enhancer binding protein- β (C/EBP β) is a mediator of keratinocyte survival and skin tumorigenesis involving oncogenic Ras signaling. *Proc. Natl. Acad. Sci. USA* 99: 207-212 2002
- Tiano, H.F., C, Loftin, J. Akunda, J. Spalding, A. Sessoms, D. Dunson, E. Rogin, S. Morham, R.C. Smart, and R. Langenbach. Deficiency of either cyclooxygenase 1 or cyclooxygenase 2 alters epidermal differentiation and reduces mouse skin tumorigenesis. *Cancer Res* 62: 3395-3401 2002
- Porter, K.L., S. Chanda, H-Q Wang, K.W. Gaido, R.C. Smart and C.L. Robinette, 17 β -Estradiol is a primary hormonal regulator of mirex tumor promotion *Tox Sci* 69: 42-48 2002

- Shim, M. and R.C. Smart. Lithium stabilizes the CCAAT/enhancer-binding protein α (C/EBP α) protein through a glycogen synthase kinase 3 (GSK3)-independent pathway involving direct inhibition of proteasomal activity. *J. Biol. Chem.* 278:19674-19681 2003
- Shuman, J.D., T. Sebastian, P. Kaldis, T.D. Copeland, S. Zhu, R.C. Smart and P.J. Johnson. Cell cycle-dependent phosphorylation of C/EBP β mediates oncogenic cooperativity between C/EBP β and H-Ras^{V12}. *Mol. Cell. Bio.* 24: 7380-7391 2004
- Yoon, K. and R.C. Smart. CCAAT/enhancer binding protein- α is a DNA-damage inducible p53-regulated mediator of the G1 checkpoint. *Mol. Cell. Bio.* 24:10650-10660 2004
- Shim, M, K.L. Powers, S.J. Fry, S. Zhu and R.C. Smart Diminished expression of C/EBP α in skin carcinomas is linked to oncogenic Ras and re-expression of C/EBP α in carcinoma cells inhibits proliferation. *Cancer Res*, 65:861-867 2005
- Sterneck, E, S. Zhu, A. Ramirez, J.L. Jorcano and R.C. Smart Conditional ablation of C/EBP β demonstrates its keratinocyte specific requirement for cell survival and mouse skin tumorigenesis, *Oncogene* 25: 1272-1276 2006
- Omori, E, K. Matsumoto, H. Sanjo, S. Sato, S. Akira, R.C. Smart, and J. Ninomiya-Tsuji TAK1 is a master regulator of epidermal homeostasis involving skin inflammation and apoptosis *J. Biol. Chem.* 281: 19610-19617 2006
- Yoon, K, S. Zhu, S.J. Ewing and R.C. Smart. Decreased Survival of C/EBP β -deficient keratinocytes is due to aberrant regulation of p53 levels and function. *Oncogene* 26: 360-367 2007
- Loomis, K.D., S. Zhu, K. Yoon, P.F. Johnson and R.C. Smart Genetic ablation of C/EBP α in epidermis reveals its role in suppression of epithelial tumorigenesis. *Cancer Res.* 67:6768-76 2007
- Ewing, S.J., S. Zhu, F. Zhu, J.S. House and R.C. Smart C/EBP β represses p53 to promote cell survival downstream of DNA damage independent of oncogenic Ras and p19^{Arf} *Cell Death and Diff.* 15:1734-1744 2008
- Ranjan, R., E.A. Thompson, K. Yoon and R.C. Smart. C/EBP α expression is regulated by C/EBP β in response to DNA damage *Oncogene* 28: 3235-45 2009
- House, J.S., S. Zhu, R. Ranjan, K. Linder and R.C. Smart C/EBP α and C/EBP β are required for sebocyte differentiation and stratified squamous differentiation in adult mouse skin *PLoS ONE* 5:9837 2010
- Lee, S., J.D. Shuman, T. Guszczynski, K. Sakchaisri, T. Sebastian, T.D. Copeland, M. Miller, M.S. Cohen, R.C. Smart, Z. Xiao, L.R. Lu, T.D. Veenstra and P.F. Johnson. RSK-mediated phosphorylation in the C/EBP β leucine zipper regulates DNA binding, dimerizations and growth arrest. *Mol. Cell Bio.* 11:2621-2635 2010
- Omori, E., K. Matsumoto, S. Zhu, R.C. Smart and J. Ninomiya-Tsuji. Ablation of TAK1 upregulates reactive oxygen species and selectively kills tumor cells. *Cancer Res* 70:8417-8425 2010
- Kim, T.H., S.L. Chiera, K.E. Linder, C.S. Trempus, R.C. Smart and J.M. Horowitz. Overexpression of transcription factor Sp2 inhibits epidermal differentiation and increases susceptibility to wound- and carcinogen-induced tumorigenesis. *Cancer Res* 70:8507-8516 2010
- Thompson, E.A., S. Zhu, J.R. Hall, J.S. House, R. Ranjan, J.A. Burr, Y-Y. He, D.M. Owens and R.C. Smart. C/EBP α expression is downregulated in human nonmelanoma skin cancers and inactivation of C/EBP α confers susceptibility to UVB-induced skin squamous cell carcinomas. *J. Invest. Dermatol.* 131:1339-1346 2011
- Deterding, L.A., J.G. Williams, M.M. Humble, R.M. Petrovich, S-J. Wei, C.S. Trempus, M.B. Gates, R.C. Smart, R.W. Tennant and K.B. Tomer. CD34 antigen: Determination of specific sites of phosphorylation in vitro and in vivo *Int J of Mass Spectrometry* 301 12–21 2011

- Ming, M., L. Feng, C.R. Shea, K. Soltani, B. Zhao, W. Han, R.C. Smart, C.S. Trempus and Y.Y. He. PTEN positively regulates UVB-induced DNA damage repair. *Cancer Res* 71:5287-5295 2011
- Gaddameedhi, S., C.P. Selby, W.K. Kaufmann, R.C. Smart and A. Sencar. Control of skin cancer by the circadian rhythm. *Proc. Natl. Acad. Sci. USA* 108:18790-18794 2011
- Hall, J.R., M.S. Bereman, A.I. Nepomuceno, E.A Thompson, D.C. Muddiman and R.C. Smart. C/EBP α regulates CRL4^{Cdt2}-mediated degradation of p21 in response to UVB-induced DNA damage to control the G₁/S checkpoint. *Cell Cycle* 22:1-9 2014
- Hall, J.R., Z.J. Messenger, H.W. Tam, S.L. Phillips, L. Recio and R.C. Smart. Long noncoding RNA lincRNA-p21 is the major mediator of UVB-induced and p53-dependent apoptosis in keratinocytes. *Cell Death and Disease* Mar 19;6:e1700 2015
- Messenger, Z.J., J.R. Hall, D. Jima, J.S. House, H.W. Tam, D.A. Tokarz and R.C. Smart. C/EBP β deletion in oncogenic Ras skin tumors is a synthetic lethal event. *Cell Death and Disease* 9:1054-1070 2018
- Tam, H.W., J.R. Hall, Z.J. Messenger, D. Jima, J. House, K. Linder, J.R. Hall and R.C. Smart. C/EBP β Suppresses Keratinocyte Autonomous Type 1 IFN Response and p53 to Increase Cell Survival and Susceptibility to UVB-induced Skin Cancer. *Carcinogenesis* Jan 29 (2019)

BOOKS AND BOOK CHAPTERS:

- Zannoni, V.G., R.L. Susick and R.C. Smart. Ascorbic acid as it relates to the metabolism of drugs and environmental chemicals. *Nutrition in the 20th Century*, M. Wimick (ed.), New York: John Wiley and Sons, pp 21-36, 1984.
- Smart, R.C. and G.J. Moser. Pesticides, tumor promotion and risk assessment in *Pesticides and the Future: Toxicological Studies of Risks and Benefits* (eds. E. Hodgson, R.M. Roe and N. Motoyama) *Reviews in Pesticides I*, pp 349-357 1991.
- Smart, R.C. Carcinogenesis, Chapter 17. *Biochemical Toxicology 2nd edition* (E. Hodgson and P.E. Levi eds) Appleton and Lange, Norwalk, CT 1993 pp381-414
- Hodgson, E. and R.C. Smart, eds. *Introduction to Biochemical Toxicology, 3rd edition*, J.Wiley and Sons, NY, NY 2001
- Hodgson E. and R.C. Smart. Biochemical Toxicology: Definition and Scope, Chapter 1 in *Introduction to Biochemical Toxicology* (eds E. Hodgson and R.C. Smart) J.Wiley and Sons, NY, NY pp 1-10 2001
- Smart, R.C. Molecular Techniques in Toxicology, Chapter 2 in *Introduction to Biochemical Toxicology 3rd edition* (eds E. Hodgson and R.C. Smart) J.Wiley and Sons, NY, NY pp 11-32 2001
- Smart, R.C and J.K. Akunda. Carcinogenesis, Chapter 15 in *Introduction to Biochemical Toxicology 3rd edition* (eds. E. Hodgson and R.C. Smart) J.Wiley and Sons, NY, NY pp 343-398 2001
- Hodgson, E., G.A. LeBlanc, S.A. Meyer and R.C. Smart Introduction to Biochemical and Molecular Methods Chapter 2 in *A Textbook of Modern Toxicology* (ed E. Hodgson) J. Wiley and Sons NY, NY pp13-22 2004
- Smart, R.C. Chemical Carcinogenesis Chapter 12 in *A Textbook of Modern Toxicology* (ed. E. Hodgson) J. Wiley and Sons NY, NY p225-250 2004
- Smart, R.C. and E. Hodgson editors *Molecular and Biochemical Toxicology 4th edition* J. Willey and Sons NY NY 2008
- Hodgson, E and R.C. Smart Molecular and Biochemical Toxicology: Definition and Scope Chapter 1 in *Molecular and Biochemical Toxicology 4th edition* (eds. R.C. Smart and E. Hodgson) J Willey and Sons NY, NY 2008

- Smart, R.C. Overview of Molecular Techniques in Toxicology: Genes and Transgenes Chapter 2 in *Molecular and Biochemical Toxicology 4th edition* (eds. R.C. Smart and E. Hodgson) J Wiley and Sons NY, NY 2008
- Smart, R.C., S.J. Ewing and K.D. Loomis Carcinogenesis Chapter 24 in *Molecular and Biochemical Toxicology 4th edition* (eds. R.C. Smart and E. Hodgson) J Wiley and Sons NY, NY 2008
- Smart, R.C. Chemical Carcinogenesis and Mutagenesis Chapter 11 in *Modern Toxicology 4th edition* (ed. E. Hodgson) J Wiley and Sons NY, NY 2010
- Smart, R.C. and E. Hodgson (eds.) *Molecular and Biochemical Toxicology 5th edition* J. Wiley and Sons Hoboken, NJ 2018
- Hodgson, E and R.C. Smart, Molecular and Biochemical Toxicology: Definition and Scope Chapter 1 in *Molecular and Biochemical Toxicology 5th edition* (eds. R.C. Smart and E. Hodgson) J Wiley and Sons Hoboken, NJ 2018
- Tsuji, Y and R.C. Smart, Molecular Techniques in the Study of Gene Function, Chapter 2 in *Molecular and Biochemical Toxicology 5th edition* (eds. R.C. Smart and E. Hodgson) J Wiley and Sons Hoboken, NJ 2018
- Smart, R.C. and J.R. Hall Carcinogenesis Chapter 18 in *Molecular and Biochemical Toxicology 5th edition* (eds. R.C. Smart and E. Hodgson) J Wiley and Sons Hoboken, NJ 2018