

CURRICULUM VITAE

NAME Paul William Doetsch, M.S., Ph.D.

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CITIZENSHIP United States of America

TITLES AND AFFILIATIONS

a. Current Appointments:

2017-present Professor Emeritus, Emory University School of Medicine

2018-present Senior Scientist, National Institutes of Health, National Institute of Environmental Health Sciences, Division of Intramural Research, Genome Integrity & Structural Biology Laboratory, Durham, NC

2018-present Deputy Scientific Director, National Institutes of Health, National Institute of Environmental Health Sciences, Division of Intramural Research, Durham, NC

b. Previous Academic and Administrative Appointments

1983-1985 Course Instructor, Harvard University, Department of Biology

1985-1991 Assistant Professor of Biochemistry, Emory University School of Medicine, Atlanta, GA

1991-1994 Associate Professor of Biochemistry (with tenure), Emory University School of Medicine

1992-1994 Associate Professor of Radiation Oncology, Emory University School of Medicine

2003-2009 Program Leader, Cancer Genetics and Epigenetics Scientific Program, Winship Cancer Institute of Emory University

2006-2007 Interim Director, Winship Cancer Institute of Emory University

2006-2009 School of Medicine Distinguished Chair in Cancer Research

- 1994-2017 Professor (with tenure), Departments of Biochemistry and Radiation Oncology (joint appointment)
- 2005-2017 Professor, Department of Hematology and Medical Oncology
- 2009-2017 Department of Radiation Oncology Distinguished Chair of Cancer Research
- 2005-2017 Associate Director for Basic Research (Deputy Director, 2006-2009) Winship Cancer Institute of Emory University

EDUCATION

- 1976 B.S. University of Maryland, College Park, MD (Biochemistry)
- 1978 M.S. Purdue University College of Pharmacy, West Lafayette, IN (Medicinal Chemistry and Pharmacognosy)
- 1982 Ph.D. Temple University School of Medicine, Philadelphia, PA (Biochemistry); Advisor: Robert J. Suhadolnik

POSTDOCTORAL TRAINING

- 1982-1985 Research Fellow, Dana-Farber Cancer Institute, Department of Pathology, Harvard Medical School, Boston, MA (Biochemistry/Molecular Biology); Advisor: William A. Haseltine

SCIENTIFIC ADVISORY BOARDS AND CONSULTANTSHIPS

- 1995 Battelle Pacific Northwest Laboratories (Richland, WA), Research Program Review
- 1995-2004 Trevigen, Inc. (Gaithersburg, MD), Scientific Advisory Board
- 1996-2008 Washington University SOM (St. Louis, MO) Dept. of Radiation Oncology, Program Project Grant, External Advisory Board
- 1999-2010 Harvard School of Public Health (Boston, MA) Dept. of Cancer Cell Biology, Radiation Biology Training Grant, External Advisory Board
- 2001 Univ. of New Mexico SOM (Albuquerque, NM), Dept. of Molecular Genetics and Microbiology, Academic Program Review
- 2002-2007 University of Texas Health Science Center at San Antonio, Dept. of Cellular and Structural Biology, Program Project Grant, External Advisory Board
- 2004-2007 San Antonio Cancer Institute (San Antonio, TX), External Advisory Board
- 2005 National Institutes of Environmental Health Sciences, Board of Scientific Councilors, ad hoc member
- 2006-2012 Emory University School of Medicine, Department of Radiology, NIH P50 Center Grant ("Emory Molecular and Translational Imaging Research Center"), Internal Advisory Board
- 2006-2008 Georgia Cancer Coalition, Advisory Review Committee, Distinguished Cancer Clinicians and Scientists Program
- 2009 National Institutes of Environmental Health Sciences, Board of Scientific Councilors, ad hoc member
- 2010 Kansas Bioscience Authority, Eminent Scholars Program, Evaluator

2014	Georgia Institute of Technology, School of Biology, Academic Program Review
2007-2016	NIEHS Center in Environmental Toxicology at UTMB-Galveston, External Scientific Advisory Board; Chair (2012-2016)
1999-2009	Chosun University (Kwangju, Korea), Professional Graduate School of Advanced Technology for Biological Resources
2003-2017	Winship Cancer Institute, Emory University, Program Project Grant (“Targeting Cell Signaling in Lung Cancer”), Internal Advisory Board
2006-2017	Winship Cancer Institute, Emory University, Specialized Program of Research Excellence (SPORE) grant in head and neck cancer, Internal Scientific Advisory Board
2010-present	United States Department of Defense Peer Reviewed Cancer Research Program, Integration Panel, Full Member; Chair (FY 2012-2013)

COMMUNITY AND CIVIC SERVICE

2002-2014	Registered Adult Leader, Boy Scouts of America Cub Scouts: Den Leader; Assistant Cubmaster Boy Scouts: Assistant Scoutmaster; Merit Badge Councilor; Troop Committee Member
2011-2013	President, Lakeside High School Dugout Club

MAJOR COMMITTEE MEMBERSHIPS

Previous Committee Memberships

National

1998-2000	American Association for Cancer Research Grant Writing Workshop, Discussion Leader Program Committee (2004 Annual Meeting) Molecular and Tumor Biology Subcommittee Clinical Research Subcommittee Experimental and Molecular Therapeutics Subcommittee
1996- 2006	American Board of Radiology Ad Hoc Committee on Radiation Oncology Research Initiatives (1996-2006) Task Force for New Item Development, Board Exam Question Writer (1994-2003) Radiation Oncology Written Examination Committee (1999)
1997	National Institutes of Environmental Health Sciences Div. of Intramural Research, Committee on Promotions and Leave, reviewer (1997)
1997	National Institutes of Health, Division of Cancer Treatment, Diagnosis and Centers NCI workshop: Molecular Biology to Radiation Oncology (1997)
1996	National Research Council/National Academy of Sciences Workshop: New Approaches to a Biologically-Based Risk Model for Low-Dose, Low-Dose Rate High LET Radiations (1996)
1991-1999	Radiation Research Society Education and Training Committee (1991-1992) Program Committee (1993-1994) Awards and Honors Committee (1995-1996)

Program Committee (1995-1996)
 Nominating Committee (1997-1998)
 Michael Fry Research Award Committee (1998-1999)
 Councilor-At-Large (1996-1999)
 1992, 1995 **U.S. Department of Energy**
 Health Effects and Life Sciences Research Division Program Review Committee
 University of Vermont Site Review (1992, 1995)

Institutional

Woodruff Health Sciences (major committees)

1992-2001 School of Medicine Ad Hoc Committee on Appointments and Promotions (1992-1995; 1997-2001)
 1996-2010 Strategic Planning Committees - Dept. of Rad. Oncology(1996-1997); Dept. of Biochemistry (1997); Winship Cancer Institute (2002); School of Medicine, Cell Biology and R/D Subcommittee (2003); School of Medicine (2009-2010); Winship Cancer Institute (2009-2010)
 2000 Research Planning Retreat, School of Medicine; **Workgroup Chair** for Abnormal cell growth, differentiation and function
 2001 Woodruff Health Sciences Center – Basic Science Research Focus Group
 2001-2002 School of Medicine Faculty Committee on Appointments and Promotions
 Faculty Search Committees - Dept. of Biochemistry; Dept. of Epidemiology; Dept. of Radiation Oncology; Chair Search, Dept. of Dermatology, Dept. of Pharmacology
 2008-2010 Woodruff Health Science Center Program and Facility Research Team
 2009-2010 Woodruff Health Science Center Research Advisory Council for Clinical Technology Assessment
 2009-2010 Woodruff Health Science Center Research Strategic Planning Process Subcommittee; Interdisciplinary Research Working Group
 2009-2011 Woodruff Health Science Center Health Sciences Research Building Program
 2005-2013 School of Medicine Research Advisory Council
 2011-2014 Woodruff Health Science Center Research Advisory Council

Winship Cancer Center (1985-2001) / Winship Cancer Institute (2001-2017)

1994-1998 Space Utilization Committee
 1994-2000 **Program Leader**, Cancer Genetics
 1998-1999 Subcommittee for Research Laboratory Design
 1999 Research Advisory Group for Schematic Design
 1999-2005 **Interim Associate Director**, Basic Research
 2001-2004 Program Leader, Genetic Instability and DNA Repair
 2001-2008 **Chair**, Basic Laboratory Research Council
 2001-2008 Program Growth Internal Advisory Committee
 2001-2008 WCI Operations Committee
 2001-2009 Executive Leadership Council
 2002-2011 Shared Resources Allocation Committee; **Chair**
 2004-2007 **Program Leader**, Cancer Genetics and Genomic Instability
 2007-2010 **Program Leader**, Cancer Genetics and Epigenetics
 2008-2009 WCI Health Science Program and Facility Plan (HSPFP)
 2009-2010 WCI Space Assessment and Utilization Task Force
 2009-2010 Winship Cancer Institute Comprehensive Strategic Planning Process Steering Committee

Emory University Institution-Wide Committees (major committees excluding faculty search committees and working groups)

1986-2005 Institutional Biosafety Committee; **Co-Chair** (1989-92); **Chair** (1992-1997);
Co-Chair (1998-2004)
1988-1990 University Graduate Executive Committee
1990-1995 Standing Division Curriculum Committee
1990-1995 Division Teaching Assignment Committee
2006-2013 Computational Life Sciences-Internal Advisory Committee

Woodruff Health Sciences Center (major committees)

2013-2017 Shared Resource Advisory/Executive Committee- Emory Integrated Genomics
2013-2017 Shared Resource Advisory/Executive Committee- Emory Integrated Cell Imaging
2015-2017 Emory Bridge and Catalyst Funding Review Committee

Winship Cancer Institute

***Note: Only chaired and major committee service indicated out of dozens of Winship Committees and Working Groups**

2002-2017 Membership Committee (2002-present); **Chair** (2009-2011)
2002-2017 Space Allocation Review Committee; **Chair**
2005-2017 Academic Development Committee
2005-2017 Shared Resource Allocation Committee; **Chair**
2009-2017 Executive Leadership Committee
2011-2017 Scientific Research Council; **Co-Chair**
2016-2017 Faculty Development and Training Committee

EDITORIAL BOARDS

1990-1994 Associate Editor, *Radiation Research*
1992-1996 Editorial Board, *Free Radical Biology & Medicine*
1998-2000 Guest Editor, *Methods: A Companion to Methods in Enzymology (DNA Damage, Repair and Mutagenesis)*
2003-2005 Co-Editor, *DNA Damage Recognition* (textbook), Taylor & Francis, Inc
2007-2009 Editorial Board, *Research Letters in Biochemistry*
2001-present Editorial Board, *Cancer Biology and Therapy*
2008-present Editorial Board, *Journal of Biomedicine and Biotechnology*
2009-present Editorial Board, *DNA Repair*
2009-present Editorial Board, *Biochemistry Research International*
2013-present Editorial Board, *Nucleic Acids Research*

SOCIETY MEMBERSHIPS (active)

American Chemical Society (1976-present)
American Society for Biochemistry and Molecular Biology (1989-present)
American Association for Cancer Research (1990-present)
Radiation Research Society (1983-present)
American Society for Therapeutic Radiology and Oncology (1994-present)
Environmental Mutagenesis and Genomics Society (2004-present)
American Society of Microbiology (2005-present)

MAJOR REVIEWER ASSIGNMENTS

Permanent/ Multiple Term Study Sections and Grant Review Panels

- 1993-1997 National Institutes of Health; Radiation Study Section; Member; **Acting Chair 1995**
- 1999-2002 American Cancer Society, Peer Review Committee on Carcinogenesis, Nutrition and the Environment; Member
- 2010-present United States Department of Defense Peer Reviewed Cancer Research Program, Integration Panel, Member; **Chair (FY 2012, 2013)**

Temporary/Single Term Study Sections, Grant Review Panels, and Research Program Site Visits

- 1987 National Institutes of Health; Radiation Study Section, special reviewer
- 1989 U.S. Dept. of Agriculture; Competitive Research Grants, Stratospheric Ozone Depletion Review Panel
- 1989 National Institutes of Health; Radiation Study Section, special reviewer
- 1990 National Institutes of Health; Special Review Comm., NCI Program Project Grant Site Visit, Medical College of Virginia)
- 1991-1993 American Cancer Society; Carcinogenesis & Nutrition Study Section, ad hoc member
- 1991 National Institutes of Health; Radiation Study Section, special reviewer
- 1992 U.S. Department of Energy; Radiological and Chemical Physics Grant Review Panel; **Chair**
- 1992 National Institute on Aging; Program Project Grant, Johns Hopkins University Ad hoc Review Committee
- 1996 National Institutes of Health; Special Study Section (2RG2 ET-1); **Chair**
- 1996 National Institutes of Health; Special Emphasis Panel; Oncological Sciences Initial Review Group; **Chair**
- 1998 National Institutes of Health; Special Emphasis Panel; Biological and Physiological Sciences Initial Review Group; **Chair**
- 1998 National Institutes of Health; Special Emphasis Panel; Chemical Pathology A Initial Review Group
- 1998 National Institutes of Health; Special Emphasis Panel; Pathology B Initial Review Group; **Chair**
- 1999 National Institutes of Health; Radiation Study Section; Temporary Member
- 2000 National Institutes of Health; Special Emphasis Panel; Oncological Sciences Initial Review Group (ZRGI SSS-1(3)).
- 2000 National Institutes of Health; Special Emphasis Panel; Oncological Sciences Initial Review Group (ZRGI RAD (01)).
- 2001 National Institutes of Health; Chemical Pathology Study Section; Temporary Member
- 2001 National Institutes of Health; NCI-Dermatology Branch-Intramural Research Program Review; site visit
- 2002 National Institutes of Health; NIEHS; Special Emphasis Panel; Conference Grants; Initial Review Group (2ES1 RAMB RBS); **Chair**
- 2004 National Institutes of Health; Special Study Section; Onc L-02 DNA Damage and Mutagenesis; Member
- 2004 National Institutes of Health, Molecular Genetics B Study Section; Temporary Member

2005 National Institutes of Health, Special Emphasis Panel (ZRG1 Onc-L (02)); Feb., Nov.; **Chair**

2005 National Institutes of Environmental Health Sciences; Board of Scientific Councilors; Laboratory of Molecular Genetics, Intramural Research Program Review; ad hoc member.

2006 National Cancer Institute; Initial Review Group Subcommittee A - Cancer Centers (Case Comprehensive Cancer Center)

2006 American Diabetes Association; Research Funding Program, Grant Reviewer

2008 National Institutes of Health; NIAIS; Special Emphasis Panel; Mechanisms, Diagnosis, and Treatment of Radiation Injury from a Nuclear Accident or Terrorist Attack (ZAI1 TP-1 (MI)). **Chair**

2008 National Science Foundation, MCB-Genes and Genome Systems; Grant Reviewer

2008 Science Foundation Ireland, Strategic Research Cluster; BioT; Grant Reviewer

2009 National Institutes of Health, Cancer Etiology Study Section; Oncological Sciences Integrated Review Group; Temporary Member

2009 National Cancer Institute; Initial Review Group Subcommittee A, Cancer Centers (Georgetown Lombardi Comprehensive Cancer Center)

2009 US Army Medical Research and Materiel Command Peer Reviewed Cancer Research Program Integration Panel; ad hoc member

2009 National Sciences and Engineering Council of Canada, Discovery Grants Program, Grant Reviewer

2009 National Institutes of Environmental Health Sciences; Board of Scientific Councilors; Laboratory of Molecular Genetics, Intramural Research Program Review; ad hoc member

2010 Austrian Science Fund (FWF); START Programme; Grant Reviewer

2010 NASA Postdoctoral Program; Reviewer

2011, 2012 National Cancer Institute; Basic and Translational Molecular Oncology P01 Special Emphasis Panel; member

2012 Swiss Cancer League; Grant Reviewer

2012 National Cancer Institute; Initial Review Group Subcommittee A, Cancer Centers NCI-A RTRB-A (E1) (University of Wisconsin Carbone Cancer Center)

2012 French National Research Agency, Environment and Biological Resources Department; Grant Reviewer

2014 National Institutes of Health, Special Emphasis Panel (ZRG-OBT-S (02)) Oncology, Basic Translational

2015 National Institutes of Health, Special Emphasis Panel (ZRG1-OBT-H (02)) Member Conflict: Cancer Biology

2015 National Science Center (Poland), Life Sciences, Grant Reviewer

2015 National Cancer Institute, Special Emphasis Panel (ZCA1-SRB-L (M1)) Exploratory/Developmental Research Grant Program

2015 National Institute of Environmental Health Sciences (ZES1-JAB-J (R0)1) Outstanding New Environmental Scientist (ONES) Award (R01)

2015 National Cancer Institute, Omnibus R03 & R21 SEP-6 Review Committee (2CA1 SRB-L(J1))

2016 The Velux Foundations, Denmark, Grant Reviewer

2016 National Institute of Environmental Health Sciences (ZES1-JAB-D (R1)) Outstanding New Environmental Scientist (ONES) Award (R01)

- 2016 National Cancer Institute, (ZCA1-RTRB-E (02)) Small Cell Lung Cancer) SCLC) Consortium: Innovative Approaches to the Prevention and Early Detection of SCLC (U01)
- 2016 National Cancer Institute, (ZCA1-RTRB-E (01)) Small Cell Lung Cancer) SCLC) Consortium: Therapeutic Development and Mechanisms of Resistance (U01)
- 2017 National Cancer Institute, (ZCA1 RTRB-E (A1)) PDX Development and Trial Centers (U54 and U24)

HONORS AND AWARDS

- 1979-1980 University Fellow Scholarship, Temple University
- 1982-1985 National Research Service Award, Postdoctoral Fellowship, National Cancer Institute
- 1988 Norwegian Marshall Fund Research Award
- 1989-1994 Research Career Development Award, National Institutes of Health
- 1990 Outstanding Teacher Award (Human and Molecular Genetics, School of Medicine, Class of 1993)
- 1991 Outstanding Teacher Award (Medical Biochemistry, School of Medicine, Class of 1994)
- 1995 The Radiation Research Award (Michael Fry Research Award) of the Radiation Research Society
- 1995 Kirby Memorial Symposium Lecture, Department of Biochemistry, Temple University School of Medicine
- 1996 Albert E. Levy Science Faculty Research Award, Emory University
- 2006-2009 School of Medicine Distinguished Chair in Cancer Research, Emory University
- 2007 The Tenth Annual Robert H. Hamilton Lecture, Temple University School of Medicine
- 2009-present Department of Radiation Oncology Distinguished Chair of Cancer Research
- 2010 The Orton K. Stark Distinguished Lecture, Miami University
- 2010 Winship Cancer Institute of Emory University- "Above and Beyond" Award

PATENTS

Issued

- 1985 Co-inventor, U.S. Patent 4,539,313; Antiviral Deoxyadenosines
- 1987 Co-inventor, U.S. Patent 4,708,935; Antiviral Deoxyadenosines
- 2002 Lead Inventor, U.S. Patent 6,368,594; Broad Specificity DNA Damage Endonuclease
- 2003 Lead Inventor, Australian Patent 760719; Broad Specificity DNA Damage Endonuclease

2006 Lead Inventor, U.S. Patent 7,060,455; Broad Specificity DNA Damage Endonuclease

Pending

2014 Co-Inventor, U.S. Patent Application No. 14/759,078
Systems, Methods, and Computer Readable Storage Media for Analyzing a Sample

RESEARCH FOCUS

Major areas of research focus in this laboratory are the biochemistry, molecular biology and genetics of DNA repair and its regulation; the interaction of the transcriptional machinery with DNA damage, and elucidation of the mechanisms of action of DNA targeting anticancer agents, including ionizing radiation. Our DNA repair studies currently include characterizing the effects of dysregulation of base excision repair (BER) on genomic instability and cellular transformation as well as the crosstalk among components of BER and other DNA repair pathways. Our studies on the effects of various types of DNA damage on RNA polymerases have led to the discovery of transcriptional mutagenesis (TM) and current studies are focused on defining its occurrence and consequences in bacterial and mammalian systems. Particular emphasis in these studies is the role of TM in a process called retromutagenesis and the acquisition of drug resistance in microbial pathogens and in tumor development.

CURRENT EXTRAMURAL GRANT SUPPORT

Department of Defense CDMRP LC160329 (Role: Principal Investigator), "A new paradigm for radiation-resistant persistent cellular stress and genomic instability in lung carcinogenesis" (06/01/17-05/30/19) Total direct costs \$350,000

PREVIOUS MAJOR EXTRAMURAL GRANT SUPPORT

NIH 2 P30 CA138292-09 (Role: Associate Director, terminated 9/2017) Winship Cancer Institute of Emory University Cancer Center Support Grant (04/01/17-3/31/22) Current year direct costs \$921,547 (Supported 10% Salary), Program Director, Curran, W

NASA NSCOR NNX11AC30G (Wang, Y. Program Director; Doetsch, Associate Program Director and Leader, Project 3)

Program Title: "Mechanisms underlying the risk of HZE particle-promoted solid tumor development"

Project 3: "Increased levels of reactive oxygen species (ROS) following ionizing radiation-induced DNA damage is regulated by miR-21 and contributes to HZE particle-promoted lung carcinogenesis"

1/01/11-6/30/16 Year 4 Project 3 Direct Costs \$133,250

NIH 2 P01 ES 011163-10 (Principal Investigator/Program Director, Project Leader)
PPG Title: "Cellular Responses to Oxidative Stress in Models of Colon Cancer Development" (Competing renewal of 5/17/02-6/30/08 P01)

Project 2: Oxidative DNA Damage and Genetic Instability in Intestinal Tumor Development".07/01/08-12/31/14. Project 2 Total Direct Costs \$1,257,729 Total Direct Costs (All Projects) \$6,014,915

NIH R01 CA120288-05 (Principal Investigator)
"Radiation-Induced DNA Damage and Transcriptional Mutagenesis in Tumor Development" 09/01/07-05/31/14. Total Direct Costs \$944,300

NCI P50 CA128613-05 (Shin, D. Principal Investigator; Doetsch, PI DRP Pilot Project)
SPORE in Head and Neck Cancer – Developmental Research Program
"DNA Damage Responses in HPV-positive and HPV-negative HNCs"
3/01/11-6/30/12. Total Direct Costs \$33,000.

The V-Foundation for Cancer Research (Principal Investigator)
Partners in Excellence Grant. "An Ultra-Sensitive Acoustic Microarray Sensor for Head and Neck Cancer Biomarkers" 01/01/08-12/31/10. Total Direct Costs \$100,000.

NIH 5P20 CA103735-05 (Principal Investigator)
Planning Grant for NCI Comprehensive Cancer Center, "Winship Cancer Institute, Emory University" 09/01/03- 08/31/09. Total Direct Costs \$1,262,394.

NIH 5 P01 ES011163-05 (Principal Investigator/Program Director and Project Leader)
PPG Title: "A Program for Investigation of Cellular Responses to Genotoxic Stress"
Project 2: "Resistance to DNA Damage: Pathway Interrelationships" 5/17/02-6/30/08.
Total Direct Costs \$4,062,134.

NIH R01 CA 73041-09 (Principal Investigator) "Reversal of DNA Damage by Alternative Excision Repair" 2/01/01-1/31/07. Total Direct Costs \$1,035,000

EmTech Biotechnology, Inc. UPN #01100303 (Principal Investigator)
"Prevention and Reversal of DNA Damage-Induced Degenerative Processes in Mammalian Cells" 10/01/01– 06/30/05. Total Direct Costs \$283,132.

NIH R01 CA73041-08S1 (Principal Investigator) - Supplemental Award to R01 CA73041. (Reversal of DNA Damage by Alternative Excision Repair) 2/01/02-1/31/05. Total Direct Costs \$214,428.

NIH R01 CA78622 (Principal Investigator) "Transcriptional Mutagenesis by Ionizing Radiation" 7/06/98 – 4/30/04. Total Direct Costs \$915,954.

Trevigen, Inc. (Principal Investigator) "Rapid Cancer Predisposition Screen for Gene Mutations" 9/30/97-3/31/99. Total Direct Costs \$27,273.

NIH R01 CA73041 (Principal Investigator) "Excision Repair of UV Radiation-Induced DNA Damage" 1/01/97-1/31/01. Total Direct Costs \$774,875.

American Cancer Society CN-126 (Principal Investigator) "Modulation of Radiation Sensitivity by AP Endonucleases" 7/01/94-12/31/96. Total Direct Costs \$164,100.

American Cancer Society NP-806 (Principal Investigator) “Repair Enzymology of UV-induced Cyclobutane Pyrimidine Dimers in Yeast” 7/01/92-12/31/95. Total Direct Costs \$163,200.

NIH R01 CA55896 (Principal Investigator) “Human Factors Involved in Repair of Radiation Damage” 8/14/92-7/31/97. Total Direct Costs \$729,384.

NIH K04 CA01441 (Principal Investigator) “Radiation-Induced DNA Damage and Repair in Eukaryotes” 4/01/89-3/31/94. Total Direct Costs \$292,695.

NIH R01 CA42607 (Principal Investigator) “Repair of Oxidative and Radiation-Induced DNA Damage” 4/01/89-3/31/95. Total Direct Costs \$474,786. (Competing Renewal).

NIH R01 CA42607 (Principal Investigator) “Repair of Oxidative and Radiation-Induced DNA Damage” 4/01/86-3/31/89. Total Direct Costs \$202,372.

TRAINING GRANTS

NIH 5T32 GM08367 (Role: Training Faculty), Training Grant in Biochemistry, Cell and Molecular Biology (1989-2017), Program Director: Pavlath, G.

NIH 5T32 GM08490 (Role: Training Faculty), Training Grant in Program in Genetics and Molecular Biology (1993-2017), Program Director: Boss, J

NIH 5T32 GM08602 (Role: Training Faculty), Training Grant in Molecular Therapeutics and Toxicology (1996-2017), Program Director: Morgan, E

NIH 5T32 ES012870 (Role: Training Faculty), Training Grant in Graduate and Postdoctoral Training in Toxicology (2004-2017), Program Director: Miller, G

NIH 1 T32 CA160040-01A1 (Role: Training Faculty), Translational Physician-Scientist Training Program in Oncology (2013-2017), Program Director: Shin, D

FORMAL TEACHING

a. Graduate Training Program Memberships:

Graduate Faculty, Laney Graduate School (1985-2017)

Graduate Program in Biochemistry, Cell and Developmental Biology (1988-2017); Director of Graduate Studies (1988-90); executive committee (1991-96; 2008-2017)

Graduate Program in Genetics and Molecular Biology (1988-2017); executive committee (1997); recruiting committee (2001-2005); oral exam committee (2005-2009; 2012-present)

Graduate Program in Molecular and Systems Pharmacology (1998-2012)

Graduate Program in Cancer Biology (2011-2017)

b. Teaching (Graduate, Medical School and Residency Programs)

COURSE	PROGRAM	YEARS	DUTIES
IBS 500L Lab. Methods in Biochemistry	Graduate	1986-92	Lecturer/Lab Instr.; Director 1987-89
IBS 505G Methods and Topics in Eukaryotic Mol. Biol.	Graduate	1987	Lecturer
BCH 511 Intermediate Biochemistry	Graduate	1987-90	Lecturer
CHEM 756 Inorganic Biochemistry	Graduate	1989-1993	Lecturer
IBS 511/512 Cell Physiology and Biophysics	Graduate	1990-92	Lecturer
IBS 515 Current Topics in Genetics, DNA Repair & Recombination	Graduate	1993	Director/Lecturer
MEDI 545 Human and Molecular Genetics	Medical & Graduate	1990-97	Lecturer
IBS 728 Physical Biochemistry	Graduate	1991-97	Lecturer
IBS 561 Eukaryotic Nuclear Organization & Function	Graduate	1997-1998	Lecturer
IBS 520 Intro. Grad. Biochemistry and Molecular Biology	Graduate	1986-2003 (yearly, Fall)	Lecturer; Director 1990-1993
BAHS 501 Biochemistry with Clinical Correlations	Physician Assistant	2004	Co-Director/ Lecturer
MEDI 515 Medical Biochemistry	Medical	1987-2006 (yearly, Fall)	Lecturer
Radiation Biology	Rad. Onc. Residents	1994-2004 (yearly, Fall)	Director/Lecturer

IBS 700 Macromolecular Structure & Function	Graduate	2000-2004 (yearly, Spring)	Lecturer
IBS 556 Principles of Biomedical & Biological Sciences	Graduate	2007-2011 (yearly, Spring)	Lecturer
IBS 523 Cancer Biology	Graduate	2005-2017 (yearly, Fall)	Lecturer
IBS 536 Drug Metabolism & Toxicology	Graduate	2000-2017 (yearly, Spring)	Lecturer
IBS 555 Principles of Biomedical & Biological Sciences	Graduate	2004-2017 (yearly, Fall)	Lecturer
Foundations of Medicine	Medical	2007-2017 (yearly, Fall)	Lecturer

SUPERVISORY TEACHING AND RESEARCH TRAINING

a. Undergraduate Honors Thesis Students

Leonard N. Girardi (Harvard) Biochemistry, 1983-1985	<u>Honors Thesis</u> : "Detection and Quantitation of Bulky, Stable DNA Adducts Induced by Platinum and Platinum Analogue Coordination Complexes"
Jill R. Gossett (Emory) Chemistry, 1986-1988	<u>Honors Thesis</u> : "Purification and Characterization of Yeast Redoxyendonuclease"
Lois K. Lee (Emory) Chemistry, 1990-1992	<u>Honors Thesis</u> : "Attempted Purification of Yeast Pyrimidine Dimer Endonuclease"
James Evans (Emory) Biology, 1995-1997	<u>Honors Thesis</u> : "Characterization of Fragile X Mental Retardation Protein (FMRP) and Its Effect on DNA"
Brianne Gorod (Emory) Biology, 1999-2001	<u>Honors Thesis</u> : "Factors that Influence the Measurement of Transcriptional Mutagenesis"
Heather Morgan (Emory) Biology, 2008-2010	<u>Honors Thesis</u> : "Interaction of the Intra-S Phase Checkpoint the Cellular Oxidative Stress Response in <i>Saccharomyces cerevisiae</i> "

Harry Powers (Emory)
Biology, 2010-2011

Honors Thesis: "The Regulation of Base Excision Repair by Sumoylation in *Saccharomyces cerevisiae*"

Xi Jiang (Emory)
Biology, 2010-2013

Honors Thesis: "Exploring the Relationship of Abasic Sites to Reactive Oxygen Species Generation in a Yeast Model System"

Syed Mehdi, (Emory)
Biology, 2011-2013

Honors Thesis: "The Regulation of Base Excision Repair: The Effects of Sumoylation on Ntg1 Function"

b. Graduate Students (Masters and Ph.D.)

<u>Student</u>	<u>Degree</u>	<u>Most Recent Known Position</u>
Keunmyoung Lee (1985-1987)	M.S., Biochemistry	Research Scientist Proton Laboratories, Inc. Alameda, CA
Krista K. (Hamilton) Bowman (1988-1994)	Ph.D., Biochemistry	Senior Scientific Manager Genentech, Inc, South San Francisco, CA
Wei Zhou (1989-1995)	Ph.D., Biochemistry & Molecular Biology	Associate Professor, Dept. of Hematology and Medical Oncology, Emory University, Atlanta, GA
Laura (Augeri) Henmueller (1990-1997)	Ph.D., Biochemistry & Molecular Biology	Technology Transfer Specialist NCI Technology Transfer Center Rockville, MD
Jiang Liu (1993-97)	Ph.D., Biochemistry & Molecular Biology	Attorney (Associate), Sullivan & Cromwell, LLP, Hong Kong, PRC
Rebecca Swanson Balish (1994-1999)	Ph.D., Nutrition and Health Sciences	Senior Lecturer, Dept. of Microbiology, Miami (Ohio) University Oxford, OH
Anand Viswanathan (1995-1999)	M.D./Ph.D., Genetics & Molecular Biology	Associate Professor, Neurology Massachusetts General Hospital Harvard Medical School, Boston, MA
Balveen Kaur (1995-1999)	Ph.D., Biochemistry Molecular Biology	Professor and Vice Chair for Research, Dept. of Neuroscience, The Ohio State University College of Medicine Columbus, OH
Jeanne (Alleva) Norwood	Ph.D., Genetics &	Principal Investigator and Lt. Col.,

(1996-2000)	Molecular Biology	U.S. Army Medical Service Corps, Army Institute of Research, Ft. Detrick, MD.
Kellen Meadows (1999-2003)	Ph.D., Genetics & Molecular Biology	Oncology Field Medical Director Pfizer, Inc. Durham, NC
Vladimir Beljanski Therapy (1998-2004)	Ph.D. Chemistry	Assistant Professor, Cell Institute, Nova Southeastern Univ., Ft. Lauderdale, FL
Barbara (Summers) Evert (2000-2004)	Ph.D., Genetics & Molecular Biology	R&D Staff Scientist Idexx Laboratories Westbrook, ME
Tiffany Thomas (2000-2004)	Ph.D., Genetics and Molecular Biology	Senior Patent Agent Kilpatrick Townsend & Stockton LLP, San Diego, CA
Nicole Doudican-Jones (2000-2004)	Ph.D., Genetics and Molecular Biology	Research Scientist, NYU School of Medicine New York, NY
Lori Rowe (2004-2009)	Ph.D., Biochemistry, Cell and Developmental Biology	Microbiologist Centers for Disease Control & Prevention, Atlanta, GA
Lyra (Booker) Griffiths (2004-2009)	Ph.D., Genetics and Molecular Biology	Research Specialist St. Jude Comprehensive Cancer Ctr, Memphis, TN
Bryn (Lipovsky) Moore (2007- 2009)	M.S., Biochemistry, Cell and Developmental Biology	Research Technician, IV Geisinger Medical Center, Danville, PA
Cheryl Clauson (2004-2010)	Ph.D., Genetics and Molecular Biology	Assistant Professor Saint Leo University Saint Leo, FL
Dan Swartzlander (2007- 2012)	Ph.D., Genetics and Molecular Biology	Postdoctoral Fellow Baylor College of Medicine Houston TX
Lydia Morris (2006-2012)	Ph.D., Genetics and Molecular Biology	Medical Writer/Editor Education and Training Systems International Chapel Hill, NC

Rossella Marullo (2009-2013)	Ph.D., Molecular Biology (Univ. of Messina)	Postdoctoral Fellow Weill Cornell Medical College New York, NY
Nicholas Bauer (2009- 2014) NRSA recipient	Ph.D., Biochemistry, Cell and Developmental Biology	Postdoctoral Fellow Harvard Medical School Boston, MA
Jordan Morreall (2009-2015)	Ph.D., Genetics and Molecular Biology	Science Fellow Office of Innovation and Industry Alliances Moffitt Cancer Center Tampa, FL
Ludmila (Lucy) Petrova (2009- 2016)	Ph.D., Genetics and Molecular Biology	Postdoctoral Fellow National Cancer Institute Frederick, MD
Kristin Limpose (2012-2017)	Ph.D., Cancer Biology	Medical Student, Emory University School of Medicine (Class of 2021)
Annie McPherson (current student)	Ph.D. Genetics and Molecular Biology	Current Student (co-mentor with A. Corbett)

c. Postdoctoral Research Associates

Postdoctoral Fellow	Degree/Yr./Institution	Most Recent Known Position
Paulos G. Yohannes (1987-1990)	Ph.D., 1986 Univ. of Kansas (Chemistry)	Professor of Chemistry and Associate Dean of Sciences Georgia State Univ-Perimeter College, Clarkston, GA
James A. Strickland (1988-1989)	Ph.D., 1988 Emory Univ. (Chemistry)	Director of Intellectual and Reg. Affairs, ProfiGen, Inc. Nashville, TN
Suzanne Byrd (1989-1991)	Ph.D, 1987 Univ. S. Alabama (Anatomy)	Associate Professor, Dept. of Biological Sciences, Eastern Kentucky Univ., Richmond, KY
Michael G. Cooney	Ph.D., 1989 Princeton Univ.	Current position unknown

(1992-1995)	(Molecular Biology)	
Yeuk-Mui Lee (1994-1996)	Ph.D., 1991 Univ. Southern Mississippi (Immunology)	Microbiologist Centers for Disease Control Atlanta, GA
Ho-Jin You (1996-1999)	M.D., 1987, Ph.D., 1994 Seoul National Univ., Korea	Professor, Dept. of Pharmacology, Chosun University Kwangju, Korea
Angela M. Avery (1996-1999)	Ph.D., 1994 Dublin City Univ., Ireland	Research Associate, Univ. of Nottingham, United Kingdom (Biochemistry)
Christopher N. Greene (1999-2001) <i>NRSA recipient</i>	Ph.D., 1999 Emory University (Genetics, Mol. Biol.)	Microbiologist Centers for Disease Control Atlanta, GA.
Natalie J. Morey (1999-2002)	Ph.D., 1999 Emory University (Genetics, Mol. Biol.)	Staff Scientist Centers for Disease Control Atlanta, GA
Zara A. Doddridge (2000-2002)	Ph.D., 2000 Univ. of Leicester, England (Chemistry)	Senior Patent Agent Life Technologies Carlsbad, CA
Damien Bregeon (2001-2003)	Ph.D., 2001 Univ. of Paris, France (Genetics)	Associate Professor Pierre et Marie Curie Université Paris, France
Charles Perkins (2005-2007) <i>RSNA Holman Pathway Award recipient</i>	Ph.D., 2000 (Genetics, Mol. Biol.) M.D., 2003 Emory University	Private Practice Physician Tampa, FL
Tina Saxowsky (2003-2008) <i>NRSA recipient</i> Instructor (2008-2010)	Ph.D., 2003 Johns Hopkins Univ. (Biological Chemistry)	Associate Professor, Chemistry Dept., Pacific Lutheran University, Tacoma, WA
Dan Swartzlander (2012- 2013)	Ph.D., 2012 Emory University (Genetics, Mol. Biol.)	Postdoctoral Fellow Baylor College of Medicine Houston TX
Rosella Marullo (2009- 2014)	M.D., 2004, Ph.D. 2013 Univ. of Messina, Italy	Postdoctoral fellow Weill Cornell Medical College

d. Research Faculty

<u>Research Faculty</u>	<u>Degree/Yr./Institution</u>	<u>Most Recent Known Position</u>
Heng Xu (2001-2004)	Ph.D. 1996 Georgia Inst. of Technology (Biology)	Visiting Professor, Guangxi Medical University, Peoples Republic of China
Natalya Degtyareva (2003-2017)	Ph.D. 1997 St. Petersburg Univ, Russia (Genetics)	Assistant Professor (RT), Dept. of Biochemistry, Emory University School of Medicine
Erica Werner (2011-2017)	Ph.D. 1995 Catholic University, Chile (Molecular & Cell Biology)	Assistant Professor (RT), Dept. of Biochemistry Emory University School of Medicine

e. Thesis Committees

Michael Reilly (Chemistry), Ph.D., 1986
 Kang Li (Biochemistry), Ph.D., 1990
 Cladiu Bandea (Microbiology), Ph.D., 1990
 Maureen Lassiter (Oral Biology), Ph.D., 1990
 Karen Potts (Microbiology), Ph.D., 1990
 Kenneth Thomas (Pharmacology), Ph.D., 1991
 Charles Jones (Microbiology), Ph.D., 1991
 Xiaqin Shan (Biochemistry), Ph.D., 1991
 Chang Li Bai (Biochemistry), Ph.D., 1992
 Scott Ballinger (Biochemistry), Ph.D., 1993
 Liguu New (Biology), Ph.D., 1994
 Donald Bettler (Genetics, Mol. Biol.), Ph.D., 1995
 Paula Samiec (Pharmacology) Ph.D., 1995.
 Abhijit Datta (Biochemistry) Ph.D., 1995
 Yoon Kim (Biochemistry) M.S., 1996
 Carlos Moreno (Genetics, Mol. Biol.), Ph.D., 1998
 Marie Earley (Genetics, Mol. Biol.), Ph.D., 1998
 Christopher Greene (Genetics, Mol. Biol.), Ph.D., 1999
 Natalie Morey (Genetics, Mol. Biol.), Ph.D., 1999
 Braden Boone (Biochem., Cell. Develop. Biol.), M.S., 2000
 Emma Patten (Nutrition/Health Sciences), Ph.D., 2001
 Megan Wind (Genetics, Mol. Biol.), Ph.D., 2001
 Laura Saunders (Genetics, Mol. Biol.), Ph.D., 2001

Kavita Marfatia (Genetics, Mol. Biol.), Ph.D., 2002
 Yan Chen (Biochem., Cell, Develop. Biol.), Ph.D., 2004
 Brenda Minesinger (Biochem., Cell Develop. Biol.), Ph.D., 2004
 Tovë Goldson (Biochem., Cell, Develop Biol.), Ph.D., 2004
 Melissa Parsons (Genetics, Mol. Biol.), Ph.D., 2006
 Amy Abdulovic (Genetics, Mol. Biol.), Ph.D., 2006
 Meyer Friedman (Genetics, Mol. Biol.), Ph.D., 2008
 William Dalton (Biochem., Cell, Develop Biol.), Ph.D., 2009
 Kerry Dooriss (Molecular Systems Pharmacology), Ph.D., 2010
 Julie Coats (Physics), Ph.D., 2012
 Callie Priest (Biochem., Cell, Develop. Bio.), Ph.D., 2015
 Stephen Mobley (School of Electrical and Computer Engineering, Georgia Tech), Ph.D. 2015
 Kristen Blanchard (Genetics, Mol. Biol.), Ph.D. 2016
 Sam Hong (Molecular& Systems Pharmacology) Ph.D. 2016
 Nitya Sharma (Genetics, Mol, Biol.), **current**
 Pamela Head (Genetics, Mol. Biol.), **current**
 Allyson Koyen (Cancer Biology), **current**

SCIENTIFIC CONFERENCE ORGANIZATION AND CHAIRSHIPS

2004-2015 Organizer and Chair, Co-Chair- Winship Cancer Institute
 Biennial Scientific Symposium (Atlanta, GA)
 2010 Organizer and Conference Co-Chair- 11th International Workshop on
 Radiation Damage to DNA (Atlanta, GA) May, 2010
 2011 Co-Organizer and Program Committee- 19th Annual Southeastern Regional
 Yeast Meeting (Atlanta, GA) February, 2012
 2011-2012 International Scientific and Program Committee, 12th International Workshop
 on Radiation Damage to DNA (Prague, Czech Republic) June, 2012
 2012-2013 Program Committee, 59th Annual Meeting, Radiation Research Society
 (New Orleans, LA) September, 2013
 2013-2014 Organizing Committee, 13th International Workshop on Radiation Damage to
 DNA. (Boston, MA) June, 2014
 2015-2016 International Scientific Committee, 14th International Workshop on Radiation
 Damage to DNA (Melbourne, Australia) March, 2016

INVITED SEMINARS AND LECTURES (since 1995)

1995

"Behavior of RNA Polymerases on Damaged DNA Templates: Implications for DNA Repair and Transcriptional Mutagenesis" Kirby Memorial Symposium, Temple University School of Medicine (Philadelphia, PA) January, 1995.

"An Alternative Eukaryotic DNA Excision Repair Pathway" Plenary Session, Keystone Symposia: Repair and Processing of DNA Damage (Taos, NM) March, 1995.

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and Transcriptional Mutagenesis" Department of Microbiology, University of Illinois (Urbana, IL) November, 1995.

1996

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and Transcriptional Mutagenesis" Department of Radiation Oncology, University of Pennsylvania (Philadelphia, PA) March, 1996.

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and Transcriptional Mutagenesis" Cancer Center, Thomas Jefferson University (Philadelphia, PA) March, 1996.

"Transcriptional Mutagenesis *in vitro* by Dihydrouracil, a Major Anoxic Ionizing Radiation-Induced DNA Base Damage Product" New Advances in Understanding DNA Repair and Mutagenesis Symposium, 44th Annual Meeting of the Radiation Research Society (Chicago, IL) April, 1996.

"Model Systems for Determining the Effects of Radiation Induced DNA Damage on the Transcriptional Machinery" NIH/DRG Workshop: The Radiation Chemistry of DNA (Chevy Chase, MD) June, 1996.

"An Alternative DNA Excision Repair Pathway Specific for the Major UV Photoproducts" Emerging Topics in DNA Repair Symposium, 24th Annual Meeting of the American Society for Photobiology (Atlanta, GA) June, 1996.

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and Transcriptional Mutagenesis" Department of Human Biological Chemistry & Genetics, University of Texas Medical Branch (Galveston, TX) December, 1996.

1997

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and Transcriptional Mutagenesis" Department of Radiation Oncology, Medical College of Virginia (Richmond, VA) January, 1997.

"Behavior of RNA Polymerase on Damaged DNA: Implications for DNA Repair and a New Pathway to Mutant Proteins" Department of Pediatrics, Indiana Univ. Medical Center (Indianapolis, IN) April, 1997.

"DNA Damage and Transcription: A New Pathway to Mutant Proteins"

School of Health Sciences, Purdue Univ. (W. Lafayette, IN) April, 1997.

"DNA Damage and Transcription: A New Pathway to Mutant Proteins"
Div. of Environmental Health Sciences, Columbia Univ. (New York, NY) May, 1997.

"Bypass of DNA Damage by RNA Polymerases: Implications for DNA Repair and
Transcriptional Mutagenesis" NATO Advanced Study Institute: DNA Damage and Repair
(Antalya, Turkey) October, 1997.

"Bypass of Radiation-Induced DNA Damage by RNA Polymerases: Implications for DNA Repair
and Mutagenesis" MIR-ROC Radiation and Biological Sciences Symposium (St. Louis, MO)
November, 1997.

1998

"Transcriptional Mutagenesis: Bypass of DNA Damage by RNA Polymerases" Molecular
Mutagenesis Mini-Symposium 89th Annual Meeting of the American Association for Cancer
Research (New Orleans, LA) April, 1998.

1999

"Bypass of Base Damage by RNA Polymerases and Transcriptional Mutagenesis"
Gordon Research Conference-Mammalian DNA Repair (Ventura, CA) February, 1999.

Transcriptional Mutagenesis: In Vitro and In Vivo Studies of RNA Polymerase Bypass of DNA
Damage" Radiation Damage to DNA International Workshop (Chapel Hill, NC) April, 1999.

"Transcriptional Mutagenesis" New Concepts in Mutagenesis Workshop, 11th ICRR (Dublin,
Ireland) July, 1999.

"Transcriptional Mutagenesis" Program in Cell and Molecular Biology, Colorado State University
(Ft. Collins, CO) October, 1999.

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" ASM Conference on DNA
Repair and Mutagenesis (Hilton Head, SC) November, 1999.

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" Dept. of Genetics, Yale Univ.
School of Medicine (New Haven, CT) December, 1999.

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" The 16th Radiation Biology
Center International Symposium (Kyoto, Japan) December, 1999.

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" Institute for Development,
Aging and Cancer, Tohoku Univ. (Sendai, Japan) December, 1999.

2000

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" Kimmel Cancer Institute,
Thomas Jefferson University (Philadelphia, PA) March, 2000.

"Yeast Base Excision Repair: Interconnections and Networks" DNA Base Excision Repair Workshop (Galveston, TX) March, 2000.

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" Dept. of Biological Sciences, Stanford University (Palo Alto, CA) April, 2000.

"Interconnections and Networks of DNA Repair and Damage Tolerance Pathways in Eukaryotes", National Institutes of Environmental Health Sciences (Research Triangle Park, NC) August, 2000.

"New Paradigms for Understanding Mutagenesis and the Cellular Response to DNA Damage" Institute of Molecular Medicine and Genetics, Medical College of Georgia (Augusta, GA) November, 2000.

2001

"Translesion Synthesis by RNA Polymerases: Transcriptional Mutagenesis in Bacterial and Mammalian Cells" Translesion Synthesis and SOS Response Symposium, Environmental Mutagen Society Meeting (San Diego, CA) March, 2001.

"New Paradigms for Understanding Mutagenesis and the Cellular Response to DNA Damage" Biology Colloquium, Northeastern University (Boston, MA) April, 2001.

"Transcriptional Mutagenesis in Prokaryotes and Eukaryotes" School of Biology, Georgia Institute of Technology (Atlanta, GA) September, 2001.

"Basic Research and How It Relates to Human Cancer" American Cancer Society and 100 Black Men of Albany, GA, Albany State Univ. (Albany, GA) September, 2001.

"Transcriptional Mutagenesis in Prokaryotic and Eukaryotic Systems" 4th Annual Symposium of the John B. Little Center for Radiation Sciences and Environmental Health, Harvard School of Public Health (Boston, MA) October, 2001.

2002

"Genotoxic Stress and Transcriptional Mutagenesis" Washington University School of Medicine (St. Louis, MO) January, 2002.

"Transcriptional Mutagenesis in Prokaryotes and Eukaryotes" Ohio State University (Columbus, OH) February, 2002.

"New Approaches and Perspectives for Understanding Cellular Responses to Genetic Damage" Medical Research Council, Radiation and Genome Stability Unit (Harwell, United Kingdom) May, 2002.

"Transcriptional Mutagenesis in Prokaryotes and Eukaryotes" University of Texas Health Science Center at San Antonio (San Antonio, TX) December, 2002.

2003

"Utilization of Isogenic Yeast DNA Repair Mutants and Gene Expression Profiling to Elucidate DNA Damage Response Networks" DNA Damage Response Networks Symposium, 12th International Congress of Radiation Research (Brisbane, Australia) August, 2003.

"Transcriptional Mutagenesis in Prokaryotes and Eukaryotes" UV-Induced Genomic Instability and Oxidation Induced by Ultraviolet Radiation Symposium, 10th Congress of the European Society for Photobiology (Vienna, Austria) September, 2003

2004

"Roles of and Relationships Between DNA Repair and Damage Tolerance Pathways in Eukaryotic Cells in Response to Oxidative Insults" 51st Annual Meeting of the Radiation Research Society (St. Louis, MO) April, 2004

"Transcriptional Mutagenesis in Bacterial and Mammalian Cells" 8th Annual International Workshop on Radiation Damage to DNA (Banff, Canada) May, 2004.

"Transcriptional Mutagenesis in Bacteria and Mammals" Unusual Mechanisms of Mutation Symposium, 35th Annual Meeting of the Environmental Mutagen Society (Pittsburg, PA) October, 2004.

"Transcriptional Mutagenesis in *Escherichia coli*" American Society for Microbiology Conference: DNA Repair and Mutagenesis (Southampton, Bermuda) November, 2004.

2005

"DNA Damage and Transcriptional Mutagenesis" Department of Genetics and Biochemistry, Clemson University (Clemson, SC) February, 2005.

"Transcriptional; Mutagenesis: A New Paradigm for Pathological Processes in Non-dividing cells" Department of Molecular and Cellular Physiology, Louisiana State University Health Sciences Center (Shreveport, LA) March, 2005.

"Transcriptional Mutagenesis in Bacterial and Mammalian Systems: From Directed Evolution to Cancer" Graduate Center for Toxicology, University of Kentucky (Lexington, KY) March, 2005.

"Oxidative Damage and Genetic Instability in Eukaryotes" Oklahoma Medical Research Foundation (Oklahoma City, OK) May, 2005.

"DNA Damage and Transcriptional Mutagenesis" Nelson Institute of Environmental Medicine, New York University School of Medicine (Tuxedo, NY) June, 2005.

"Transcriptional Mutagenesis in Bacterial and Mammalian Systems" 9th International Conference on Environmental Mutagens (San Francisco, CA) September, 2005.

"DNA Damage and Transcriptional Mutagenesis" University of Texas Health Science Center at San Antonio, Department of Molecular Medicine (San Antonio, TX) September, 2005.

“Oxidative Damage-induced Genetic Instability: A Problem for Both Nuclear and Mitochondrial Genomes” University of North Texas Health Sciences Center at Fort Worth, Department of Cell Biology and Genetics (Fort Worth, TX) December, 2005.

2006

“Transcriptional Mutagenesis in Prokaryotes and Eukaryotes” Laboratory of Molecular Carcinogenesis, National Institute of Environmental Health Sciences (Research Triangle Park, NC) January, 2006.

“Oxidative DNA Damage Management Systems and Genetic Instability in Eukaryotes” Dept. of Pharmacology, Univ. of North Texas Health Science Center (Fort Worth, TX) February, 2006.

“Transcriptional Mutagenesis in Prokaryotes and Eukaryotes” Environmental Toxicology Center, Univ. of Texas Medical Branch (Galveston, TX) March, 2006.

“Systems Interactions that Affect Genomic Stability in Response to Oxidative Stress” Ninth International Workshop on Radiation Damage to DNA (Tekirova, Antalya, Turkey) May, 2006.

“DNA Repair and Damage Tolerance Pathways Controlling Genetic Instability in Yeast” Microorganism Models of Genetic Instability Symposium, 106th General Meeting of the American Society for Microbiology (Orlando, FL) May, 2006.

“DNA Damage-induced Transcriptional Mutagenesis” Gordon Research Conference: Mutagenesis (Newport, RI) August, 2006.

"The Winship Cancer Institute of Emory University: A Diverse Matrix Organization for Cancer Research and Treatment." Catholic University of Korea's 37th Catholic Cancer Center Symposium, "New Paradigms for Cancer Management in the 21st Century" (Seoul, Korea) November, 2006.

"DNA Repair Gene and Protein Biomarkers in the Response to Chemotherapy and Radiation" The 1st Catholic Cancer Research Symposium, "Biomarkers in Cancer Early Detection and Treatment" (Seoul, Korea) November, 2006.

"Oxidative Stress, DNA Damage and Genetic Instability" The Korean DNA Repair Research Center. Chosun University School of Medicine (Gwangju, Republic of Korea) November, 2006.

2007

“Exploiting Novel Yeast Mutants for Anti-tumor Agent Characterization and Development” Drug Development and Pharmacogenomics Academy. Emory University (Atlanta, GA) January, 2007.

“Getting a Fix on DNA Damage: How Repair or Tolerance Pathway Choices Determine Biological Outcomes” The 10th Annual Robert H. Hamilton Lecture. Temple University School of Medicine (Philadelphia, PA) October, 2007.

“DNA Repair, Genetic Instability and Cancer: What are the Connections?” Plenary Lecture, 38th Annual Meeting, Environmental Mutagen Society (Atlanta, GA) October, 2007.

2008

“Transcriptional Mutagenesis: Occurrence and Biological Implications” Department of Molecular Pharmacology and Experimental Therapeutics, Mayo Clinic (Rochester, MN) January, 2008.

“DNA Damage and Transcriptional Mutagenesis: From Directed Evolution to Cancer” Waseda University (Tokyo, Japan) June, 2008.

“DNA Damage and Transcriptional Mutagenesis: From Directed Evolution to Cancer” National Institute for Health Sciences (Tokyo, Japan) June, 2008.

“Oxidative DNA Damage, DNA Management Systems and Chromosomal Instability” 10th International Workshop on Radiation Damage (Fukushima, Japan) June, 2008.

“Transcriptional Mutagenesis: a Route for Generating Mutant Proteins in Mammalian Cells” 2nd International Genome Dynamics and Neuroscience Meeting (Pacific Grove, CA) June, 2008.

“DNA Damage and Transcriptional Mutagenesis: From Directed Evolution to Cancer” Center for Research on Occupational and Environmental Toxicology, Oregon Health and Science University (Portland, OR) July, 2008.

“DNA Damage-induced Transcriptional Mutagenesis: A New Concept in Tumorigenesis.” IV Educational Symposium of the Spanish Lung Cancer Group (Zaragoza, Spain) November, 2008.

“*Saccharomyces cerevisiae*: A Powerful Tool for Revealing Genetic Mechanisms of Tumorigenesis and Anticancer Drug Development” IV Educational Symposium of the Spanish Lung Cancer Group (Zaragoza, Spain) November, 2008.

2009

“Oxidative Stress, DNA Damage and the Regulation of Base Excision Repair in *Saccharomyces cerevisiae*” 3rd US-EU Conference of Endogenous Genome Damage (Galveston, TX) February, 2009.

“Transcriptional Mutagenesis and Oncogene Activation: A New Route to Tumor Development?” Medical College of Georgia Cancer Center (Augusta, GA) March, 2009.

“Transcriptional Mutagenesis and Oncogene Activation: A New Route to Tumor Development?” Yale University School of Medicine (New Haven, CT) March, 2009.

“Regulation of eukaryotic base excision repair via dynamic compartmentalization.” National Institute of Aging (and DNA Repair Videoconference) (Baltimore, MD) April, 2009.

“Transcriptional Mutagenesis by 8-oxoguanine causes Ras Activation in Mammalian Cells” 3rd ASM Conference on DNA Repair and Mutagenesis (Whistler, BC, Canada) June, 2009.

“A New Paradigm for Regulation of Eukaryotic DNA Base Excision Repair via Dynamic Compartmentalization” Georgia Institute of Technology (Atlanta, GA) September, 2009.

Department of Biochemistry, King Saud University (Riyadh, Kingdom of Saudi Arabia) October, 2009.

1. “Novel mechanisms for mutagenesis and tumor development.”
2. “*Saccharomyces cerevisiae*: a powerful tool for revealing genetic mechanisms of tumorigenesis and anticancer drug development.”
3. “New concepts in regulation and interrelationships among DNA damage management systems.”
4. “Intra- and inter-programmatic activities among basic science, translational and clinical research groups for successful cancer center development.”

“Oxidative Stress and Genetic Instability: New Concepts in Regulation of and Interplay Among DNA Damage Management Systems” DNA Damage Responses Symposium, Washington University (St. Louis, MO) October, 2009.

2010

“Transcriptional Mutagenesis: From Directed Evolution to Cancer” Lawrence Berkeley National Laboratory (Berkeley, CA) February, 2010.

“Transcriptional Mutagenesis and DNA Repair Systems” Gordon Research Conference: DNA Damage, Mutation & Cancer (Ventura, CA) March, 2010.

“Transcriptional Mutagenesis: From Directed Evolution to Cancer” Orton K. Stark Distinguished Lecture in Microbiology. Miami University (Oxford, OH) April, 2010.

“DNA Damage Management Systems: Dynamic Flexibility and Interplay in Eukaryotes” Miami University (Oxford, OH) April, 2010.

“Transcriptional Mutagenesis, Drug Resistance, and Cancer” Joseph L. Roti Roti Retirement Symposium, Washington University School of Medicine, (St. Louis, MO) September, 2010.

2011

“Regulation of Base Excision Repair in Response to Oxidative Stress” Indo-US workshop on Base Excision DNA Repair, Brain Function and Aging (Hyderabad, India) January, 2011.

“Transcriptional Mutagenesis, Drug Resistance, and Cancer” Environmental Toxicology Graduate Program, University of California-Riverside (Riverside, CA) March, 2011.

“DNA Damage-induced Elevation of Reactive Oxygen Species in Eukaryotic Cells” International Symposium for Radiation Research and Medical Physics (Shanghai, China) May-June, 2011.

2012

“Regulation of Base Excision Repair: Insights Gained from Studies in *Saccharomyces cerevisiae*” U.S. – Japan DNA Repair Meeting (Leesburg, VA) April, 2012.

“What Can We Learn from Simple Model Organisms for Cancer Therapeutic Target and Biomarker Development?” Cancer Prevention and Control (CPC) Monthly Meeting, Winship Cancer Institute (Atlanta, GA) May, 2012.

“Transcriptional Mutagenesis: An Emerging Mechanism for Understanding the Biological Endpoints of DNA Damage in Non-Dividing Cell Populations” 12th International Workshop on Radiation Damage to DNA (Prague, Czech Republic) June 2012.

“Transcriptional Mutagenesis and Oxidative DNA Damage” Gordon Research Conference: Mutagenesis (Newport, RI) August 2012.

“Regulation of DNA Base Excision Repair” 43rd Annual Meeting, Environmental Mutagen Society (Bellevue, WA) September, 2012.

“Transcriptional Mutagenesis: An Emerging Mechanism for Understanding the Biological Endpoints of DNA Damage in Non-Dividing Cells” Oregon Health and Science University (Portland, OR) September, 2012.

“Radiation-induced ROS Stress Response in Mammalian Cells” 58th Annual Meeting, Radiation Research Society (San Juan, PR) October, 2012.

2013

“Transcriptional Mutagenesis: An Emerging Mechanism for Understanding the Biological Endpoints of DNA Damage in Non-Dividing Cells” Georgetown University Medical Center (Washington, DC) February, 2013.

“Effect of Space Radiation on Human Cells” NASA Headquarters (Washington, DC) February, 2013.

“Transcriptional Mutagenesis: An Emerging Mechanism for Understanding the Biological Endpoints of DNA Damage in Non-Dividing Cells” University of Illinois-Chicago, College of Pharmacy (Rockford IL) April, 2013.

“The Role of Reactive Oxygen Species in the Mechanism of Action of Cisplatin Cytotoxicity” University of Illinois-Chicago, Cancer Center (Chicago IL) April, 2013.

“Acute and Chronic Genetic and Biological Effect of X-Rays Mediated by Reactive Oxygen Species” University of Messina (Sicily, Italy) April, 2013

“Oxidative Stress, Genetic Instability and Cancer: What are the Connections?” 59th Annual Meeting, Radiation Research Society (New Orleans, LA) September, 2013.

“Dissecting Cisplatin Mechanism of Action: New Concepts in Cancer Chemotherapy” Winship Cancer Institute Grand Rounds (Atlanta, GA) November, 2013

2014

“Dissecting and Exploiting Cisplatin Mechanism of Action to Improve Combination Radiation and Chemotherapy” Division of Cancer Biology Research Interest Talks, Emory University (Atlanta, GA), January 2014

“Regulation of DNA Base Excision Repair in Eukaryotic Cells” 2014 Suddath Symposium: DNA Repair and Human Disease, Parker H. Petit Institute for Bioengineering and Bioscience (Atlanta GA) February, 2014.

“Meet the Experts: Capitalizing on Vulnerabilities in DNA Damage/Repair Toward New Cancer Therapies”_Cancer Genetics and Epigenetics Seminar Series, Winship Cancer Institute (Atlanta, GA) April, 2014

“Opposite Roles for Senescence and Reactive Oxygen Species in the Persistence and Resolution of Radiation-Induced Genomic Instability” 13th International Workshop on Radiation Damage to DNA (Boston, MA) June, 2014

“Dissecting Cisplatin Mechanism of Action: New Concepts in Cancer Chemotherapy” University of Georgia (Athens, GA) October, 2014

“Engaging DNA Repair and Mutagenesis from Outside the Box” Emory Univ. School of Medicine (Atlanta, GA) October, 2014

“Regulating Base Excision Repair in Response to Genotoxic Stress” US-EU Conference on Repair of Endogenous DNA Damage (Santa Fe, NM) November, 2014

2015

“Engaging DNA Damage and Repair from Outside the Box: Implications for Cancer and Therapeutics” Univ. of Texas-Austin (Austin, TX) February, 2015

“Transcriptional mutagenesis: How a single DNA lesion makes a difference in the biological endpoints of radiation exposure” Presidential Symposium, 61st Annual Meeting, Radiation Research Society (Ft. Lauderdale, FL) September, 2015

“Engaging DNA Repair and Mutagenesis from Outside the Box (Transcriptional Mutagenesis)” Georgia State University (Atlanta, GA) October, 2015

2016

“When DNA Repair Causes DNA Damage: A Role in Genomic Instability and Tumor Development” Elkin Lecture, Emory Winship Cancer Institute, Emory Univ. (Atlanta, GA) June, 2016

“Engaging Mutagenesis and DNA Repair from Outside the Box” National Institute of Environmental Health Sciences (Research Triangle Park, NC) August, 2016

“Base Excision Repair Proteins as Potential Oncogenes: Overexpression of NTHL1 Causes Replication Stress, Genomic Instability and Confers Cancer Hallmarks in Human Cells” 47th

Annual Meeting of the Environmental Mutagenesis and Genomics Society (Kansas City, MO)
September, 2016

“Engaging Mutagenesis and DNA Repair from Outside the Box (Transcriptional Mutagenesis)”
University of Maryland (College Park, MD) October, 2016

PUBLICATIONS:

Books

1. Siede W, Kow YW, **Doetsch PW**, eds. (2006) **DNA Damage Recognition**. Taylor & Francis Group, New York.
2. **Doetsch, PW**, ed. (2012) **Progress in Molecular Biology and Translational Science**, Volume 110. *Mechanisms of DNA Repair*, Elsevier (Academic Press), Oxford, UK.

Peer Reviewed Research Articles, Invited and Refereed Reviews and Book Chapters

1. **Doetsch PW**, Cassady JM, McLaughlin JL. Cactus Alkaloids XL (1980) Identification of Mescaline and other β -Phenethylamines in *Pereskia*, *Pereskopsis*, and *Islaya* by Use of Fluorescamine Conjugates. **J. Chromatogr.** 189:79-85.
2. **Doetsch PW**, Wu J, Sawada Y, Suhadolnik RJ (1981) Synthesis and Characterization of (2'-5') ppp3'dA (P3'dA)_n, An Analog of (2'-5')pppA(pA)_n. **Nature** 291:355-358.
3. **Doetsch PW**, Suhadolnik RJ, Sawada Y, Mosca JD, Flick MB, Reichenbach NL, Dang AQ, Wu JM, Charubala RC, Pfeleiderer W, Henderson EE (1981) Core (2'5')Oligo(adenylate) and the Cordycepin Analog: Inhibitors of Epstein Barr Virus-Induced Transformation of Human Lymphocytes in the Absence of Interferon. **Proc. Natl. Acad. Sci. USA** 78:6699-6703.
4. Suhadolnik RJ, **Doetsch PW**, Wu JM, Sawada Y, Mosca JD, Reichenbach NL (1981) Enzymatic Synthesis of (2'-5') ppp3'dA (P3'dA)_n, the Cordycepin Analog of (2'-5')Oligoadenylic Acid. In: **Methods Enzymol.** 79:257-265.
5. Henderson EE, **Doetsch PW**, Charubala R, Pfeleiderer W, Suhadolnik RJ (1982) Inhibition of Epstein-Barr Virus-Associated Nuclear Antigen (EBNA) Induction by (2'-5')Oligoadenylate and the Cordycepin Analog: Mechanism of Action for Inhibition of EBV-Induced Transformation. **Virology** 122:198-201.
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