# CURRICULUM VITAE

## BIOGRAPHICAL


**Name:** Robert W. Sobol [redacted]

[redacted]

**Business Address:** Rhode Island Hospital
Coro West Building
Sobol Lab, Suite 5.17
1 Hoppin St.
Providence RI 02903

**Business Phone:** (401) 863-1170

**E-Mail:** rwsobol@mac.com
rwsobol@brown.edu
rwsobol_sobol@brown.edu

**Scopus Author ID:** 7006164297
**ORCID Identifier:** 0000-0001-7385-3563
**Researcher ID:** E-4125-2013


---

## EDUCATION and TRAINING

**UNDERGRADUATE:**

| | | | |
|---|---|---|---|
| 1978-1982 | Allegheny College<br>Senior Thesis - Techniques in Molecular Biology<br>Dr. M. Serra | B.S. (1982) | Chemistry |

**GRADUATE:**

| | | | |
|---|---|---|---|
| 1982-1987 | Temple University<br>Hemoglobin Biosynthesis<br>Dr. W. Brinigar | M.A. (1987) | Chemistry |
| 1987-1991 | Temple University<br>Mechanisms of 2-5A Antiviral effects<br>Dr. R.J. Suhadolnik | Ph.D. (1991) | Biochemistry |

**POST-GRADUATE :**

| | |
|---|---|
| 1991-1993 | Laboratoire de Biochimie des Protéines,<br>UA CNRS 1191, Université Montpellier II<br>Montpellier, France<br>*Selective mRNA degradation by antisense oligonucleotide 2,5A chimeras*<br>Dr. B. Lebleu |
| 1994 | Institute of Genetics, Univ. of Cologne<br>Summer Collaborative study: *Mouse Genetics and Mouse Gene knockouts*<br>Dr. K. Rajewsky |
| 1997 | Carolina Program in Molecular Biology & Biotechnology<br>UNC-Chapel Hill<br>Gene Targeting in ES cells and Transgenic Mice |
| 1993-2002 | UTMB and NIEHS, NIH<br>*Reverse Genetics of Mammalian Base Excision Repair*<br>Dr. S.H. Wilson |
| 2004 | MBL Special Topics Course, Woods Hole, MA<br>Molecular Biology of Aging |

**AWARDS:**

| | |
|---|---|
| 1991 | Florence Gloria Freedman Award for Cancer Research |
| 1991-1993 | NIH-CNRS Postdoctoral Fellowship Award |
| 2007 | Brain Tumor Society 2007 Seth Harris Feldman Chair of Research |
| 2008 | Brain Tumor Society 2008 Seth Harris Feldman Chair of Research |
| 2010 | Hillman Fellow for Innovative Cancer Research |
| 2010, 2012, 2013 | Pitt Innovator Award, University of Pittsburgh |
| 2012 | 2011 UPCI Junior Scholar Award in Basic Science Cancer Research |
| 2022 | University of South Alabama Office of Research and Economic Development Award for Outstanding Research & Innovation |

## APPOINTMENTS and POSITIONS

**ACADEMIC:**

| | |
|---|---|
| 1990-1991 | Visiting Researcher, National Cancer Institute<br>Bethesda, M.D. Dept. of Biochemistry |
| 1991-1993 | Postdoctoral Fellow, NIH – CNRS<br>UA CNRS 1191, Université Montpellier II<br>Montpellier, France |
| 1994-1994 | Visiting Scientist/Collaborator; Institute of Genetics, Univ. of Cologne<br>Germany, Laboratory of Prof. K. Rajewsky, |
| 1993-1996 | Assistant Scientist, Sealy Center for Molecular Science<br>UTMB, Galveston, TX |
| 1996-2002 | Research Fellow, National Institute of Environmental Health<br>Sciences (NIH); Laboratory of Structural Biology |
| 2002-2012 | Assistant Professor, Dept. of Pharmacology & Chemical Biology<br>University of Pittsburgh Cancer Institute<br>University of Pittsburgh, School of Medicine |
| 2004-2014 | Molecular Pharmacology Graduate Program |
| 2005-2014 | The Faculty of the University of Pittsburgh School of Medicine Scholarly Project |
| 2005-2014 | The Graduate Faculty for the University of Pittsburgh and Carnegie Mellon University<br>Medical Scientist Training Program |
| 2007–2014 | Director, UPCI Lentiviral Facility |
| 2008–2013 | Assistant Professor, Department of Human Genetics<br>University of Pittsburgh, School of Public Health |
| 2012-2014 | Associate Professor w/tenure, Dept. of Pharmacology & Chemical Biology<br>University of Pittsburgh Cancer Institute<br>University of Pittsburgh, School of Medicine |
| 2013-2014 | Associate Professor w/tenure, Department of Human Genetics<br>University of Pittsburgh, School of Public Health |
| 2014 | Visiting Lecturer, Visiting Lecturer (Mechanisms of DNA Repair)<br>University Immersion Program; Sichuan University, Chengdu, China |
| Oct 2014-Sept 2022 | Point Clear Charities Professor of Oncologic Sciences<br>Chief, Molecular & Metabolic Oncology Program<br>Abraham A. Mitchell Distinguished Investigator<br>Director, USAMCI GEED Lab<br>Director, USAMCI Technology Development facility<br>University of South Alabama Mitchell Cancer Institute |
| Oct 2014- **Present** | Adjunct Professor, Dept. of Pharmacology & Chemical Biology<br>University of Pittsburgh, School of Medicine |
| June 2015-May 2019 | Joint appointment, Professor; Dept. of Pharmacology<br>College of Medicine, University of South Alabama |
| May 2017-Sept 2022 | Adjunct Professor, Dept. of Chemistry; University of South Alabama |
| Dec 2018-**present** | Co-Director, Greater Caribbean Center for Ciguatera Research (GCCCR)<br>Florida Gulf Coast University & University of South Alabama Mitchell Cancer Institute |

| | |
|---|---|
| May 2019-Sept 2022 | Professor, Dept. of Pharmacology, College of Medicine, University of South Alabama |
| June 2019-Sept 2022 | Senior Scientist, Affiliate Member, Cancer Cell Biology Program<br>O'Neal Comprehensive Cancer Center, University of Alabama Birmingham |
| Dec 2022- **Present** | Adjunct Professor, Dept. of Pharmacology<br>College of Medicine, University of South Alabama |
| Sept 2022-**Present** | Professor, Department of Pathology and Laboratory Medicine,<br>Warren Alpert Medical School, Brown University |
| Sept 2022-**Present** | Associate Director for Basic Research, Co-leader of the Cancer Biology Program<br>Legorreta Cancer Center at Brown University |
| Sept 2022-**Present** | Associate Director, Joint Program in Cancer Biology, Lifespan Cancer Institute |
| Sept 2022-**Present** | Affiliate, Brown Institute for Translational Science |

**PROFESSIONAL:**

| | |
|---|---|
| 2007 | Session Chair<br>2nd International Conference on MGMT and Alkylating Drug Resistance<br>Mainz, Germany |
| 2008 | Organizer and Chair, 10th Annual Midwest DNA Repair Symposium |
| 2011 | Session Chair<br>Environmental Mutagen Society 42nd Annual Meeting<br>Montreal, Quebec, Canada |
| 2013 | Co-organizer<br>Federation of American Societies for Experimental Biology (FASEB)<br>Science Research Conference, NAD Metabolism & Signaling<br>Chicago, Illinois (July 14-19, 2013) |
| 2013-2016 | Councilor<br>Environmental Mutagenesis and Genomics Society (EMGS) |
| 2013-2016 | Awards & Honors Committee member<br>Environmental Mutagenesis and Genomics Society (EMGS) |
| 2013-2016 | Nominating Committee member<br>Environmental Mutagenesis and Genomics Society (EMGS) |
| 2014-2016 | Chair, DNA Mechanisms of Cancer Study Section (Member 2011-2016)<br>American Cancer Society (ACS) |
| 2016 | Vice-President Elect and 2017 Program Chair<br>Environmental Mutagenesis and Genomics Society (EMGS) |
| 2016-2019 | Committee member<br>American Association for Cancer Research (AACR)<br>Science Policy and Government Affairs Committee (SPGAC) |
| 2016 – 2020 | Cancer Etiology (CE) Study Section, standing member<br>National Institutes of Health (NIH), (July 2016-June 2020) |
| 2017 | Co-organizer<br>6th EU-US Conference on Repair of Endogenous DNA Damage<br>University of Udine, Italy (September 24-28, 2017) |
| 2017 | President Elect and Program Chair, 2017 Annual Meeting<br>Environmental Mutagenesis and Genomics Society (EMGS)<br>Raleigh, NC (September 8-13, 2017) |
| 2018 | President, Environmental Mutagenesis and Genomics Society (EMGS) |
| 2018 – 2020 | Chair, Cancer Etiology (CE) Study Section,<br>National Institutes of Health (NIH), (July 2018-June 2020) |
| 2018 | Organizer<br>1st Southern Genome Maintenance Conference<br>Mobile, AL (October 20-21, 2018) |
| 2018-2019 | Nominations Com. Chair, Environmental Mutagenesis and Genomics Society (EMGS) |
| 2019 – 2021 | Organization Committee member<br>13th International Conference on Environmental Mutagens |

| | |
|---|---|
| | Ottawa, Canada (August 28-September 2, 2021) |
| 2020 | University of South Alabama Task Force to develop In-House clinical testing capacity for Sars-CoV-2, COVID-19. |
| 2020 | University of South Alabama President's Subcommittee: restarting research after COVID-19. |
| 2020 | USA-Health Mitchell Cancer Institute working group: restarting research after COVID-19. |
| 07/2020-07/2022 | University of South Alabama, Institutional Bio-Safety Committee (IBC) |
| 07/2020-07/2022 | University of South Alabama, Faculty Committee on Appointments, Promotions and Evaluations (FCAPE) |
| **09/2020 – 08/2023** | Board member, Environmental Mutagenesis and Genomics Society (EMGS) Endowment Fund |
| 08/2021-07/2022 | University of South Alabama, Chair of the Institutional Bio-Safety Committee (IBC) |
| May 2023 | Quantitative Confocal Microscopy Course (MDI Biological Lab) - Completed |
| **July 2023-June 2026** | Treasurer, Environmental Mutagenesis and Genomics Society (EMGS) |

**Brown University Committees**

| | |
|---|---|
| 2022-**Present** | Brown University Innovation Summit Planning Committee |
| 2022-**Present** | Brown University, Department of Pathology & Laboratory Medicine (PLM) Communications Committee |
| 2022-**Present** | Brown University, NIAID Training grant (T32) advisory committee |
| 2023-**Present** | Brown University Community Council (BUCC) Committee |
| 2023 | Brown University Pathology Pilot Project grant review panel |
| April 2023-**Present** | Brown University Proteomics Core Facility Advisory Board |

**Brown University - Legorreta Cancer Center (LCC) Committees**

| | |
|---|---|
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Website and newsletter committee |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Brain Cancer Working Group |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Cancer Research Training and Education Coordination Working Group |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Cancer Tissue Bank Working Group |
| 2022-**Present** | Co-Chair, Legorreta Cancer Center (LCC) Tech Commercialization Working Group |
| 2023-**Present** | Member, Legorreta Cancer Center (LCC) RNA modifications in cancer working group |
| 2023-**Present** | Co-Chair, Legorreta Cancer Center (LCC) Environmental Carcinogenesis Working Group |
| 2023-**Present** | Chair, Legorreta Cancer Center (LCC) DNA Repair and DDR Working Group |

## HONORS and MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

| | |
|---|---|
| Member, AAAS | 1993 – **Present** |
| Member, AACR, ASM | 2003 – **Present** |
| Member, ASCB, EMGS | 2004 – **Present** |
| Member, American Chemical Society | 2006 – **Present** |
| Member, International Society for Cell & Gene Therapy of Cancer | 2009 – 2022 |
| Member - ASPET (American Society for Pharmacology and Experimental Therapeutics). | 2010 – 2022 |

## PLASMIDS / VECTORS & LAB REAGENTS AVAILABLE

Plasmids/Vectors available at Addgene: https://www.addgene.org/Robert_Sobol/

Lab reagents available at Kerafast: https://www.kerafast.com/cat/1009/robert-w-sobol-phd

Lab reagents available at ABMGood:
https://www.abmgood.com/beta-pol-pms-2-lambda-liz-stable-mef-cell-line-151tag.html#T6537
https://www.abmgood.com/beta-pol-aag-lambda-liz-stable-mef-cell-line-283tag.html#T6538
https://www.abmgood.com/ung-lambda-liz-stable-mef-cell-line-207tag.html#T6539
https://www.abmgood.com/ung-lambda-liz-stable-mef-cell-line-210tag.html#T6540
https://www.abmgood.com/aag-lambda-liz-stable-mef-cell-line-308tag.html#T6541
https://www.abmgood.com/pms-2-lambda-liz-stable-mef-cell-line-127tag.html#T6542

Lab reagents available at ATCC (developed while at NIEHS in the Wilson lab):
https://www.atcc.org/products/crl-2816 (92TAg; WT MEFs, SV40 T-Ag transformed)
https://www.atcc.org/products/crl-2820 (88TAg; POLB-KO MEFs, SV40 T-Ag transformed)
https://www.atcc.org/products/crl-2817 (127TAg; PMS2-KO MEFs, SV40 T-Ag transformed)
https://www.atcc.org/products/crl-2822 (283TAg; POLB/MPG double KO MEFs, SV40 T-Ag transformed)
https://www.atcc.org/products/crl-2823 (151TAg; POLB/PMS2 double KO MEFs, SV40 T-Ag transformed)
https://www.atcc.org/products/crl-2819 (308TAg; MPG-KO MEFs, SV40 T-Ag transformed)

https://www.atcc.org/products/crl-2818 (MB355; POLB/p53 double KO MEFs)
https://www.atcc.org/products/crl-2821 (MB352; p53-KO MEFs)

**PUBLICATIONS**
**Refereed articles**

1. Kariko, K., Li, S.W., **Sobol, R.W.**, Jr., Suhadolnik, L., Reichenbach, N.L., Suhadolnik, R.J., Charubala, R. and Pfleiderer, W., "Phosphorothioate Analogs of 2-5A: Elucidation of the Stereochemical Course of the Enzymes of the 2-5A Synthetase/RNase L system" *Nucleosides and Nucleotides* 6, 173-184 (1987). PMID: N/A; PMCID: N/A.

2. Kariko, K., **Sobol, R.W.**, Jr., Suhadolnik, L., Li, S.W., Reichenbach, N.L., Suhadolnik, R.J., Charubala, K., and Pfleiderer, W., "Phosphorothioate Analogues of 2',5'- Oligoadenylate. Enzymatically Synthesized 2',5'- Phosphorothioate Dimer and Trimer: Unequivocal Structural Assignment and Activation of 2',5'-Oligoadenylate-Dependent Endoribonuclease" *Biochemistry* 26, 7127-7135 (1987). PMID: 3427062; PMCID: N/A.

3. Kariko, K., Li, S.W., **Sobol, R.W.**, Jr., Suhadolnik, R.J., Charubala, R., and Pfleiderer, W., "Phosphorothioate Analogues of 2',5'-Oligoadenylate: Activation of 2',5'-Phosphorothioate Cores and 5'-Monophosphates" *Biochemistry* 26, 7136-7142 (1987). PMID: 3427062; PMCID: N/A.

4. Suhadolnik, R.J., Kariko, K., **Sobol, R.W.**, Jr., Li, S.W., Reichenbach, N.L., and Haley, B., "2- and 8-Azido Photoaffinity Probes. 1. Enzymatic Synthesis, Characterization, and Biological Properties of 2- and 8-Azido Photoprobes of 2-5A and Photolabeling of 2-5A Binding Proteins" *Biochemistry* 27, 8840-8846 (1988). PMID: 3242613; PMCID: N/A.

5. Suhadolnik, R.J., Li, S.W., **Sobol, R.W.**, Jr., and Haley, B.E., "2- and 8-Azido Photoaffinity Probes. 2. Studies on the Binding Process of 2-5A Synthetase by Photosensitive ATP Analogues" *Biochemistry* 27, 8846-8851 (1988). PMID: 324613; PMCID: N/A.

6. Montefiori, D.C., **Sobol, R.W.**, Jr., Li, S.W., Reichenbach, N.L., Suhadolnik, R.J., Charubala, R., Pfleiderer, W., Modleszewski, A., Robinson, W.E., Jr., and Mitchell, W.M., "Phosphorothioate and Cordycepin Analogues of 2',5'- Oligoadenylate: Inhibition of HIV-1 Reverse Transcriptase and Infection In Vitro" *Proc. Natl. Acad. Sci. USA* 86, 7191-7194 (1989). PMID: 2476814; PMCID: PMC298022

7. Charubala, R., Pfleiderer, W., Suhadolnik, **Sobol, R.W.**, Li, S.W., and Reichenbach, N.L., "Nucleotides XXX. Chemical Synthesis of Adenylyl-(2'-5')-adenylyl-(2'-5')-8- azidoadenosine and Activation and Photoaffinity Labelling of RNase L by 5'-O-[$^{32}$P]-Phosphoryl-A2'p5'A2'p5'A(8-N3A)" *Helv. Chim. Acta* 72, 1354-1361 (1989). PMID: N/A; PMCID: N/A.

8. Suhadolnik, R.J., Lebleu, B., Pfleiderer, W., Charubala, R., Montefiori, D.C., Mitchell, W.M., **Sobol, R.W.**, Li, S.W., Kariko, K., and Reichenbach, N.L., "Phosphorothioate Analogs of 2-5A: Activation/Inhibition of RNase L and Inhibition of HIV-1 Reverse Transcriptase" *Nucleosides & Nucleotides* 8, 987-990 (1989). PMID: N/A; PMCID: N/A.

9. Strayer, D.R., Brodsky, I., Pequignot, E.C., Crilley, P,A., Carter, W.A., Fenning, R., Kariko, K., Reichenbach, N.L., **Sobol, R.W.**, Jr., Li, S.W., and Suhadolnik, R.J., "The Antitumor Activity of Ampligen, A Mismatched Double-stranded RNA, Which Modulates the 2-5A Synthetase/RNase L Pathway in Cancer and AIDS" (1990) R.B. Diasio, J.P. Sommadossi, eds. *Pharmacology and Therapeutics : Advances in Chemotherapy of AIDS*, Pergamon Press Inc. (New York) pp 23-31. PMID: N/A; PMCID: N/A.

10. Charachon, G., **Sobol, R.W.**, Bisbal, C., Salehzada, T., Silhol, M., Charubala, R., Pfleiderer, W., Lebleu, B., and Suhadolnik, R.J., "Phosphorothioate Analogues of (2'-5')(A)4: Agonist and Antagonist Activities in Intact Cells" (1990) *Biochemistry*, 29, 2550-2556. PMID: 2159324; PMCID N/A.

11. Kanou, M., Ohomori, H., Takaku, H., Yokoyama, S., Kawai, G., Suhadolnik, R.J. & **Sobol, R.W.** "Chemical Synthesis and Biological Activities of Analogues of 2',5'-Oligoadenylates Containing 8-

Substituted Adenosine Derivatives" (1990) *Nucleic Acids Res*. 18, 4439-4446. PMID: 2167468; PMCID: PMC331262

12. Suhadolnik, R.J., Li, S.W., **Sobol R.W.** & Varnum, J.M. "2'5'A Synthetase: Allosteric activation by Fructose 1,6-Bisphosphate" (1990) *Biochem. Biophys. Res. Commun*. 169, 1198-1203. PMID: 2363721; PMCID: N/A.

13. Suhadolnik, R.J., Reichenbach, N.L., **Sobol, R.W.**, Varnum, J.M., Hart, R.B., Peterson, D.L., Strayer, D.R., Henry, B., Ablashi, D.V., Gilleappie, D.H. and Carter, W.A. "Biochemical Defects in the 2-5A Synthetase/RNase L Pathway Associated with Chronic Fatigue Syndrome with Encephalopathy" (1990) in *Proceedings of the Cambridge Symposium on Myalgic Encephalomejelitis* B. Hyde, Ed. Nightingale Res. Foundation, Publ. PMID: N/A; PMCID: N/A.

14. Kanou, M., Ohomori, H., Nagai, K., Yokoyama, S., Suhadolnik, R.J., **Sobol, R.W.** & Takaku, H. "Purine 8-Substitution Modulates the Ribonuclease L Binding and Activation Abilitites of 2',5'-Oligoadenylates" (1991) *Biochem. Biophys. Res. Commun*. 176, 769-774. PMID: N/A; PMCID: N/A.

15. Muller, W.E.G., Weiler, B.E., Charabula, R., Pfleiderer, W., Leserman, L., **Sobol, R.W.**, Suhadolnik, R.J. & Schroder, H. "Cordycepin Analogues of 2',5'-Oligoadenylate Inhibit Human Immunodeficiency Virus Infection via Inhibition of Reverse Transcriptase", (1991) *Biochemistry* 30, 2027-2033. PMID: 170370. PMCID: N/A.

16. **Sobol, R.W.**, Suhadolnik, R.J., Kumar, A., Lee, B.J., Hatfield, D.L. & Wilson, S.H. "Localization of a Polynucleotide Binding Region in the HIV-1 Reverse Transcriptase: Implications For Primer Binding" (1991) *Biochemistry*, 30, 10623-10631. PMID: 1718424; PMCID: N/A.

17. Charubala, R., **Sobol, R.W.**, Kon, N., Suhadolnik, R.J. and Pfleiderer, W. "Syntheses and Biological Characterization of Phosphorothioate Analogues of (3'-5') Adenylate Trimer" (1991) *Helvetica Chimica Acta*, 74, 892-898. PMID: N/A; PMCID: N/A.

18. Charubala, R., Pfleiderer, W., Suhadolnik, R.J. and **Sobol, R.W.** "Chemical Synthesis and Biological Activity of 2'-5' Phosphorothioate Tetramer cores" (1991) *Nucleosides and Nucleotides*, 10, 383-388. PMID: N/A; PMCID: N/A.

19. Kumar, A., Kim, H.R., **Sobol, R.W.**, Becerra, S.P., Lee, B. J., Hatfield, D.L., Suhadolnik, R.J. and Wilson, S.H. "Mapping of Nucleic Acid Binding in Proteolytic Domains of HIV-1 Reverse Transcriptase" (1993) *Biochemistry*, 32, 7466-7474. PMID: 7687875; PMCID: N/A.

20. Suhadolnik, R.J., Reichenbach, N.L., Hitzges, P., **Sobol, R.W.**, Peterson, D.L., Hentry, B., Ablashi, D.V., Muller, W.E.G., Schroder, H.C., Carter, W.A. and Strayer, D.R. "Upregulation of the 2-5A Synthetase / RNase L Antiviral Pathway Associated with Chronic Fatigue Syndrome" (1994) *Clinical Infectious Diseases*, 18, (suppl 1);S96-104. PMID: 8148461; PMCID: N/A.

21. **Sobol, R.W.**, Charubala, R., Pfleiderer, W. and Suhadolnik, R.J. "Chemical Synthesis and Biological Characterization of phosphorothioate analogs of 2', 5'-3'-deoxyzdenylate trimer" (1993) *Nucleic Acids Res*. 21, 2437-2443. PMID: 7685081; PMCID: PMC309544.

22. **Sobol, R.W.**, Fisher, W.L., Reichenbach, N.L., Kumar, A., Beard, W.L., Wilson, S.H., Charubala, R., Pfleiderer, W. and Suhadolnik, R.J. "HIV-1 Reverse Transcriptase: Inhibition by 2'5'-oligoadenylate" (1993) *Biochemistry*, 32, 12112-12118. PMID: 7692966; PMCID: N/A.

23. **Sobol, R.W.**, Henderson, E.E., Kon, N., Shao, J., Hitzges, P., Mordechai, E., Reichenbach, N.L., Charubala, R., Schirmeister, H., Pfleiderer, W., and Suhadolnik, R.J., "Inhibition of HIV-1 Replication and Activation of RNase L by Phosphorothioate / Phosphodiester 2',5'-Oligoadenylate Derivatives" (1995) *J. Biol. Chem*., 270, 5963-5978. PMID: 7890727; PMCID: N/A.

24. **Sobol, R.W.**, Horton, J.K., Kühn, R., Gu, H., Singhal, R.K., Prasad, R., Rajewsky, K., and Wilson, S.H. "Requirement of Mammalian DNA Polymerase ß in Base Excision Repair" (1996) *Nature*, 379, 183-186. PMID: 8538772; PMCID: N/A.

25. Chen, K.H., Yakes, F.M., Srivastava, D.K., Singhal, R.K., **Sobol, R.W.**, Horton, J.K., Van Houten, B., and Wilson, S.H. "Up-Regulation of Base Excision Repair Correlates with Enhanced Protection Against a DNA Damaging Agent In Mouse Cell Lines" (1998) *Nucleic Acids Research*, 26, 2001-2007. PMID: 9518496; PMCID: PMC147493.

26. Biade, S., **Sobol, R. W.** , Wilson, S.H. And Matsumoto, Y. "Impairment of Proliferating Cell Nuclear Antigen (PCNA)-dependent Apurinic/Apyrimidinic Site Repair on Linear DNA" (1998) *J. Biol. Chem*., 273, 898-902. PMID: 9422747; PMCID: N/A.

27. Fortini, P., Pascuccu, B., **Sobol, R.W.**, Wilson, S.H. & Dogliotti, E. "Different DNA Polymerases are Involved in Short- and Long-Patch Base Excision Repair in Mammalian Cells" (1998) *Biochemistry*, 37, 3575-3580. PMID: 9530283; PMCID: N/A.

28. Robbins, I., Mitta, G., Vichier-Guerre, S., **Sobol, R.W.,** Ubysz, A., Rayner, B. & Lebleu, B. "Selective mRNA degradation by antisense oligonucleotide-2,5A chimeras: Involvement of RNase H and RNase L" (1998) *Biochimie* 80, 711-720. PMID: N/A; PMCID: N/A.

29. Ochs, K., **Sobol, R. W.**, Wilson, S.H. and Kaina, B. "Cells Deficient in DNA Polymerase ß Are Hypersensitive to Alkylating Agent-Induced Apoptosis and Chromosomal Breakage" (1999) *Cancer Research*, 59, 1544-1551. PMID: 10197627; PMCID: N/A.

30. **Sobol, R.W.,** Prasad, R., Evenski, A., Baker, A., Yang, X.P., Horton, J.K., and Wilson, S.H. "The lyase activity of the DNA repair protein ß-polymerase protects from DNA damage induced cytotoxicity" (2000) *Nature*, 405, 807-810. PMID: 10866204; PMCID: N/A.

31. Wilson, S.H., **Sobol, R.W.**, Beard, W.A., Horton, J.K., Prasad, R., and Vande Berg, B.J. DNA ß-polymerase and mammalian base excision repair. IN: Cold Spring Harbor Symposia on Quantitative Biology, *Cold Spring Harbor Laboratory Press*, (2001) 65:143-155. PMID: 12760029; PMCID: N/A.

32. **Sobol, R.W.**, and Wilson, S.H. Mammalian DNA ß-polymerase in base excision repair of alkylation damage. IN: Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology. *Academic Press*, (2001) 68:57-74. PMID: 11554313; PMCID: N/A.

33. Lavrik, O.I., Prasad, R., **Sobol, R.W.**, Horton, J.K., Ackerman, E.J. and Wilson, S.H. "Photoaffinity Labeling of Mouse Fibroblast Enzymes by a Base Excision Repair Intermediate: Evidence for the Role of Poly(ADP-ribose) Polymerase-1 in DNA Repair" (2001) *J. Biol. Chem*., 276, 25541-25548. PMID: 11340072; PMCID: N/A.

34. Tomicic, M.T., Thust, R., **Sobol, R.W.** and Kaina, B. "DNA Polymerase ß mediates Protection of Mammalian Cells against Gangciclovir-Induced Cytotoxicity and DNA Breakage" (2001*) Cancer Research*, 61, 7399-7403. PMID: 11606369; PMCID: N/A.

35. Raaphorst G.P., Cybulski S.E., **Sobol R.W.**, Ng C.E. "The response of human breast tumor cell lines with altered polymerase ß levels to cisplatin and radiation" (2001) *Anticancer Research* **2**1, 2079-2083. PMCID: 11497301: PMCID: N/A.

36. **Sobol, R.W.**, Watson, D.E., Nakamura, J., Yakes, F.M., Hou, E., Horton, J.K., Ladapo, J., Houten, B.V., Swenberg, J.A., Tindall, K.R., Samson, L.D. and Wilson, S.H. "Mutations associated with base

excision repair deficiency and methylation-induced genotoxic stress" (2002) *Proc. Natl. Acad. Sci.* USA 99, 6860-6865. PMID: 11983862. PMCID: PMC124494.

37. Lavrik, O.I., Kolpashchikov, D.M., Prasad, R., **Sobol, R.W**. and Wilson, S.H. "Binary System for Selective Photoaffinity Labeling of Base Excision Repair DNA Polymerases" (2002) *Nucleic Acids Research* 30, 73. PMID: 12136121. PMCID: PMC135774.

38. Horton, J.K, Baker, A., VandeBerg, B.J., **Sobol, R.W.** and Wilson, S.H. "Involvement of DNA polymerase ß in protection against the cytotoxicity of oxidative DNA damage" (2002) *DNA Repair* 1, 317-333. PMID: 12509250. PMCID: N/A.

39. **Sobol, R.W**., Foley, J.F., Nyska, A., Davidson, M.G & Wilson, S.H. "Regulated Over-Expression of DNA Polymerase ß Mediates Early Onset Cataract in Mice" (2003) *DNA Repair* 2, 609-622. PMID: 12713817, PMCID: N/A.

40. **Sobol, R.W**., Kartalou, M., Almeida, K.H., Joyce, D.F., Engelward, B.P., Horton, J.K., Prasad, R., Samson, L.D. & Wilson, S.H. "Base excision repair intermediates induce p53-independent cytotoxic and genotoxic responses" (2003) *J. Biol. Chem.*, 276, 25541-25548. PMID: 12882965; PMCID: N/A.

41. Cableof, D.C., Guo, Z., Raffoul, J.J., **Sobol, R.W.**, Wilson, S.H., Richardson, A. & Heydari, A.R. "BER deficiency caused by ß-pol haploinsufficiency: Accelerated DNA damage and Increased Mutational Response to Carcinogens" (2003) *Cancer Research*, 63, 5799-5807; PMID: 14522902; PMCID: N/A.

42. Endres, M., Biniszkiewicz, D., **Sobol, R.W.,** Harms, C., Ahmadi, M., Lipski, A., Katchanov, J., Mergenthaler, P., Dirnagl, U., Wilson, S., Meisel, A., & Jaenisch, R. "Increased postischemic brain injury in mice deficient in uracil-DNA glycosylase" (2004) *J. Clin. Invest,* 113, 1711-1721. PMID: 15199406; PMCID: PMC420508.

43. Trivedi, R. N., Almeida, K. H., Fornsaglio, J. L., Schamus, S. & **Sobol, R. W.** "The Role of Base Excision Repair in the Sensitivity and Resistance to Temozolomide Mediated Cell Death" (2005) *Cancer Research*, 65 (14), 6394-6400. PMID: 16024643; PMCID: N/A.

44. Pollack, I.F, Hamilton, R.L., **Sobol, R.W.,** Burnham, J., Yates, A.J., Holmes, E.J., Zhou, T. and Finlay, J.L. "O6-Methylguanine-DNA Methyltransferase Expression Strongly Correlates With Outcome in Childhood Malignant Gliomas: Results From the CCG-945 Cohort" (2006) *Journal of Clinical Oncology;* 24, 3431-3437. PMID: 16849758; PMCID: N/A.

45. Chiosea, S., Jelezcova, E., Chandran, U., Mantha, G., **Sobol, R.W**. and Dacic, S. "Overexpression of Dicer in precursor lesions of Lung Adenocarcinoma" (2007) *Cancer Research,* 67(5), 2345-2350. PMID: 17332367; PMCID: N/A.

46. Chiosea, S., Jelezcova, E., Chandran, U., Acquafondata, M., McHale, T., **Sobol, R.W**. and Dhir, R. "Up-regulation of Dicer, A Component of the MicroRNA Machinery, in Prostate Adenocarcinoma" (2006) *American Journal of Pathology*; 169**,** 1812-1820. PMID: 17071602; PMCID:1780192.

47. **Sobol R.W.**, "DNA polymerase ß null mouse embryonic fibroblasts harbor a homozygous null mutation in DNA polymerase iota" (2007) *DNA Repair;* 6, 3-7. PMID: 16979388; PMCID: PMC1868419.

48. Kronenberg, G., Harms, C., **Sobol, R.W.,** Cardozo-Pelaez, F., Linhart, H., Winter, B., Balkaya, M., Gertz, K., Gay, S.B., Cox, D., Eckart, S., Ahmadi, M., Juckel, G., Kempermann, G., Hellweg, R., Sohr, R., Hortnag, H., Wilson, S.H., Jaenisch, R., Endres, M. "Folate deficiency induces neuro-degeneration and brain dysfunction in mice lacking uracil DNA glycosylase" (2008) *Journal of Neuroscience*; 28(8), 7219-7230. PMID: 18614692; PMCID: PMC3844834.

49. Trivedi, R.N., Wang, X.H., Jelezcova, E., Goellner, E.M., Tang, J. and **Sobol, R.W**. "Human methyl purine DNA glycosylase and DNA polymerase ß expression collectively predict sensitivity to temozolomide" (2008) *Molecular Pharmacology*; 74(2):505-516. PMID: 18477668; PMCID: PMC3909956.

50. Allen, D., Herbert, D.C., McMahan, C.A., Rotrekl, V., **Sobol, R.W**., Wilson, S.H., Walter, C.A. "Mutagenesis is Elevated in Male Germ Cells Obtained from DNA Polymerase-beta Heterozygous Mice" (2008) *Biology of Reproduction*; 79(5):824-831; PMID: 18650495; PMCID: PMC2679517.

51. Ueda, R., Kohanbash, G., Sasaki, K., Fujita, M., Zhu, X., Kastenhuber, E.R., McDonald, H.A., Potter, D.M., Lotze, M.T., Khan, S.A., **Sobol, R.W.**, Okada, H. "Dicer-regulated microRNAs 222 and 339 promote resistance of cancer cells to cytotoxic T-lymphocytes by down-regulation of ICAM-1" (2009) *Proceedings of the National Academy of Sciences of the United States of America (PNAS);* 106(26):10746-10751; PMID: 19520829; PMCID: PMC2705554.

52. Yoshizawa, K., Jelezcova, E., Brown, A.R., Foley, J.F., Nyska, A., Cui, X., Hofseth, L.J., Maronpot, R.M., Wilson, S.H., Sepulveda, A.R., and **Sobol, R.W.** "Gastrointestinal Hyperplasia with Altered Expression of DNA Polymerase ß." (2009) *PLoS ONE 4*, e6493. PMID: 19654874; PMCID: PMC2716528.

53. Taioli, E., Ragin, C., Wang, X.H., Chen, J., Langevin, S., Brown, A., Gollin, S., Garte, S., **Sobol, R.W.** Recurrence in oral and pharyngeal cancer is associated with quantitative *MGMT* promoter methylation. (2009) *BMC Cancer;* 9 (1): 354; PMID: 19807915; PMCID: PMC2763008.

54. Jones, Jr., E., Ying, L., Hofseth, A.B., Jelezcova E., **Sobol, R.W.**, Ambs, S., Harris, C.C., Espey, M.G., Hofseth, L.J., Wyatt, M.D."Differential effects of reactive nitrogen species on DNA base excision repair initiated by the alkyladenine DNA glycosylase" (2009) *Carcinogenesis* 30: 2123-2129; PMID: 19864471; PMCID: PMC2792317.

55. Asagoshi, K., Liu, Y., Masaoka, A., Lan, L., Prasad, R., Horton, J.K., Brown, A.R., Wang, X.H., **Sobol, R.W.,** Bdour, H.M., Taylor, J.S., Yasui, A., and Wilson, S.H. "DNA polymerase ß-dependent long patch base excision repair in living cells" (2010) *DNA Repair* 9: 109-119; PMID: 20006562; PMCID: PMC2819632.

56. Tang, J., Goellner, E.M., Wang, X.H., Trivedi, R.N., St Croix, C.M., Jelezcova, E., Svilar, D., Brown, A.R., **Sobol, R.W.** "Bioenergetic metabolites regulate base excision repair dependent cell death in response to DNA damage" (2010) *Molecular Cancer Research* 8(1) 67-79; PMID: 20068071; PMCID: PMC2808464.

57. Jelezcova, E., Trivedi, R.N., Wang, X.H., Tang, J., Brown, A.R., Goellner, E.M., Schamus, S., Fornsaglio, J.L., **Sobol, R.W.** "Parp1 activation in mouse embryonic fibroblasts promotes Pol ß-dependent cellular hypersensitivity to alkylation damage" (2010) *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis***,** 686(1-2):57-67, PMID: 20096707; PMCID: PMC2834876.

58. Langevin, S.M., Bunker, C.H., Stone, R. A., Grandis, J.R., **Sobol, R.W.*,** Taioli, E. "MicroRNA-137 hypermethylation in oral rinses from patients with squamous cell carcinoma of the head and neck is associated with gender and body mass index." (2010) *Carcinogenesis*, May;31(5):864-70; (*Corresponding Author) PMID: 20197299; PMCID: PMC2864416.

59. Pollack, I. F., Hamilton, R.L., **Sobol, R.W.**, Nikiforova, M.N., Nikiforov, Y.E., Lyons-Weiler, M.A., LaFramboise, W.A., Burger, P.C., Brat, D.J., Rosenblum, M.K., Gilles, F.H., Yates, A.J., Zhou, T., Cohen, K.J., Finlay, J.L. and Jakacki, R.I. "Mismatch Repair Deficiency is an Uncommon Mechanism of Alkylator Resistance in Pediatric Malignant Gliomas: A Report from the Children's Oncology Group" (2010) *Pediatric Blood & Cancer*, Dec 1;55(6):1066-1071. doi: 10.1002/pbc.22634. Epub 2010 Jun 29; PMID: 20589656; PMCID: PMC3036982.

60. Pollack, I. F., Hamilton, R.L., **Sobol, R.W.**, Nikiforova, M.N., Lyons-Weiler, M.A., LaFramboise, W.A., Burger, P.C., Brat, D.J., Rosenblum, M.K., Holmes, E.J., Zhou, T. and Jakacki, R.I. "*IDH1* Mutations are Common in Malignant Gliomas Arising in Adolescents: A Report from the Children's Oncology Group" (2011) *Child's Nervous System,* Jan; 27(1): 87-94; PMID: 20725730; PMCID: PMC3014378.

61. Langevin, S.M., Bunker, C.H., Stone, R. A., Seethala, R.R., Grandis, J.R., **Sobol, R.W.**, & Taioli, E "MicroRNA-137 promoter methylation is associated with poorer overall survival in patients with squamous cell carcinoma of the head and neck" (2011) *Cancer*, Apr 1;117(7):1454-62, PMID: 21425146; PMCID: PMC3117118.

62. Lisovich, A., Chandran, U.R., Lyons-Weiler, M.A., LaFramboise, W.A., Brown, A.R., Jakacki, R.I., Pollack, I.F. and **Sobol, R.W**. "A novel SNP analysis method to detect copy number alterations with an unbiased reference signal directly from tumor samples" (2011) *BMC Medical Genomics*, Jan 26;4(1):14**;** PMID: 21269491; PMCID: PMC3041647.

63. Goellner, E.M., Grimme, B., Brown, A.R., Lin, Y., Wang, X.H., Sugrue, K.F., Mitchell, L., Trivedi, R.N., Tang, J.B., and **Sobol, R.W**. "Overcoming temozolomide resistance in glioblastoma via dual inhibition of $NAD^+$ biosynthesis and base excision repair" (2011) *Cancer Research*, Mar 15;71(6):2308-17; PMID: 21406402; PMCID: PMC3077901.

64. Tang, J.B., Svilar, D., Trivedi, R.N., Wang, X.H., Goellner, E.M., Moore, B., Hamilton, R.L., Banze, L.A., Brown, A.R., and **Sobol, R.W**. "N-methylpurine DNA glycosylase and DNA Polymerase ß modulate BER inhibitor potentiation of glioma cells to temozolomide" (2011) *Neuro-Oncology,* May;13(5):471-86; PMID: 21377995; PMCID: PMC3093332.

65. Yoder K.E., Espeseth A., Wang X.H., Fang, Q., Russo, M.T., Lloyd, R.S., Hazuda, D., **Sobol, R.W.**, and Fishel, R. "The Base Excision Repair Pathway Is Required for Efficient Lentivirus Integration" (2011) *PLoS ONE*, Mar 23;6(3):e17862; PMID: 21448280; PMCID: PMC3063173.

66. Kothandapani, A., Dangeti, V.S., Akshada Sawant, Brown, A.R., Banze, L.A., Wang, X.H., **Sobol, R.W.** and Patrick, S.M., "Novel Role of Base Excision Repair (BER) in Mediating Cisplatin Cytotoxicity" (2011) *J. Biol. Chem*., Apr 22; 286(16):14564-74**;** PMID: 21357694; PMCID: PMC3077654.

67. Li, H., Wang, P., Sun, Q., Ding, W.X., Yin, X.M., **Sobol, R.W.**, Stolz, D.B., Yu, J., and Zhang, L., "Following cytochrome c release, autophagy is inhibited during chemotherapy-induced apoptosis by caspase-8-mediated cleavage of Beclin-1" (2011) *Cancer Research*, May 15; 71(10): 3625-34; PMID: 21444671; PMCID: PMC3096685.

68. Mutamba, J.T., Svilar, D., Prasongtanakij, S., Wang, X.H., Lin, Y.C., Dedon, P.C., **Sobol, R.W.** and Engelward, B.P., "XRCC1 and Base Excision Repair Balance in Response to Nitric Oxide" (2011) *DNA Repair*, 10: 1282-1293; PMID: 22041025; PMCID: PMC3593656.

69. Svilar, D., Vens, C., and **Sobol, R.W.** "Quantitative, real-time analysis of base excision repair activity in cell lysates utilizing lesion-specific molecular beacons" (2012) *J. Vis Exp.*, Aug 6;(66), pii: 4168 (doi:10.3791/4168); PMID: 22895410, PMCID: PMC3476757.

70. Srinivasan, A., Wang, L., Cline, C.J., **Sobol, R.W.**, Xie, X.Q., and Gold, B. "The Identification and Characterization of Human AP Endonuclease-1 Inhibitors" (2012) *Biochemistry*, 51(31): 6266-6259; PMID: 22788932, PMCID: PMC3448856.

71. Svilar, D., Dyavaiah, M., Brown, A.R., Tang, J.B., Li, J., McDonald, P.R., Shun, T.Y., Braganza, A., Wang, X.H., Maniar, S., St Croix, C.M., Lazo, J.S., Pollack, I.F., Begley, T.J., and **Sobol, R.W.** "Alkylation Sensitivity Screens Reveal a Conserved Cross-species Functionome" (2012) *Molecular*

*Cancer Research*; (10): 1580-1596. PMID: 23038810, PMCID: PMC3877719. (*Highlighted and Cover page*)

72. Li, J., Luthra, S., Wang, X.H., Chandran, U.R., & **Sobol, R.W.** "Transcriptional profiling reveals elevated Sox2 in DNA Polymerase ß null mouse embryonic fibroblasts" (2012) *Am J Cancer Res*, 2(6): 699-713; PMID: 23226616; PMCID: PMC3512183.

73. Nagaria, P, Svilar, D, Brown, A.R., Wang, X.H., **Sobol, R.W.**, Wyatt, M.D., "SMUG1 but not UNG DNA glycosylase contributes to the cellular response to recovery from 5-fluorouracil induced replication stress." (2013) *Mutation research.* 743-744:26-32. PMID: 23253900; PMCID: PMC3616158.

74. Iyer, P., Srinivasan, A., Singg, S.K., Mascara, G.P., Zayitova, S., Sidone, B., Fouquerel, E., Svilar, D., **Sobol, R.W.**, Bobola M.S., Silber J., Gold B., "Synthesis and Characterization of DNA Minor Groove Binding Alkylating Agents" (2012) *Chem Res Toxicol*, December 12; (26)156-68. PMID: 23234400, PMCID: PMC3618862.

75. Joshi, K., Banasavadi-Siddegowda, Y., Mo, X., Kim, S, Mao, P., Kig, C., Nardini, D., **Sobol, R.W.**, Chow, L.M., Kornblum, H.I., Waclaw, R., Beullens, M., and Nakano, I., "MELK-dependent FOXM1 phosphorylation is essential for proliferation glioma stem cells" (2013) *Stem Cells*, June; 31(6):1051-63. PMID: 23404835 [PubMed - in process]; PMCID: PMC3744761.

76. Mao P., Joshi, K., Li, J., Santana-Santos, L., Luthra, S., Chandran, U.R., Benos, P.V., Smith, L., DeWang, M., Hu, B., Cheng*, S.Y., **Sobol*, R.W**., Nakano*, I. "Mesenchymal glioma stem cells are maintained by activated glycolytic metabolism involving aldehyde dehydrogenase 1A3" (2013) Proceedings of the National Academy of Sciences of the United States of America. (*Co-Corresponding Authors) May 21; 110(21)8644-9. PMID: 23650391; PMCID: PMC3666732.

77. Kothandapani, A., Sawant, A., Dangeti, V.S., **Sobol, R.W.**, and Patrick, S.M. "Epistatic role of base excision repair and mismatch repair pathways in mediating cisplatin cytotoxicity" (2013) *Nucleic Acids Research*, June 12; 41(15)7332-7343. PMID: 23761438; PMCID: PMC3753620.

78. Lan L., Nakajima S., Wei L., Sun L., Hsieh C.L., **Sobol R.W.**, Bruchez M., Van Houten B., Yasui A., Levine A.S. "Novel method for site-specific induction of oxidative DNA damage reveals differences in recruitment of repair proteins to heterochromatin and euchromatin." (2014) *Nucleic Acids Res*. Feb 1;42 (4): 2330-45. PMID: 24293652; PMCID: PMC3936713.

79. Choi, Y.J., Li, H., Son, M.Y., Wang, X.H., Fornsaglio J.L., **Sobol, R.W.**, Lee, M., Vijg, J., Imholz, S., Dollé, M.E.T., van Steeg, H., Reiling, E, and Hasty, P., "Deletion of individual Ku subunits in Mice Causes an NHEJ-Independent Phenotype Potentially by Altering Apurinic/Apyrimidinic Site Repair" (2014) *PLoS One* Jan 23;9(1):e86358. PMID: 24466051; PMCID: PMC3900520.

80. Bennett, G.R., Peters, R., Wang, X.H., Hanne, J., **Sobol, R.W.**, Bundschuh, R., Fishel, R., and Yoder, K.E., "Repair of oxidative DNA base damage in the host genome influences the HIV integration site sequence preference" (2014) *PLoS ONE.* Jul 22;9(7):e103164. PMID: 25051054; PMCID: PMC4106905.

81. Agnihotri, S., Burrell, K., Remke, M., Golbourn, B., Chornenkyy, Y., Buczkowicz, P., Gajadhar, A., Fernandez, N.A., Clarke, I.D., Barszczyk, M.S., Pajovic, S., Ternamian, C., Head, R., Sabha, N., **Sobol, R.W.**, Taylor, M.D., Rutka, J.T., Jones, C., Dirks, P.B., Zadeh, G., and Hawkins, C., "An ATM-MPG axis promotes therapeutic resistance in pediatric glioblastoma" (2014) *Cancer Discovery.* Oct; 4(10): 1198-213. Epub 2014 Aug 6. PMID: 25100205: PMCID: PMC4184920.

82. Fouquerel, E., Goellner, E.M., Yu, Z., Gagné, J.P., Barbi de Moura, M., Feinstein, T., Wheeler, D., Redpath, P., Li, J., Romero, G., Migaud, M., Van Houten, B., Poirier, G.G., **Sobol, R.W.**, "ARTD1/PARP1 Negatively Regulates Glycolysis by Inhibiting Hexokinase 1 Independent of NAD(+)

Depletion." (2014) *Cell Rep.* Sep 25;8(6):1819-31. Epub 2014 Sep 15. PMID: 25220464; PMCID: PMC4177344.

83. Fang Q, Inanc B, Schamus S, Wang XH, Wei L, Brown AR, Svilar D, Sugrue KF, Goellner EM, Zeng X, Yates NA, Lan L, Vens C, **Sobol RW**: HSP90 regulates DNA repair via the interaction between XRCC1 and DNA polymerase beta (2014) *Nature communications*, 5:5513, PMID: 25423885; PMCID: PMC4246423.

84. Wang, J., Qian, W., Li, J., Santana-Santos, L., Shuda, M., **Sobol, R.W.**, and Van Houten, B., "A novel strategy for targeted killing of tumor cells: induction of multipolar acentrosomal miotic spindles with a quinazolinone derivative mdivi-1". *Mol Oncol*. (2015) Feb;9(2):488-502. doi: 10.1016/j.molonc. 2014.10.002. Epub 2014 Oct 17. PubMed PMID: 25458053; PubMed Central PMCID: PMC4305024.

85. Wendell SG, Golin-Bisello F, Wenzel S, **Sobol RW**, Holguin F, Freeman BA. "15-hydroxyprostaglandin dehydrogenase generation of electrophilic lipid signaling mediators from hydroxy omega-3 fatty acids". (2015) *J Biol Chem*. 2015 Jan 12. pii: jbc.M114.635151. PubMed PMID: 25586183; PubMed Central PMCID: PMC4342494.

86. Brown, M.F., Leibowitz, B., He, K., Chen, D., Zou, F., **Sobol, R.W.**, Beer-Stolz, D., Zhang, L., and Yu, J. "Loss of *Caspase-3* sensitizes colon cancer cells to genotoxic stress via RIP1-dependent necrosis" (2015) *Cell Death & Disease,* Apr 23;6:e1729. doi: 10.1038/cddis.2015.104. PubMed PMID: 25906152; PubMed Central PMCID:4650537.

87. Quiñones, J.L., Thapara, U., Yub, K., Fang, Q., **Sobol, R.W.** and Demple, B. "Enzyme Mechanism-Based, Oxidative DNA-Protein Crosslinks Formed with DNA Polymerase ß *in vivo*" (2015) Proceedings of the National Academy of Sciences of the United States of America. July 14; 112(28)8602-7. PMID: 26124145; PMCID: 4507217.

88. Chandran, U.R., Luthra, S., Santana-Santos, L., Mao P., Kim S-H., Minata, M., Li, J., Benos, P.V., DeWang, M., Hu, B., Cheng, S.Y., Nakano, I., **Sobol, R.W**. "Gene expression profiling distinguishes proneural glioma stem cells from mesenchymal glioma stem cells" (2015) *Genomics Data* 5, 333-336; PubMed PMID: 26251826; PubMed Central PMCID: 4523279.

89. Shen, J.P, Srivas, R., Gross, A., Li, J., Jaehnig, E.J., Sun, S.M., Bojorquez-Gomez, A., Licon, K., Sivaganesh, V., Xu, J.L., Klepper, K., Yeerna, H., Pekin, D., Qiu, C.P., Attikum, H.v., **Sobol, R.W.**, Ideker, T. "Chemogenetic profiling identifies RAD17 as synthetically lethal with checkpoint kinase inhibition" (2015) *Oncotarget* Nov 3;6(34):35755-69; PubMed PMID:26437225; PubMed Central PMCID: 4742139.

90. Sawant, A., Kothandapani, A., Zhitkovich, A., **Sobol, R.W.**, and Patrick, S.M. "Role of mismatch repair proteins in the processing of cisplatin interstrand cross-links" (2015) *DNA Repair* 35,126-136; PubMed PMID: 26519826; PubMed Central PMCID: 4651805.

91. Li, Huaiyu, Gu, Longlong, Zhong, Yuanyuan, Chen, Yajuan, Zhang, Lei, Zhang, Annie R., **Sobol, R.W.**, Chen, Tong and Li, Jianfeng "Administration of polysaccharide from Panax notoginseng prolonged survival of the H22 tumor-bearing mice" (2016) *OncoTargets and Therapy*, v9, pp3433-3441; PubMed PMID: 27354815; PubMed Central PMCID: 4907734.

92. Simonelli, V., Lezzi, G., Basile, G., D'Errico, M., Fortini, P., Franchino, A., Viti, V., Brown, A.R., Parlanti, E., Pascucci, B., Palli, D., Giuliani, A., Palombo, F., **Sobol, R.W.** and Dogliotti, E. "Crosstalk between mismatch repair and base excision repair in human gastric cancer" (2017) *Oncotarget*, Vol. 8 (No. 49), pp: 84827-84840; PubMed PMID: 29156686; PubMed Central PMCID: PMC5689576.

93. R. Srivas, J.P. Shen, C.C. Yang, S.M. Sun, J. Li, A.M. Gross, J. Jensen, K. Licon, A. Bojorquez-Gomez, K. Klepper, J. Huang, D. Pekin, J.L. Xu, H. Yeerna, V. Sivaganesh, L. Kollenstart, H. van

Attikum, P. Aza-Blanc, **R.W. Sobol**, T. Ideker “A network of conserved synthetic lethal interactions for exploration of precision cancer therapy” (2016) *Molecular Cell*, Aug 4;63(3):514-25; PubMed PMID: 27453043; PubMed Central PMCID: n/a.

94. S.K. Godin, Z. Zhang, B.W. Herken, J.W. Westmoreland, A.G. Lee, M.J. Mihalevic, Z. Yu, **R.W. Sobol**, M.A. Resnick, K.A. Bernstein “The Shu complex promotes error-free tolerance of alkylation-induced base excision repair products” (2016) *Nucleic Acids Research*, Sep 30;44(17):8199-215; PubMed PMID: 27298254; PubMed Central PMCID: n/a.

95. Elise Fouquerel, Justin Lormand, Arindam Bose, Ting Lee, Grace Kim, Jianfeng Li, **Robert W. Sobol**, Bret Freudenthal, Sua Myong, and Patricia L. Opresko “Oxidative guanine base damage regulates telomerase activity” (2016) *Nature Structural and Molecular Biology*, 23, 1092–1100; PubMed PMID: 27820808; PubMed Central PMCID: n/a.

96. A. Moretti, J. Li, S. Donini, **R.W. Sobol**, M. Rizzi and S. Garavaglia “Crystal structure of human aldehyde dehydrogenase 1A3 complexed with $NAD^+$ and retinoic acid” (2016) *Scientific Reports*, Oct 19;6:35710; PubMed PMID: 27759097; PubMed Central PMCID: n/a.

97. C.L. Bigarella, J. Li, P. Rimmelé, R. Liang, **R.W. Sobol** and S. Ghaffari “FOXO3 is Essential for Protecting Hematopoietic Stem and Progenitor Cells from Oxidative DNA Damage” (2017) *J. Biol. Chem.* Feb 17;292(7):3005-3015; PubMed PMID: 27994057; PubMed Central PMCID: n/a.

98. A. Braganza, J. Li, Xuemei Zeng, N.A. Yates, N.B. Dey, J. Andrews, J. Clark, L. Zamani, X. Wang, C. St. Croix, R. O’Sullivan, L. Garcia-Exposito, J.L. Brodsky and **R.W. Sobol** “UBE3B is a calmodulin-regulated, mitochondria-associated E3 ubiquitin ligase” (2017) *J. Biol. Chem*. Feb 10;292(6):2470-2484; PubMed PMID: 28003368; PubMed Central PMCID: n/a.

99. Akshada Sawant, Ashley M. Floyd, Mohan Dangeti, Wen Lei, **Robert W. Sobol** and Steve M. Patrick “Differential Role of Base Excision Repair Proteins in Mediating Cisplatin Cytotoxicity” (2017) *DNA Repair,* Mar;51:46-59; PubMed PMID: 28110804; PubMed Central PMCID: n/a.

100. Lu Ding, Xos´e Lu´ıs De´an-Ben, Neal C. Burton, **Robert W. Sobol**, Vasilis Ntziachristos, and Daniel Razansky “Constrained Inversion and Spectral Unmixing in Multispectral Optoacoustic Tomography” (2017) *IEEE Transactions on Medical Imaging,* In Press; PubMed PMID: 28333622; PubMed Central PMCID: n/a.

101. Sykora P, Kanno S, Akbari M, Kulikowicz T, Baptiste BA, Leandro GS, Lu H, Tian J, May A, Becker KA, Croteau DL, Wilson DM 3rd, **Sobol RW**, Yasui A, Bohr VA “DNA polymerase beta participates in mitochondrial DNA repair” (2017) *Mol Cell Biol.* May 30. pii: MCB.00237-17. doi: 10.1128/MCB.00237-17. [Epub ahead of print] PubMed PMID: 28559431; PubMed Central PMCID: n/a.

102. Tyler Golato, Boris Brenerman, Daniel R. McNeill, Jianfeng Li, **Robert W. Sobol**, David M. Wilson III “Development of a Cell-Based Assay for Measuring Base Excision Repair Responses” (2017) *Scientific Reports,* Oct 11;7(1):13007; PubMed PMID: 29021553; PubMed Central PMCID: n/a.

103. Peter Sykora, Kristine L. Witt, Pooja Revanna, Stephanie L. Smith-Roe, Jonathan Dismukes, Bevin P. Engelward and **Robert W. Sobol** “*Next generation high throughput DNA damage detection platform for genotoxic compound screening*” (2018) *Scientific Reports,* Feb 9;8(1):2771; PubMed PMID: 29426857; PubMed Central PMCID: n/a.

104. Peter Sykora, Ylenia Chiari, Andrew Heaton, Nickolas Moreno, Scott Glaberman and **Robert W. Sobol** “*Application of the CometChip platform to assess DNA damage in field-collected blood samples from turtles*” (2018) *Environmental and Molecular Mutagenesis*, Mar 14. doi: 10.1002/em.22183. [Epub ahead of print]; PubMed PMID: 29536573; PubMed Central PMCID: n/a. (***Chosen as Editor’s Choice for the May 2018 issue***)

105. Manoj Sonavane, Peter Sykora, Joel Andrews, **Robert W. Sobol**, and Natalie Gassman *"Camptothecin efficacy to poison Top1 is altered by Bisphenol A in mouse embryonic fibroblasts"* (2018) *Chemical Research in Toxicology*, Jun 18;31(6):510-519, PubMed PMID: 29799191; PubMed Central PMCID: n/a.

106. Zixing Liu, Wenling Zhang, Joshua B. Phillips, Ritu Arora, Steven McClellan, Jiangfeng Li, Jin-Hwan Kim, **Robert W. Sobol** and Ming Tan (2018) *"Immunoregulatory Protein B7-H3 Regulates Cancer Stem Cell Enrichment and Drug Resistance through MVP-mediated MEK Activation"*, *Oncogene*, 2018 Aug 6. doi: 10.1038/s41388-018-0407-9. [Epub ahead of print], PubMed PMID: 30082909; PubMed Central PMCID: n/a.

107. Jianfeng Li, David Svilar, Steven McClellan, Burcu Inanc, Jung-Hyun Kim, Erin Ahn, Conchita Vens, David M. Wilson III and **Robert W. Sobol** (2018) "*DNA Repair Molecular Beacons: a platform for real-time functional analysis of cellular DNA repair capacity*", *Oncotarget*, Aug 3;9(60):31719-31743, PubMed PMID: 30167090; PubMed Central PMCID: n/a. (***Highlighted in the issue News & Views***; PMID# 30627317)

108. Pietro Mancuso, Rossella Tricarico, Vikram Bhattacharjee, Laura Cosentino, Emmanuelle Nicolas, Margret Einarson, Neil Beeharry, Karthik Devarajan, Richard A. Katz, Dorjbal G. Dorjsuren, Hongmao Sun, Anton Simeonov, Guillaume Davidson, Irwin Davidson, Lionel Larue, **Robert W. Sobol**, Timothy Yen and Alfonso Bellacosa (2019) *"Thymine DNA Glycosylase as a novel potential target for melanoma therapy", Oncogene*, Jan 23. doi: 10.1038/s41388-018-0640-2, PubMed PMID: 30674989; PubMed Central PMCID: n/a.

109. Qingming Fang, Joel Andrews, Nidhi Sharma, Anna Wilk, Jennifer Clark, Jana Slyskova, Christopher A. Koczor, Hannes Lans, Aishwarya Prakash and **Robert W. Sobol** (2019) "*Stability and subcellular localization of DNA polymerase $\beta$ is regulated by interactions with NQO1 and XRCC1 in response to oxidative stress*", *Nucleic Acids Research*, 47(12):6269-6286; PubMed PMID: 31287140; PubMed Central PMCID: n/a.

110. Mara Sannai, Valentina Doneddu, Veda Giri, Steven Seeholzer, Emmanuelle Nicolas, Shu-Chin Yip, Maria Rosaria Bassi, Pietro Mancuso, Salvatore Cortellino, Antonio Cigliano, Rebecca Lurie, Hua Ding, Jonathan Chernoff, **Robert W. Sobol**, Timothy J. Yen, Luigi Bagella, Alfonso Bellacosa (2019) *"Modification of the base excision repair enzyme MBD4 by the small ubiquitin-like molecule SUMO1"***,** *DNA Repair*, 82:102687; PubMed PMID: 31476572; PubMed Central PMCID: n/a

111. Anna Wilk, Faisal Hayat, Richard Cunningham, Jianfeng Li, Silvia Garavaglia, Leila Zamani, Davide M Ferraris, Peter Sykora, Joel Andrews, Jennifer Clark, Amanda Davis, Laurent Chaloin, Menico Rizzi, Marie Migaud & **Robert W. Sobol** (2020) "*DNA repair regulation by NAD$^+$ biosynthesis is not effected by loss of CD73*", *Scientific Reports*, Jan 20;10(1):651. doi: 10.1038/s41598-020-57506-9; PubMed PMID: 31959836; PubMed Central PMCID: n/a

112. Song-My Hoang, Nicole Kaminski, R. Bhargava, Jonathan Barosso-Gonzalez, M.L. Lynskey, Laura Garcia Exposito, Justin L. Roncaioli, Anne R. Wondisford, Callen T. Wallace, Simon C. Watkins, Dominic I. James, Ian D. Waddell, Donald Ogilvie, Kate M. Smith, Felipe da Veiga Leprevost, Dattatreya Mellacharevu, Alexey I. Nesvishskii, Jianfeng Li, Dominique Ray-Gallet, **Robert W. Sobol**, Genevieve Almouzni and Roderick J. O'Sullivan (2020) "*Regulation of ALT-associated homology-directed repair by polyADP-ribosylation*", *Nature Structural & Molecular Biology*, Oct 12. doi: 10.1038/s41594-020-0512-7; PubMed PMID: 33046907; PubMed Central PMCID: n/a

113. Jing Ge, Le P. Ngo, Simran Kaushal, Ian J. Tay, Elina Thadhani, Jennifer E. Kay, Patrizia Mazzucato, Danielle N. Chow, Jessica L. Fessler, David M. Weingeist, **Robert W. Sobol**, Leona D. Samson, Scott R. Floyd, Bevin P. Engelward (2021) *"CometChip enables parallel analysis of multiple DNA repair activities"***,** *DNA Repair*, Jul 10;106:103176. doi: 10.1016/j.dnarep.2021.103176 (Online ahead of print);

PubMed PMID: 34365116; PubMed Central PMCID: n/a

114. Jung-Hyun Kim*, Kyuho Jeong*, Jianfeng Li*, James Murphy, Lana Vukadin, Joshua K. Stone, Alexander Richard, Johnny Tran, G. Yancey Gillespie, Erik K. Flemington[5], **Robert W. Sobol[#]**, Ssang-Teak Steve Lim[#], and Eun-Young Erin Ahn[#] (2021) "*SON drives oncogenic RNA splicing in glioblastoma by regulating PTBP1/PTBP2 switch and RBFOX2 activity"*, *Nature Communications*, Sep 21;12(1):5551; PubMed PMID: 34548489; PubMed Central PMCID: n/a ([#]Co-Corresponding Authors)

115. Jianfeng Li, Silvia Garavaglia, Zhaofeng Ye, Andrea Moretti, Olga V. Belyaeva, Alison Beiser, Md Ibrahim, Anna Wilk, Steve McClellan, Alla V. Klyuyeva, Kelli R. Brown, Natalia Y. Kedishvili, E. Alan Salter, Andrzej Wierzbicki, Marie E. Migaud, Steven J. Mullett, Nathan A. Yates, Carlos J. Camacho, Menico Rizzi[#] and **Robert W. Sobol[#]** (2021) "*Regulation of retinoic acid biosynthesis in glioma stem cells by a novel and specific inhibitor of ALDH1A3", Communications Biology*, Dec 21;4(1):1420; PubMed PMID: 34934174; PubMed Central PMCID: n/a ([#]Co-Corresponding Authors)

116. Christopher A. Koczor, Kate M. Saville, Joel F. Andrews, Jennifer Clark, Qingming Fang, Jianfeng Li, Rasha Q. Al-Rahahleh, Md Ibrahim, Mikhail V. Makarov, Marie E. Migaud and **Robert W. Sobol** (2021) *"Temporal dynamics of base excision / single-strand break repair protein complex assembly and disassembly are modulated by the PARP/NAD$^+$/SIRT6 axis", Cell Reports*, Nov 2;37(5):109917; PubMed PMID: 34731617; PubMed Central PMCID: n/a

117. Nathaniel W. Snyder, James O`Brien, Bhupinder Singh, Gregory Buchan, Alejandro D. Arroyo, Xiaojing Liu, Anna Bostwick, Erika L. Varner, Anusha Angajala, **Robert W. Sobol**, Ian A. Blair, Clementina A. Mesaros, and Stacy G. Wendell (2021) *"Primary saturation of α, β-unsaturated carbonyl containing fatty acids does not abolish electrophilicity" Chemico-Biological Interactions,* 350, 109689; PubMed PMID: 34634267; PubMed Central PMCID: n/a

118. Jianfeng Li, Kate Saville, Md Ibrahim, Xuemei Zeng, Steve McClellan, Anusha Angajala, Alison Beiser, Joel F. Andrews, Mai Sun, Christopher A. Koczor, Jennifer Clark, Faisal Hayat, Mikhail V. Makarov, Anna Wilk, Nathan A. Yates, Marie E. Migaud and **Robert W. Sobol** (2021) *"NAD$^+$ bioavailability mediates PARG inhibition-induced replication arrest, intra S-phase checkpoint and apoptosis in glioma stem cells", NAR Cancer*, Nov 17;3(4):zcab044; PubMed PMID: 34806016; PubMed Central PMCID: n/a.

119. Jianfeng Li, Alison Beiser, Nupur B. Dey, Shunichi Takeda, Liton Kumar Saha, Kouji Hirota, L. Lynette Parker, Mariah Carter, Martha I. Arrieta and **Robert W. Sobol** (2022) "*A high-throughput 384-well CometChip platform reveals a role for 3-methyladenine in the cellular response to etoposide-induced DNA damage*", NAR Genomics and Bioinformatics – In Press; PubMed PMID: n/a; PubMed Central PMCID: n/a.

120. Jianfeng Li, Christopher A. Koczor, Kate M. Saville, Faisal Hayat, Alison Beiser, Steven McClellan, Marie E. Migaud and **Robert W. Sobol** (2022) "*Overcoming temozolomide resistance in glioblastoma via enhanced NAD$^+$ bioavailability and inhibition of poly-ADP-ribose glycohydrolase*", Cancers, Jul 22;14(15):3572. doi: 10.3390/cancers14153572; PMID: 35892832; PubMed Central PMCID: n/a

121. Christopher A. Koczor, Aaron J. Haider, Kate M. Saville, Jianfeng Li, Joel F. Andrews, Alison V. Beiser, and **Robert W. Sobol** (2022) "*Live Cell Detection of Poly(ADP)-Ribose for Use in Genetic and Genotoxic Compound Screens*", Cancers, Jul 28;14(15):3676. doi: 10.3390/cancers14153676; PMID: 35954352; PubMed Central PMCID: n/a

122. Christopher A. Koczor, Marlo K. Thompson, Nidhi Sharma, Aishwarya Prakash*, and **Robert W. Sobol*** (2023) "*Polβ/XRCC1 heterodimerization dictates DNA damage recognition and basal Polβ protein levels without interfering with mouse viability or fertility*", DNA Repair (Amst) 123, 103452. 10.1016/j.dnarep.2023.103452; PMID: 36702010; PubMed Central PMCID: n/a (*Co-Corresponding)

123. Anton Kratz, Minkyu Kim, Mark Kelly, Fan Zheng, Christopher A. Koczor, Jianfeng Li, Keiichiro Ono, Yue Qin, Christopher Churas, Jing Chen, Rudolf T. Pillich, Jisoo Park, Maya Modak, Rachel Collier, Kate Licon, Dexter Pratt, **Robert W. Sobol***, Nevan Krogan* and Trey Ideker* (*Co-Corresponding Authors) (2023) *"A multi-scale map of protein assemblies in the DNA damage response"* Cell Systems; May 16:S2405-4712(23)00116-3. doi: 10.1016/j.cels.2023.04.007**;** PMID: 37220749; PubMed Central PMCID: n/a

124. L. Lynette Parker, Chantel M. Bonner, **Robert W. Sobol**, Martha I. Arrieta (2023) "*Co-Creation and Engagement in a DNA integrity Cohort Study*" Journal of Clinical and Translational Science; **In Press**; PMID: n/a; PubMed Central PMCID: n/a

**Refereed articles submitted**

**Submitted / Under Review**

***C-Terminal Residues of DNA polymerase β Required for Ubiquitin-Linked Proteolysis of Oxidative DNA-Protein Crosslinks***
Jason L. Quiñonesa, Meiyi Tang, Qingming Fang, **Robert W. Sobol**, and Bruce Demple
Revision to be submitted – DNA Repair

***TRIP12 governs DNA Polymerase β involvement in DNA damage response and repair***
Burcu Inanc, Qingming Fang, Joel F. Andrews, Xuemei Zeng, Jennifer Clark, Jianfeng Li, Nuper B. Dey, Md Ibrahim, Peter Sykora, Zhongxun Yu, Andrea Braganza, Marcel Verheij, Jos Jonkers, Nathan A. Yates, Conchita Vens and **Robert W. Sobol**
Revision to be submitted – Cell Reports

***Novel base excision repair function of RECQ1 in euchromatin beyond replication and double-strand break repair***
Nikhil K. Basu, Boya Gao, Li Lan, **Robert W. Sobol**, Eric Glasgow and Rabindra Roy
Revision to be submitted – Nucleic Acids Research

***Overexpression of the WWE domain of RNF146 modulates poly-(ADP)-ribose dynamics at sites of DNA damage***
Rasha Q. Al-Rahahleh, Kate M. Saville, Joel F. Andrews, Christopher A. Koczor, and **Robert W. Sobol**
Revision to be submitted – Cells

**Reviews, invited commentaries, invited published papers, proceedings of conference and symposia, monographs, books, and book chapters**

1. Almeida, K.H. and **Sobol, R.W.** "Increased Specificity and Efficiency of Base Excision Repair through Complex Formation" in DNA Damage Recognition (2005) Marcel Dekker Inc., New York; Wolfram Siede, Paul Doetsch & Yoke W. Kow, Editors; PMID: N/A, PMCID: N/A.

2. Almeida, K.H. and **Sobol, R.W.** "A unified view of base excision repair: lesion-dependent protein complexes regulated by post-translational modification" (2007) DNA Repair 6, 695-711; PMID: 17337257, PMCID: PMC1995033.

3. **Sobol, R.W.** Temozolomide (2009) Encyclopedia of Cancer 2. In: Schwab M, editor.: Springer Berlin Heidelberg; p. 2928-2933; PMID: N/A, PMCID: N/A.

4. **Sobol, R.W.**, "CHIPping Away at Base Excision Repair" (2008) *Molecular Cell*, Feb 29; 29(4):413-415**;** PMID: 18313379, PMCID: N/A ***(Invited Commentary)***.

5. Svilar, D., Goellner, E.M., Almeida, K.H., & **Sobol, R.W.** "Base Excision Repair and lesion-dependent sub-pathways for repair of oxidative DNA damage" (2011) *Antioxidants and Redox Signaling*, Jun 15;14(12):2491-507; PMID: 20649466, PMCID: PMC3096496.

6. Goellner, E.M., Svilar, D., Almeida, K.H., & **Sobol, R.W.** "Targeting DNA Polymerase ß for therapeutic intervention" (2012) *Current Molecular Pharmacology,* 5(1): 68-87; PubMed PMID: 22122465, PMCID: PMC3894524.

7. Vens, C., and **Sobol, R.W.** "Targeting DNA Repair Pathways for Cancer Therapy" in *Cell Death Signaling in Cancer Biology and Treatment* (2013) Daniel E. Johnson, Editor; Book Series Cell Death in Biology and Diseases, V.1, Xiao-Ming Yin, and Zheng Dong, Editors; Springer, New York. PMID: N/A; PMCID: N/A.

8. **Sobol, R.W.**, "For MutY, it's all about the OG" (2012) *Chemistry & Biology*, Mar 23; 19(3):313-4; PMID: 22444586, PMCID: PMC3891578. ***(Invited Commentary)***.

9. **Sobol, R.W.**, "Genome instability caused by a Germline Mutation in the human DNA repair gene POLB" (2012) *PLoS Genet* 8(11): e1003086; PMID: 23144636, PMCID: PMC3493457 ***(Invited Commentary).***

10. **Sobol, R.W.** Temozolomide (2012) Encyclopedia of Cancer 3. In: Schwab M, editor: Springer Berlin Heidelberg; p. 3637-42; PMID: N/A, PMCID: N/A.

11. Li, J., Braganza, A., & **Sobol, R.W.**, "Base excision repair facilitates a functional relationship between Guanine oxidation and histone demethylation" (2013) *Antioxidants and Redox Signaling*, June 20;18(18): 2429-43. PMID: 23311711 PMCID: PMC3671628.

12. **Sobol, R.W.**, "DNA Repair Polymerases" *in Nucleic Acid Polymerases* (2013) Michael Trakselis and Katsu Murakami, Editors; Springer, New York. PMID: N/A; PMCID: N/A.

13. Williams, K, **Sobol, R.W.**, "Mutation research/fundamental and molecular mechanisms of mutagenesis: special issue: DNA repair and genetic instability." *Mutat Res*.2013 Mar-Apr; 743-744:1-3. PMID: 23688353; PMCID: PMC3909961.

14. Fouquerel, E., Li, J., Braganza, A., Yu, Z., Brown, A.R., Wang, X.H., Schamus, S., Svilar, D., Fang, Q. and **Sobol, R.W.**, "Use of RNA interference to study DNA repair" in *Genotoxicity and DNA REPAIR: A PRACTICAL APPROACH* (2014) L. María Sierra & Isabel Gaivão, Editors; Springer, New York. PMID: N/A; PMCID: N/A.

15. Shaughnessy, D.T., McAllister, K., Worth, L., Haugen, A.C., Meyer, J.N., Domann, F.E., Van Houten, B., Mostoslavsky, R., Bultman, S.J., Baccarelli, A.A., Begley, T.J., **Sobol, R.**, Hirschey, M.D., Ideker, T., Santos, J.H., Copeland, W.C., Tice, R.R., Balshaw, D.M., Tyson, F.L., "Mitochondria, Energetics, Epigenetics, and Cellular Responses to Stress." (2014) Environ Health Perspect. 2014 Dec;122(12):1271-8, Review. PMID: 25127496.

16. Fouquerel, E., **Sobol, R.W.**, "ARTD1 (PARP1) activation and NAD(+) in DNA repair and cell death." (2014) *DNA Repair* (Amst). 2014 Nov;23:27-32. doi: 10.1016/j.dnarep.2014.09.004. Epub 2014 Oct 3. PMID: 25283336; PubMed Central PMCID: n/a.

17. **Sobol, R.W.** "Preface: NAD Metabolism & Signaling: Critical pathways in bacteria, yeast and mammals influencing genome stability, cell survival and disease" DNA Repair (Amst). Nov;23:1-3. doi: 10.1016/j.dnarep (2014).10.007. Epub 2014 Nov 15. No abstract available. PMID: 25454703

18. Soll JM, **Sobol RW*** and Mosammaparast N* "Regulation of DNA Alkylation Damage Repair: Lessons and Therapeutic Opportunities" (2017) Trends Biochem Sci, 42(3):206-218 (*Corresponding Author). PMID: 27816326; PMC: PMC5336464.

19. Zachary D. Nagel, Bevin P. Engelward, David J. Brenner, Thomas J. Begley, **Robert W. Sobol**, Jason H. Bielas, Peter J. Stambrook, Qingyi Wei, Jennifer J. Hu, Mary Beth Terry, Caroline Dilworth, Kimberly A. McAllister, Lesley Reinlib, Leroy Worth, Daniel T. Shaughnessy "Towards Precision Prevention: Identifying Healthy Individuals with High Risk of Disease" (2017) Mutat Res. Apr 6;800-802:14-28, PMID: 28458064; PubMed Central PMCID: n/a.

20. Priyamvada Rai and **Robert W. Sobol** "*Mechanisms of MTH1 inhibition-induced DNA strand breaks: the slippery slope from the oxidized nucleotide pool to genotoxic damage*" (2019) DNA Repair, 77, 18-26; PubMed PMID: 30852368; PubMed Central PMCID: n/a.

21. **Robert W. Sobol** "*DNA Damage: Alkylation*" (2020) Encyclopedia of Biological Chemistry 3rd Edition.

22. Kate M. Saville, Jennifer Clark, Anna Wilk, Gresyn D. Rogers, Joel Andrews, Christopher A. Koczor and **Robert W. Sobol** "*$NAD^+$-mediated regulation of mammalian base excision repair*" (2020) DNA Repair, *Special Issue on honor the Editor in Chief, Samuel H. Wilson*, Sep;93:102930; PubMed PMID: 33087267; PubMed Central PMCID: PMC7586641.

23. Marlo K. Thompson, **Robert W. Sobol** and Aishwarya Prakash "*Exploiting DNA Endonucleases to Advance Mechanisms of DNA Repair*" (2021) Biology (Basel), Special Issue on "Mechanisms of DNA Repair in the Context of Transcription, Replication and Recombination", Jun 14;10(6):530. doi: 10.3390/biology10060530; PubMed PMID: 34198612; PubMed Central PMCID: n/a.

24. Shingo Fujii, **Robert W. Sobol*** and Robert P. Fuchs* (*Co-Corresponding Authors) "*Double-Strand Breaks: when DNA Repair Events Accidentally Meet*" (2022) DNA Repair, Apr;112:103303. doi: 10.1016/j.dnarep.2022.103303. Epub 2022 Feb 19; PubMed PMID: 35219626; PubMed Central PMCID: n/a.

25. Christopher A. Koczor, Kate M. Saville, Rasha Q. Al-Rahahleh, Joel F. Andrews, Jianfeng Li and **Robert W. Sobol** "*Quantitative analysis of nuclear poly(ADP-ribose) dynamics in response to laser-induced DNA damage*" (2023) in 3rd edition of "Poly(ADP-ribose) Polymerase - Methods and Protocols"; Methods Mol Biol. 2023;2609:43-59. doi: 10.1007/978-1-0716-2891-1_3. PMID: 36515828, PMCID: N/A.

26. Shan Yan, Jianjun Zhao, Michael Kemp, and **Robert W. Sobol** "*Editorial: Mechanistic Studies of Genome Integrity, Environmental Health, and Cancer Etiology*" (2022) Front Cell Dev Biol., Sep 28;10:1026326; PubMed PMID: 36247007; PubMed Central PMCID: n/a.

27. **Robert W. Sobol** "*WRN suppresses p53/PUMA-induced apoptosis in colorectal cancer with microsatellite instability/mismatch repair deficiency*" (2023) Jan 10;120(2):e2219963120. doi: 10.1073/pnas.2219963120; ***Invited Commentary*** on "Synthetical lethality of Werner helicase and mismatch repair deficiency is mediated by p53 and PUMA in colon cancer" (10.1073/pnas.2211775119), PubMed PMID: 36598947; PubMed Central PMCID: n/a.

28. Yeh Chin, Khanisyah E Gumilar, Xing-Guo Li, Brahmana A. Tjokroprawiro, Chien-Hsing Lu, Jianrong Lu, Ming Zhou, **Robert W. Sobol**, and Ming Tan. "*Targeting HSF1 for Cancer Treatment: Mechanisms and Inhibitor Development*" (2023) Theranostics, Apr 17;13(7):2281-2300. doi: 10.7150/thno.82431. PubMed PMID: 37153737; PubMed Central PMCID: n/a.

**Published abstracts**

1. Monzon, F.A., Alvarez, K., Lyons-Weiler, M.A., Kim, H.J., **Sobol, R.,** Chang, C.C., Huang, W.T., Hagenkord, J.M.: "Reproducibility and Performance of Virtual Karyotyping with SNP microarrays for the detection of chromosomal aberrations in formalin-fixed paraffin-embedded tissues". *Association for Molecular Pathology* 2008.

2. Ueda, R., Kohanbush, G., Sasaki, K., Fujita, M., Zhu X., Lotze, M.T., **Sobol, R.W.**, Okada, H.: "Dicer-regulated micro RNAs 222 and 339 promote immune-escape of cancer cells through downregulation of ICAN-1". *American Association for Cancer Research* 2008.

3. **Sobol, R.W.**, Tawbi, H., Jukic, D.M., Mule, K., Mascari, R., Kirkwood, J.M.: "Mismatch repair (MMR) and Base Excision Repair (BER) protein expression correlates with clinical response to Dacarbazine (DTIC)/Temozolomide (TMZ) therapy of patients with metastatic melanoma**."** *Proc Am Soc Clin Oncol* 2006.

4. Ochs, K., **Sobol, R.W.,** Wilson, S., Kaina, B.: "Mammalian cells deficient in DNA polymerase beta are hypersensitive to alkylating agent-induced cytotoxicity, apoptosis and chromosomal breakage." *Naunyn-Schmiederbergs Archives of Pharmacology* 1998.

5. Trivedi, R.N., Schamus, S., **Sobol, R.W**.: "RNAI-mediated pol-beta silencing results in increased sensitivity to temozolomide." *Environmental and Molecular Mutagenesis* 2004.

6. Tomicic, M.T., Thust, R., **Sobol, R.W.,** Kaina, B.: "DNA polymerase beta mediates protection of mammalian cells against ganciclovir-induced cyto- and genotoxicity: implications for gene therapy." *Antiviral Research* 2002.

7. Cabelof, D.C., Ikeno, Y., **Sobol, R.W.,** Tucker, J.D., Wilson, S.H., Richardson, A., Heydari, A.R.: "Induction of chromosomal instability and tumors in beta-pol haplo-insufficient mice." *Environmental and Molecular Mutagenesis* 2004.

8. Trivedi, R.N., Schamus, S., **Sobol, R.W**.: "RNAi-mediated pol-beta silencing results in increased sensitivity to temozolomide." *Environmental and Molecular Mutagenesis* 2004.

9. Pollack, I.F., Hamilton, R.L., Burnham, J., **Sobol, R.W.,** Finkelstein, S.D., Yates, A.J., Holmes, E.J., Zhou, T., Finlay, J.L.: "Molecular predictors of outcome in childhood malignant gliomas: The Children's Oncology Group experience." *Neuro-Oncology* 2007.

10. **Sobol, R.W.:** "Genome Stability calls for balanced base excision repair protein expression." *Environmental and Molecular Mutagenesis* 2007.

11. Tang J., Trivedi R.N., Goellner E.M., Wang X.H., Gaudi A.R., **Sobol R.W.**, "Cellular response to base damage involves the interplay of base excision repair and NAD(+) metabolism proteins" *Environmental and Molecular Mutagenesis* 49 (7) 2008.

12. Jacob K.D., **Sobol R.W**., Eckert K.A., "The effect of reduced levels of human DNA polymerase on Microsatellite mutagenesis in human cells" *Environmental and Molecular Mutagenesis* 49 (7) 2008.

13. **Sobol R.W,** Tang J., Goellner E.M., Wang, X.H., Trivedi R.N., St. Croix C.M., Jelezcova E., Brown A.R. "The Intimate Relationship between Base Excision Repair and $NAD^+$ Biosynthesis in the Response to Chemotherapy-Induced DNA Damage" *Environmental and Molecular Mutagenesis* 50 (7) 2009.

14. Tawbi, H., Lin, Ying-Chih, Vallaruz, L., Egorin, M.J., Beumer, J.H., Kirkwood, J.M., **Sobol, R.W**., "Enhanced cytotoxicity of carboplatin and paclitaxel (CP) by voriinostat (SAHA), a histone deacetylase (HDAC) inhibitor, in melanoma cell lines" American Association for Cancer Research 2010.

15. E Fouquerel, Z Yu, J Li, **RW Sobol** ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; Volume 55; Pages S36-S36 (2014).

16. Jingnan Wang, Wei Qian, Masahiro Shuda, Jianfeng Li, Lucas Santana-Santos, **Robert W Sobol**, Bennett Van Houten Cancer Research Volume 74; Issue 19 Supplement; Pages 5085-5085 (2014).

17. **Robert W. Sobol** ANTICANCER RESEARCH Volume 34; Issue 10; Pages 6178-6178 (2014).

18. Rohith Srivas, John Paul Shen, Jian Feng Li, Katherine Licon, Ze Zhong Wang, Ana Bojoquez-Gomez, Lucy Xu, Andrew Gross, Gordon Bean, **Robert W. Sobol**, and Trey Ideker “High-throughput synthetic lethal interaction screening in model organisms as a strategy for the identification of novel therapeutic targets in cancer” Mol Cancer Res November 2014 12:B34; doi:10.1158/1557-3125.

19. SR Woodgate, C Whittaker, J George, S Schamus-Haynes and **RW Sobol**, Cancer Research 74 (19 Supplement), 2379-2379

20. John Paul Shen, Rohith Srivas, Ana Bojorquez-Gomez, Katherine Licon, Vignesh Sivaganesh, Jia L. Xu, Huwate Yeerna, Andrew Gross, Jian Feng Li, **Robert W. Sobol**, and Trey Ideker “RAD17 loss of function is synthetically lethal with the checkpoint kinase inhibitors AZD7762 or MK-1775” Cancer Res August 1, 2015 75:129; doi:10.1158/1538-7445.

21. Rossella Tricarico, Pietro Mancuso, Vikram Bhattacharjee, Neil Beeharry, Emmanuelle Nicolas, Margret Einarson, Laura Cosentino, Irwin Davidson, Lionel Larue, **Robert W. Sobol**, Timothy J. Yen, and Alfonso Bellacosa “TDG, a dual genomic and epigenomic regulator, as a novel antimelanoma target” Cancer Res August 1, 2015 75:LB-249; doi:10.1158/1538-7445.

22. Fang, Q; Brown, AR; Wang, X; **Sobol, RW** “Altered Mechanisms of Stability for Somatic Mutants of DNA Polymerase beta” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56, S59-S59.

23. Andrews, J; Dey, N; Wilk, A; **Sobol, RW** “PARP1-Mediated Nuclear to Mitochondrial Communication” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56, S60-S60.

24. Lormand, J; Fouquerel, E; Freudenthal, B; **Sobol, RW**; Myong, S; Opresko, PL “Investigating How Oxidative DNA Damage Influences Telomere Maintenance” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56, S50-S50.

25. Wilk, AM; Johnston, B; Fouquerel, E; Cooper, SJ; **Sobol, RW** “Hyperactivation of Poly (ADP-ribose) Polymerase 1 (PARP1) Triggers Global Metabolic Alterations in a Cellular Model of Glioblastoma” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56, S61-S61.

26. Li, J; Svilar, D; Inanc, B; Gibson, SP; Ferris, RL; Vens, C; **Sobol, RW** “Quantitative, Real-time Analysis of Base Excision Repair Activity Using Lesion-Specific Molecular Beacons” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56, S67-S67.

27. Clark, JE; Fang, Q; Zeng, X; Yates, NA; **Sobol, RW** “Differentiating Pol beta and Pol beta/XRCC1 Repair Protein Complexes Using a Promiscuous Biotin Ligase Fusion System” (2015) ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; v56 S65-S65.

# University of Pittsburgh - Teaching

**Fall semester**; 2003 – 2014
**Cancer Biology and Therapeutics Course**
**Course Number:** MSCMP 3710 and MSPHL 3310
**Lecture:** DNA Repair
The Integrated Program in Biomedical Sciences and the Departments of Pathology & Pharmacology
University of Pittsburgh School of Medicine

**Cancer Biology and Therapeutics Course**
**Course Number:** MSCMP 3710 and MSPHL 3310
**Lecture:** Targeting DNA Repair Pathways to enhance chemotherapeutic efficacy
The Integrated Program in Biomedical Sciences and the Departments of Pathology & Pharmacology
University of Pittsburgh School of Medicine

**Fall semester**; 2004 - 2005
**Foundations of Biomedical Science Conference Course**
**Course Number**: INTBP 2005 Conferences
The Integrated Program in Biomedical Sciences and the Departments of Pathology & Pharmacology
University of Pittsburgh School of Medicine

**Spring semester**; 2004
**Pharmacology Course – Conferences**
Department of Pharmacology
University of Pittsburgh School of Medicine

**Fall semester**; 2005 - 2009
**Foundations of Biomedical Science Lecture Course**
**Course Number:** INTBP 2005
**Lectures**: Genome Stability I-IV
The Integrated Program in Biomedical Sciences and the Departments of Pathology & Pharmacology
University of Pittsburgh School of Medicine

**Spring semester**; 2006, 2008, 2010, 2012, 2014
**DNA Repair: Biochemistry to Human Disease**
**Course Number:** MSMPHL 3330 & MSBMG 3530
Co-Director
The Integrated Program in Biomedical Sciences and the Departments of Molecular Biology and Genetics & Pharmacology; University of Pittsburgh School of Medicine

**Spring semester**; 2007
**Neuropharmacology Workshop – Conferences**
Department of Pharmacology
University of Pittsburgh School of Medicine

**Fall semester**; 2007-2009, 2012
**Adrenergic Pharmacology Workshop – Conferences**
Department of Pharmacology
University of Pittsburgh School of Medicine

**Fall semester**; 2007-2009
**Cholinergic Pharmacology Workshop – Conferences**
Department of Pharmacology
University of Pittsburgh School of Medicine

**Fall semester**; 2009
**Rational Use of Drugs Workshop – Conference (8-19-09; 2 hrs)**
Department of Pharmacology & Chemical Biology
University of Pittsburgh School of Medicine

**Spring and Fall semester**; 2008 - 2014
**DNA Repair Journal Club**
**Course Number**: MSBMG 3535, MSCBMP 3835 and MSMPHL 3335
Co-Director
The Integrated Program in Biomedical Sciences
The Department of Molecular Microbiology and Genetics
The Department of Pharmacology and Chemical Biology
University of Pittsburgh School of Medicine

**Spring semester**; 2009
**Gene Delivery Course**
**Course Number:** MSMVM 3465
**Lecture:** Lentiviral Vectors
Department of Microbiology and Molecular Genetics
University of Pittsburgh School of Medicine

**Winter 2016**
**Visiting Lecturer – University of Pittsburgh**
**DNA Repair: Biochemistry to Human Disease**
**Course Number:** MSMPHL 3330 & MSBMG 3530
The Integrated Program in Biomedical Sciences and the Departments of Molecular Biology and Genetics & Pharmacology; University of Pittsburgh School of Medicine

## University of South Alabama - Teaching

**Spring 2015, 2017, 2022**
**Cancer Biology**
**Course Number:** IDL-560
University of South Alabama, School of Medicine
**Lecture:** Targeting DNA Repair Pathways to enhance chemotherapeutic efficacy
**Lectures:** DNA damage, repair, and cancer & Synthetic Lethality Approach in cancer therapy

**Fall 2018-2020**
**GIS**
**Responsible Conduct of Research**
**Course Number:** 501
University of South Alabama, School of Medicine
**Lecture:** Authorship and Peer Review

**Fall 2020, 2021**
**Topics in Cancer Biology**
**Course Number:** IDL-566-101
University of South Alabama, School of Medicine
**Lecture:** Ovarian Cancer and Tumor Organoids

# University of Pittsburgh - TRAINING/MENTORING

**Undergraduate Students research training**

**(1) Trainee**: Laura Vincent
**Training period:** 05/2004 through 08/2004, Summer Undergraduate Research Program (SURP).
**Research Topic:** Measure of DNA glycosylase activity in tumor cell extracts.

**(2) Trainee**: Tom Rodomski
**Training period:** 05/2004 through 08/2004, Summer Undergraduate Research Program (SURP) and 05/2005 through 08/2005, Summer Undergraduate Research Program (SURP).
**Research Topic:** Development of novel plasmid expression vectors.

**(3) Trainee**: Ian Humphreys
**Training period:** Spring 2004
**Research Topic:** General Laboratory assistance

**(4) Trainee**: Candace Roman
**Training period:** 09/04 through 05/05
**Research Topic:** General Laboratory assistance

**(5) Trainee**: Michael Nathanson
**Training period:** 05/2005 through 08/2005, Summer Undergraduate Research Program (SURP).
**Research Topic:** Whole genome mRNA expression analysis of human and mouse cells with a deficiency in pol-ß and exposed to chemotherapeutic alkylating agents.

**(6) Trainee**: Rachel Hardenstine
**Training period:** 09/05 to 09/06 and 09/07 to 06/08.
**Research Topic:** General Laboratory assistance.

**(7) Trainee**: Ashley Gaudi Brown
**Training period:** 05/06 to 08/06
**Research Topic:** General Laboratory assistance.

**(8) Trainee**: Shannon Gay
**Training period:** 05/06 to 08/06 and 05/07 to 08/07.
**Research Topic:** General Laboratory assistance (2006) and mutation analysis (2007).

**(9) Trainee**: Kim Fair
**Training period:** 09/06 to 12/06
**Research Topic:** General Laboratory assistance.

**(10) Trainee**: Bradford Grimme
**Training period:** 10/07 to 05/08
**Research Topic:** General Laboratory assistance.

**(11) Trainee**: Jeffrey Eugene
**Training period:** 06/09 to 08/09
**Research Topic:** General Laboratory assistance.

**(12) Trainee**: Brianna Moore
**Training period:** 06/09 to 08/09
**Research Topic:** General Laboratory assistance.

**(13) Trainee:** Lauren Banze
**Training period:** 09/09 to present
**Research Topic:** General Laboratory assistance and optimization of the Bacteriomatch system for protein-protein interaction analysis in *E. coli*.

**(14) Trainee**: Alison Zeccola
**Training period:** 01/10 to 6/10
**Research Topic:** General Laboratory assistance.

**(15) Trainee**: Kelsey Sugrue
**Training period:** Summer 2010 (Volunteer) and summer 2011, SURP Fellow
**Research Topic:** General Laboratory assistance (2010); Project title: "Defining and interrupting the interaction between Polß and XRCC1".

**(16) Trainee**: Yanbo Chang
**Training period:** Summer 2011
**Research Topic:** Probing poly-ADP-ribose expression in cell lines with DNA repair deficiency.

**(17) Trainee**: Tyler Sevco
**Training period:** 01/10 to 6/10
**Research Topic:** General Laboratory assistance.

**(18) Trainee:** Brianna Edwards
**Training period:** 09/09 to 06/10
**Research Topic:** General Laboratory assistance

**(19) Trainee:** Donya Eizadkhah
**Training period:** 09/09 to 06/10
**Research Topic:** General Laboratory assistance

**Training as part of the University of Pittsburgh "First Experiences in Research" Program**

**Spring Semester (2010-2013)**

Trainees:

1) Brittany Charsar (2010)
2) Tyler Sevco (2010)
3) Brianna Edwards (2010)
4) Donya Eizadkhah (2010)
5) Alyssa Standlick (2011)
6) Charlie Fencil (2011)
7) Nicholas Burton (2011)
8) Jonathan Korpon (2012)
9) Megan Link (2012)
10) Kathryn Ching (2013)
11) Nick Xerri (2013)

Students are engaged in 5-10 hours of research per week, working in concert on the development and characterization of DNA plasmids for expression of mutant forms of DNA polymerase beta (Polβ) or BER-related DNA repair proteins. The goal is to develop mutants of Polβ that no longer interact with the DNA repair protein XRCC1 (2010), a mutant of Polβ that cannot be phosphorylated on amino acid residue Y250 (2011), mutants in a DNA polymerase beta cDNA clone and verify correct DNA sequence for each (2012) and mutants in a human methyl purine DNA glycosylase cDNA clone and verify correct DNA sequence for each (2013).

**Training as part of the University of Pittsburgh Summer Undergraduate Research Program (SURP)**
The Summer Undergraduate Research Program (SURP), administered by the Interdisciplinary Biomedical Graduate Program (IBGP), provides stimulating and rewarding research opportunities for undergraduates considering graduate education in biomedical research.

**Summer - 2011**
Trainee: Kelsey Sugrue
Project: Kelsey optimized a bacteriomatch two-hybrid system and evaluated the interaction interface between the DNA repair scaffold protein XRCC1 and the DNA repair protein DNA polymerase ß.

**Summer - 2013**
Trainee: Haopei Wang
Project: Haopei centered on Mouse DNA polymerase ß: cloning ubiquitylation mutants of Polß that regulate protein stability.

**Summer - 2014**
Trainee: Jonathan Marks
Project: Jonathan validated PAR-bound and PAR-modified proteins in glioblastoma cells in response to DNA damage.

## GRADUATE PROGRAM (University of Pittsburgh)

**Comprehensive Examination Committee member**

1) Jennifer M. Johnson; Biochemistry and Molecular Biology program, 2003.
2) John Caltagarone; Molecular Pharmacology program, 2003.
3) Dev Chandra; Molecular Pharmacology program, 2005.
4) Janine Batholemew; Molecular Pharmacology program, 2006.
5) Alex Bank; Molecular Pharmacology program, 2006.
6) Antonia A. Nemec; Graduate School of Public Health, 2007.
7) Amy Furda; Molecular Pharmacology program, 2008.
8) Kun-Wei Liu; Cellular and Molecular Pathology program, 2007.
9) Serah Choi; Molecular Pharmacology program, 2009.
10) Rama Damerla; Environmental & Occupational Health Program, 2009.
11) Joshua Jamison; Molecular Pharmacology Program, 2009.
12) Nicole Seneca; Molecular Virology Program, 2009.
13) Hussein Tawbi; Clinical & Translational Sciences Program, 2010.
14) Anne Lipton; Molecular Pharmacology program, 2010.
15) Cassandra Henry; Molecular Pharmacology program, 2010 (Chair).
16) Madhav Sankunny; Department of Human Genetics, 2011.
17) Mohammad Towheed; Molecular Pharmacology program, 2011 (Chair).
18) Andrey Finegersh; Molecular Pharmacology program, 2012 (Chair).
19) Kyle Knickelbein; Molecular Pharmacology program, 2013 (Chair).

**Graduate Students – Rotations**

**(1) Trainee**: Miranda Sarachine
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 09/2004 through 12/2004, laboratory rotation.
**Research Topic:** DNA pol-ß acetylation mediated by p300.

**(2) Trainee**: Christi Kolarcik

Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 01/2004 through 03/2005, laboratory rotation.
**Research Topic:** DNA pol-ß acetylation mediated by p300.

**(3) Trainee**: Eva Goellner
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 06/2006 through 09/2006, laboratory rotation.
**Research Topic:** Cloning and expression of mouse DNA polymerase ß.

**(4) Trainee**: Amy Furda
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 06/2007 through 09/2007, laboratory rotation.
**Research Topic:** Lentiviral Expression of shRNA.

**(5) Trainee**: Lindsey Harte
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 06/2007 through 09/2007, Laboratory rotation.
**Research Topic:** Regulation of PARG by Lentiviral Expression of shRNA.

**(6) Trainee**: Kelly Quesnelle
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 06/2007 through 09/2007, laboratory rotation.
**Research Topic:** PTM identification in human Pol ß

**(7) Trainee**: David Svilar
M.D./Ph.D. student, The University of Pittsburgh Medical Scientist Training Program, University of Pittsburgh School of Medicine
**Training period:** 07/2008 through 03/2012, MD/Ph.D. student.
**Research Topic:** The Role of DNA polymerase beta in gastrointestinal hyperplasia – laboratory rotation. Mitochondrial dysfunction and oxidative repair in the response to alkylation – PhD Work

**(8) Trainee**: Sarah Bidula
**Training period**: 09/09 – 12/09
**Research Topic:** DNA Polymerase Beta in Streptozotocin induced diabetes.

**(9) Trainee**: Subhara Raveendran
**Training period**: 09/11 – 12/11
**Research Topic:** Involvement of BER proteins in transcription

**(10Trainee**: Andrea Braganza
**Training period**: 04/12 – 7/12
**Research Topic:** Mechanism of action of the ubiquitin ligase UBE3B

**(11) Trainee**: Zhongxun (Albert) Yu ***[Tsinghua Scholar]***
**Training period**: 09/27/12 – 10/07/12
**Research Topic:** Gene discovery using lentiviral shRNA pools

**(12) Trainee**: Morgan E. Preziosi
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period**: 05/13-09/13
**Research Topic:** Mouse DNA polymerase ß: analysis of ubiquitylation mutants of Polß that regulate protein stability

**(13) Trainee**: Soma Jobbágy

The University of Pittsburgh Medical Scientist Training Program, University of Pittsburgh School of Medicine
**Training period:** 06/03/13 through 08/1/13
**Research Topic:** Evaluation of PARP4 activity and expression in Proneural (PN) and Mesenchymal (MES) glioma stem cells

**Master's Thesis Defense Committee**
Hussein Tawbi, M.D., 2007.

**Ph.D. Thesis Committee Member**
1) Anne Lipton; Molecular Pharmacology program, 2010-2013 (Chair).
2) Amy Furda; Molecular Pharmacology program, 2010-2011.
3) Rama Damerla; Human Genetics program, 2010.
4) Matthew F Brown; Cellular and Molecular Pathology program, 2012-2013.
5) Danushka Seneviratne; Cellular and Molecular Pathology program, 2012-2013.
6) Kyle Knickelbein; Molecular Pharmacology program, 2013-2014.
7) Dee Seneviratne; Cellular and Molecular Pathology program, 2014.
8) Lia Edmunds; Mole Genetics & Dev Biology program, 2014.

**Graduate Students (University of Pittsburgh)**
**(1) Trainee**: Jiang-bo Tang, Ph.D
Ph.D. student, The University of Pittsburgh Human Genetics Graduate Program, School of Public Health
**Training period:** 09/2005 through 4/2010
**Current Position:** Scientist at Alliance Pharma Inc (Malvern, PA) as of February 2014.
**Research Topic (Thesis title):** Glioma chemotherapy sensitization mediated by inhibition of base excision repair and its potential application
**Prior Academic Degree Institution(s):** Department of BioPharmaceutics, College of Life Sciences, Wuhan University
**Prior Academic Degree(s):** B.S.; **Prior Academic Degree Year(s):** 2001

**(2) Trainee**: Eva Goellner, PhD
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 07/2006 through 09/2006, laboratory rotation and 04/2007 through 08/2011, Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Current Position:** Post-doctoral fellow. Laboratory of Richard Kolodner, Ludwig Institute for Cancer Research, University of California San Diego.
**Research Topic (Thesis title):** Demonstrating functional crosstalk between DNA base excision repair and cellular bioenergetics: A strategy for the treatment of chemotherapy resistant glioblastoma
**Prior Academic Degree Institution(s):** Carnegie Mellon University
**Prior Academic Degree(s):** B.S., Chemical Engineering and Biomedical Engineering
**Prior Academic Degree Year(s):** 2006

**(3) Trainee**: David Svilar, PhD
M.D./Ph.D. student, The University of Pittsburgh Medical Scientist Training Program, University of Pittsburgh School of Medicine
**Training period:** 06/2006 through 09/2006 (laboratory rotation), 07/2008-04/12, Post-Doctoral Research 1/2014-5/2014
**Current Position:** M.D., (July 2014), Resident at St. Louis Children's Hospital at Washington University in St. Louis, Missouri
**Research Topic (Thesis title):** DNA glycosylases as modulators of chemotherapeutic response
**Prior Academic Degree Institution(s):** Case Western Reserve University
**Prior Academic Degree(s):** B.S.; **Prior Academic Degree Year(s):** 2006

**Awards/Support:** Environmental Mutagen Society New Investigator/Student Travel Award, University of Pittsburgh Interdisciplinary Biomedical Graduate Program Travel Award, Molecular Pharmacology Fellowship 09/2010-09/2011, Best Poster at Department of Pharmacology and Chemical Biology's Annual Retreat 02/2012, Best Poster in Molecular Pharmacology training program at Biomedical Graduate Student Association Symposium 2010

**(4) Trainee**: Albert (Zhongxun) Yu
M.D./Ph.D. student, Tsinghua scholars Program
**Training period:** 08/2012 through 09/2012 (laboratory rotation), 10/2012-8/2014
**Current Position:** Medical Student, Tsinghua University
**Research Topic:** PARP1-mediated recruitment of alternate DNA repair proteins in response to base damage
**Prior Academic Degree Institution(s):** Tsinghua University

**(5) Trainee**: Andrea Braganza
Ph.D. student, The University of Pittsburgh Interdisciplinary Biomedical Graduate Program
**Training period:** 03/2012 through 06/2012 (laboratory rotation), 07/2012-8/2015
**Current Position:** Post-doctoral fellow, University of Pittsburgh
**Research Topic:** Mechanism of action of the ubiquitin ligase UBE3B
**Prior Academic Degree Institution(s):** Rochester Institute of Technology
**Prior Academic Degree(s):** B.S.; **Prior Academic Degree Year(s):** 2008

**<u>Postdoctoral Fellows</u> (University of Pittsburgh)**
**Trainee**: Qingming Fang, M.D.; Tongji Medical College of Huazhong University of Science and Technology, China, 1993.
**Training period:** Postdoctoral Research Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology & Chemical Biology, Pittsburgh, PA: 2011-present.
**Current Position:** Staff Scientist, UTHSCSA
**Research Topic:** DNA Polymerase ß in Cancer and Chemotherapy response.

**Trainee**: Jianfeng Li, PhD; Department of Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma, 2008.
**Training period:** Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology & Chemical Biology, Pittsburgh, PA: 2011-present.
**Current Position:** Staff Scientist, Emory University
**Research Topic:** DNA Repair dependent transcriptional modulation

**Trainee**: Elise Fouquerel, PhD; Equipe "Poly(ADP-ribosyl)ation et intégrité du génome", Université de Strasbourg, Strasbourg, France 2011.
**Training period:** Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology & Chemical Biology, Pittsburgh, PA: 2011-June 2014.
**Current Position:** Assistant Prof, University of Pittsburgh
**Research Topic:** PARP and Energy Metabolism in response to DNA Damage

**Trainee**: Carolyn Kitchens, PhD
**Training period:** Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology & Chemical Biology, Pittsburgh, PA: 2012.
**Current Position:** n/a; **Research Topic:** TAL nuclease-mediated gene KO of Polß in human cells

**Trainee**: Ram N Trivedi
Ph.D. Biochemistry, 1995, Agra University, Agra (UP) India
**Training period:** Research Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology, Pittsburgh, PA: 2003-2010.
**Current Position:** Passed away, summer 2016.
**Research Topic:** The Role of base excision repair in alkylating agent response in Glioblastoma.

**Trainee**: Jamie L. Fornsaglio
Ph.D. Molecular and Cellular Oncology, 2004, The George Washington University
**Training period:** Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology, Pittsburgh, PA: 2004-2005.
**Current Position:** Professor, Seton Hill University, Greensburg PA.
**Research Topic:** Role of 5'dRP intermediates in DNA polymerase ß-mediated base excision repair in the onset of DNA damage induced checkpoint response

**Trainee**: Elena N. Jelezcova MD, State Medical and Pharmaceutical University " N. Testemitanu" (Moldova)
**Training period**: Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology, Pittsburgh, PA: Dec 2004-2008.
**Current Position:** N/A
**Research Topic:** Defects in Base Excision Pathway Protein/Protein Interactions as Possible Cause of Squamous Cell Carcinoma of Head and Neck and the role of MPG in base excision repair of chemotherapy-induced DNA damage.

**Trainee**: Karen H. Almeida
Ph.D., Department of Chemistry; Brown University (Providence, RI).
National Institutes of Health Postdoctoral Fellow, Biological Engineering Division
Massachusetts Institute of Technology (Cambridge, MA)
(Developed a targeted fluorescence-based system to detect intrachromosomal recombination in mammalian cells and mice)
**Training period**: Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology, Pittsburgh, PA: Dec 2003-2005.
**Current Position:** Professor, Rhode Island College (Physical Sciences Department)
600 Mt. Pleasant Ave.; Providence, RI 02908-1991
**Research Topic:** The Role of base excision repair in alkylating agent response and the significance of protein-protein interactions in BER

**Clinical Fellows**

**Trainee**: Hussein Tawbi, M.D.
Clinical Oncology Fellow
**Training period:** 09/06 to 07/07
**Current Position:** Assistant Professor, Departments of Medicine and Clinical Translational Science Institute
**Research Topic:** The role of DNA Repair pathways in alkylator responsiveness in melanoma patients
**Awards/Support:** ECOG Paul Carbone, M.D. Fellowship Award; UPCI pilot project, Epigenetic Regulation of DNA Repair: Translational Corollary of UPCI 07-008 Phase I/II Trial of the Combination of Decitabine (Dacogen) and Temozolomide (Temodar) in the Treatment of Patients with Metastatic Melanoma

**Junior Faculty**

**INBRE Mentor** to Karen H. Almeida, Ph.D.
Department of Chemistry; Brown University (Providence, RI).
National Institutes of Health Postdoctoral Fellow, Biological Engineering Division
Massachusetts Institute of Technology (Cambridge, MA)
(Developed a targeted fluorescence-based system to detect intrachromosomal recombination in mammalian cells and mice)
**Training period**: Postdoctoral Associate, University of Pittsburgh Cancer Institute and University of Pittsburgh Department of Pharmacology, Pittsburgh, PA: Dec 2003-2005.
**Current Position:** Professor, Rhode Island College (Physical Sciences Department)
600 Mt. Pleasant Ave.; Providence, RI 02908-1991
**Research Topic:** The Role of base excision repair in alkylating agent response and the significance of protein-protein interactions in BER

# University of South Alabama - TRAINING/MENTORING

**Undergraduate Students research training**

**(1) Trainee**: Jonathan Edward Dismukes
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Summer 2016
**Lab supervisor:** Peter Sykora, PhD
**Research Topic:** *High throughput CometChip analysis of environmental genotoxins.*

**(2) Trainee**: Pooja Revanna
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Summer 2016
**Lab supervisor:** Peter Sykora, PhD
**Research Topic:** *High throughput CometChip analysis of environmental genotoxins.*

**(3) Trainee**: Amanda Davis
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Summer 2016
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *Analysis of a new Ab to DNA Polymerase ß*

**(4) Trainee**: Amanda Davis
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Fall 2016 / Spring 2017 / Summer 2017
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *Expansion of cancer cell lines and immunoblot analysis for DNA repair and NAD metabolism proteins*

**(5) Trainee**: Gresyn Douglas Rogers
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Summer 2018
**Lab supervisor:** Chris Koczor, PhD
**Research Topic:** *Regulation of DNA polymerase $\beta$ complex formation at sites of laser-induced DNA damage by DDR and HDAC inhibitors*

**(6) Trainee**: Bailey Manning
**Graduate Program:** USA SURF Program
**Training period:** Summer 2019 and Honor's College Fall 2019/ Spring 2020
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *APOBEC3B expression and cancer cell survival*

**(7) Trainee**: Aaron Haider
**Graduate Program:** USA/MCI Undergraduate Training Program
**Training period:** Summer 2019 and Honor's College Fall 2019 through Spring 2021
**Lab supervisor:** Chris Koczor, PhD
**Research Topic:** *Real Time analysis of PARP1 activation*

**MEDICAL STUDENT SUMMER RESEARCH PROGRAM**

**(1) Trainee**: Benjamin Bush
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2015
**Lab supervisor:** Jianfeng Li, PhD
**Research Topic:** *Cloning ALDH1A3 for expression in mammalian cells as a GFP fusion.*

**(2) Trainee**: Raaj Ghosal
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2015
**Lab supervisor:** Jianfeng Li, PhD
**Research Topic:** *Cloning ALDH1A1 for expression in mammalian cells as a GFP fusion.*

**(3) Trainee**: Robert (Will) Lightfoot
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2015
**Lab supervisor:** Anna Wilk, PhD
**Research Topic:** *Metabolic alterations following PARP1 activation in human cells.*

**(4) Trainee**: Tanner McGill
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2017
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *Loss of key enzymes involved in the DNA Damage Response (DDR) provides increased cancer cell sensitivity to chemotherapeutics & radiation*

**(5) Trainee**: Garrett (Reid) McClenny
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2017
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *Loss of key enzymes involved in the DNA Damage Response (DDR) provides increased cancer cell sensitivity to chemotherapeutics & radiation*

**(6) Trainee**: Matthew Kassels
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2017
**Lab supervisor:** Qingming Fang, MD
**Research Topic:** *Cancer mutations of the DNA repair gene DNA polymerase beta impact protein stability and the cellular response to chemotherapeutics & radiation*

**(7) Trainee**: Raymond Moosavi
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2018
**Lab supervisor:** Jennifer Clark, PhD
**Research Topic:** *Loss of key enzymes involved in DNA Repair reveals a DNA damage and DNA repair signature as measured by the CometChip Assay.*

**(8) Trainee**: Bailey Manning*
**Graduate Program:** USA Medical Student Summer Research Program
**Training period:** Summer 2021
**Lab supervisor:** Jenn Clark, PhD
**Research Topic:** *Validating a role for NAP2 in BER as a novel MPG binding protein*
**Winner of the Clyde G. Huggins Award for Best Poster, 48th Summer Medical Student Research Program*

## GRADUATE PROGRAM

**PhD Thesis Committee Member**

**Cinta Maria Papke** (PI; Dr. Rich Honkanen)
University of South Alabama
College of Medicine; Biomedical Graduate Program
July 2018 – Fall 2020

**Jesse Gwinn** (PI; Dr. Alison Robertson)
University of South Alabama
School of Marine and Environmental Sciences; Marine Sciences PhD Program
Dauphin Island Sea Lab
July 2020 – Present (expected completion, Fall 2023)

**Marlo Thompson** (PI; Dr. Ash Prakash)
University of South Alabama
College of Medicine; Biomedical Graduate Program
Spring 2021 – Present (expected completion, Fall 2025)

**Graduate Students – Rotations (that did not evolve to a mentee)**

**(1) Trainee**: Chenchen Li
Ph.D. student, University of South Alabama Biomedical Graduate Program
**Training period:** 05/2018 through 08/2018, laboratory rotation.
**Research Topic:** NAD-regulation of PARP1 interactions with modified histones.

**Graduate Students**

**(1) Trainee**: Grace Willoughby
**Graduate Program:** USA Environmental Toxicology Master's degree program
**Training period:** 09/16 to 05/18
**Lab supervisor:** Peter Sykora, PhD
**Current Position:** N/A
**Research Topic:** *High throughput CometChip analysis of environmental toxins: DNA damage and repair variation depending on DNA repair gene status*.

**Trainee**: Kate McConnell (Seville)
Ph.D. student, University of South Alabama Biomedical Graduate Program
**Training period:** 05/2017 through September 2022, graduated Dec 2022
**Current Position:** Fellow, Mobile Infirmary
**Research Topic:** NAD regulation of DNA repair capacity in cancer and disease
**Prior Academic Degree Institution(s):** The University of Alabama
**Prior Academic Degree(s):** Bachelor of Science
**Prior Academic Degree Year(s):** 2014
**Prior Academic Degree Institution(s):** Virginia Western Community College
**Prior Academic Degree(s):** Associate of Science
**Prior Academic Degree Year(s):** 2008

**Trainee**: Md Ibrahim
Ph.D. student, University of South Alabama Biomedical Graduate Program
**Training period:** 09/2019 through September 2022, graduated Dec 2022
**Current Position:** Assistant Professor (Research), Brown University

**Research Topic:** Defining a role for BER/SSBR protein complexes in replication fork stability and dynamics
**Prior Academic Degree Institution(s): Master of Pharmacy (M.Pharm),** Primeasia University, Dhaka, Bangladesh & **Bachelor of Pharmacy (B.Pharm),** Atish Dipankar University of Science and Technology (ADUST), Dhaka, Bangladesh
**Prior Academic Degree(s):** M.Pharm, B.Pharm
**Prior Academic Degree Year(s):** M.Pharm (2012-2013), B.Pharm (2007-2011)

**Trainee**: Natalye Megan Bordelon
Master of Science, University of South Alabama Environmental Toxicology Graduate Program
**Training period:** 08/2019 through August 2021
**Research Topic:** Investigating the coordinated role of OGG1 and MTH1 in the cellular response to environmentally induced oxidative DNA damage
**Prior Academic Degree Institution(s):** B.S., The University of South Alabama
**Prior Academic Degree(s):** B.S., Chemistry
**Prior Academic Degree Year(s):** B.S. (2018)

**Trainee**: Rasha Al-Rahahleh
Ph.D. student, University of South Alabama Biomedical Graduate Program
**Training period:** 11/2020 through August 2022 (then moved to Brown University)
**Current Position:** n/a
**Research Topic:** Development of genetically encoded base excision repair inhibitors targeted to BRCA1/2 mutant cancers
**Prior Academic Degree Institution(s):** B.S., University of Jordan, M.S., Jordan University of Science and Technology.
**Prior Academic Degree(s):** B.S., Dentistry, M.S., Oral surgery
**Prior Academic Degree Year(s):** B.S. (2006), M.S. (2010)

**Trainee:** Tabassum Islam Tamanna
Ph.D. student, University of South Alabama Basic Medical Sciences Graduate Program
**Training period:** 11/2020 through August 2022 (then moved to Brown University)
Current Position: Graduate Student
**Research Topic:** The role of glycosylases in ATR response
**Prior Academic Degree Institution(s):** Bachelor of Medicine & Surgery (M.B.B.S), University of Rajshahi, Bangladesh
**Year of Graduation:** 2018

**Postdoctoral Fellows**
**Trainee**: Anusha Angajala
**Training period:** 09/2019 through 02/2022
**Current Position:** Post-doctoral fellow
**Research Topic:** DNA repair defects in head & Neck cancer related to health disparities
**Prior Academic Degree Institution(s):** Tuskegee University
**Prior Academic Degree(s):** PhD in Integrative Biosciences
**Prior Academic Degree Institution(s):** University of Houston Clearlake, Houston, TX, USA.
**Prior Academic Degree(s):** Master's in science (M.S) Molecular Biology
**Prior Academic Degree Year(s):** 2009-2010
**Prior Academic Degree Institution(s**): Gandhi Institute of Engineering and technology, G.I.E.T, Gunupur, Odisha, India.
**Prior Academic Degree(s):** Bachelor's in technology (B. Tech) Biotechnology.
**Prior Academic Degree Year(s):** 2004-2008

**Trainee**: Md Maruf Khan
**Training period:** 05/01/2022-05/31/2022 (North Carolina A&T State University), 06/01/2022-09/2022 (University of South Alabama) (According to DS2019) – then moved to Brown University

**Current Position:** Post-doctoral fellow
**Research Topic:** DNA repair defects in head & Neck cancer related to health disparities
**Prior Academic Degree Institution(s):** Chosun University, Gwangju, South Korea
**Prior Academic Degree(s):** Ph.D. in Bio-pharmacy
**Prior Academic Degree Year(s):** 2016-2021
**Prior Academic Degree Institution(s):** State University of Bangladesh (SUB), Dhaka, Bangladesh
**Prior Academic Degree(s):** Master of Pharmacy
**Prior Academic Degree Year(s):** 2012-2013
**Prior Academic Degree Institution(s**): Atish Dipankar University of Science & Technology (ADUST), Dhaka, Bangladesh
**Prior Academic Degree(s):** Bachelor of Pharmacy
**Prior Academic Degree Year(s):** 2006-2010

**Junior Faculty**

**Trainee**: Qingming Fang, M.D.
Tongji Medical College of Huazhong University of Science and Technology, China, 1993.
**Training period:** Research Assistant Professor, Department of Oncologic Sciences, MCI, USA: Nov 1, 2014 – April 30, 2019.
**Training period:** Instructor, Department of Pharmacology, USA COM & MCI: May 1, 2019 – Sept 2022
**Current Position:** Fellow, UTHSCSA
**Research Topic:** Mechanisms of POLB ubiquitylation
**Awards/Support:** State funds.

**Trainee**: Jianfeng Li, PhD.
05/2008, Ph.D., Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma
**Training period:** Instructor, Department of Oncologic Sciences, MCI, USA: Nov 1, 2014 – April 30, 2019.
**Training period:** Research Assistant Professor, Department of Pharmacology, USA COM & MCI: May 1, 2019 – August 2022
**Current Position:** Fellow, Emory University
**Research Topic:** Optimization of the molecular beacon assay for measuring the activities of DNA repair enzyme.

**Trainee**: Anna Wilk, PhD
**Training period:** Instructor, Department of Oncologic Sciences, MCI, USA: March 1, 2015 – April 30, 2019.
**Training period:** Instructor, Department of Pharmacology, USA COM & MCI: May 1, 2019 – August 31, 2019.
**Current Position:** n/a
**Research Topic:** DNA repair and cellular metabolism crosstalk.

**Trainee**: Peter Sykora, PhD; (Deakin University, 2008)
**Training period:** Instructor, Department of Oncologic Sciences, MCI, USA: August 1, 2015 – April 26, 2018.
**Current Position:** Director of Research and Technology, Amelia Technologies (Rockville, Maryland)
**Research Topic:** The development of new and emerging technology to facilitate and accelerate carcinogenic research.

**Trainee**: Chris Koczor, PhD
**Training period:** Instructor, Department of Oncologic Sciences, MCI, USA: July 1, 2017 – April 30, 2019.
**Training period:** Instructor, Department of Pharmacology, USA COM & MCI: May 1, 2019 – Sept 2022
**Current Position:** Tech Department coordinator, USA
**Research Topic:** Studies on DNA polymerase over expression in cancer.

**Trainee**: Jennifer Clark, PhD
**Training period:** Instructor, Department of Pharmacology, USA COM & MCI: Sept 1, 2019 – Sept 2022
**Current Position:** Mass Spec Core manager, ISA
**Research Topic:** DNA repair and cellular metabolism crosstalk.

# Brown University - TRAINING/MENTORING

## Graduate Students

**Trainee**: Rasha Al-Rahahleh
Ph.D. student, Pathobiology Program, Brown University
**Training period:** 08/20222 through Present
**Current Position:** n/a
**Research Topic:** Development of genetically encoded base excision repair inhibitors targeted to BRCA1/2 mutant cancers
**Prior Academic Degree Institution(s):** B.S., University of Jordan, M.S., Jordan University of Science and Technology.
**Prior Academic Degree(s):** B.S., Dentistry, M.S., Oral surgery
**Prior Academic Degree Year(s):** B.S. (2006), M.S. (2010)

**Trainee:** Tabassum Islam Tamanna
Ph.D. student, Pathobiology Program, Brown University
**Training period:** 08/20222 through Present
Current Position: Graduate Student
**Research Topic:** The role of glycosylases in ATR response
**Prior Academic Degree Institution(s):** Bachelor of Medicine & Surgery (M.B.B.S), University of Rajshahi, Bangladesh
**Year of Graduation:** 2018

## Postdoctoral Fellows

**Trainee**: Md Maruf Khan, PhD
**Training period:** 05/01/2022-05/31/2022 (North Carolina A&T State University), 06/01/2022-09/2022 (University of South Alabama) (According to DS2019) – then moved to Brown University
**Current Position:** Post-doctoral fellow
**Research Topic:** DNA repair defects in head & Neck cancer related to health disparities
**Prior Academic Degree Institution(s):** Chosun University, Gwangju, South Korea
**Prior Academic Degree(s):** Ph.D. in Bio-pharmacy
**Prior Academic Degree Year(s):** 2016-2021
**Prior Academic Degree Institution(s):** State University of Bangladesh (SUB), Dhaka, Bangladesh
**Prior Academic Degree(s):** Master of Pharmacy
**Prior Academic Degree Year(s):** 2012-2013
**Prior Academic Degree Institution(s**): Atish Dipankar University of Science & Technology (ADUST), Dhaka, Bangladesh
**Prior Academic Degree(s):** Bachelor of Pharmacy
**Prior Academic Degree Year(s):** 2006-2010

**Trainee**: Talha Bin Emran, PhD
**Training period:** Year: 2015-2018; Kanazawa University, Japan
**Current Position:** Post-doctoral fellow
**Research Topic:** Development of barcoded human cells engineered with heterozygous genetic diversity to uncover toxicodynamic variability.
**Prior Academic Degree Institution(s):** Kanazawa University, Japan
**Prior Academic Degree(s):** Doctor of Philosophy (PhD); 2018
**Prior Academic Degree Institution(s):** University of Chittagong, Bangladesh
**Prior Academic Degree(s):** Master's in science (MS); 2011
**Prior Academic Degree Institution(s**): University of Chittagong, Bangladesh
**Prior Academic Degree(s):** Bachelor of Honors (B.Sc.)
**Prior Academic Degree Year(s):** 2010

# FUNDING - Current Support

**Source/Grant Number**
NIH / R01ES014811

**Grant Title**
A Systems Approach to Mapping the DNA Damage Response

**Role in Project & Percentage of Effort**
Co-I, 10% (1.2 Calendar)

**Years Inclusive**
7/1/17-6/30/22 (now on NCE)

**Funding level (Direct/total)**
$80,000 ($121,500)

**Description**
Herein, we propose to develop comprehensive maps and models of signal transduction networks in response to DNA damage. These maps will be a major biomedical resource which will be used to identify and target chemotherapeutic agents and their modulators.

---

**Source/Grant Number**
NIH / 1 U01 ES029518-01

**Grant Title**
Measuring genomic DNA damage and DNA repair capacity in longitudinal population samples - a step towards precision prevention (response to RFA-ES-17-006: Expanding Genome Integrity Assays to Population Studies)

**Role in Project & Percentage of Effort**
Principal Investigator; 10% (1.2 Calendar)

**Years Inclusive**
7/01/18 – 06/30/23

**Funding level (Direct/total)**
$1,800,000 ($2,861,760)

**Description**
These studies will provide the first look at a longitudinal measure of genome integrity in a community-based cohort of mostly African American descent and will optimize procedures needed for large scale multi-site studies in future population analyses of genome integrity.

---

**Source/Grant Number**
NIH/NIEHS / 1P01ES028949-01
*NSF /* Award# 1841811

**Grant Title**
*Greater Caribbean Center for Ciguatera Research; Co-Director and member, Administrative Core*
*Project 3 Leader: Translation: Human mechanisms of genotoxicity and cellular metabolism*

**Role in Project & Percentage of Effort**
Principal Investigator (Dual PI with M. Parsons); 28% (3.36 Calendar)

**Years Inclusive**
05/1/18 – 04/30/23

**Funding level (Direct/total)**
$477,561 ($723,505)

**Description**
This grant will help establish the Greater Caribbean Center for Ciguatera Research (GCCCR) (jointly funded by NIH and NSF). Dr. Sobol is the co-Director of the Center and the lead for Project 3 that uses primary and immortalized human cell and stem cell systems, novel DNA damage and cell death analysis tools, high resolution cellular imaging and gene editing approaches to uncover how ciguatoxins (CTX) and CTX metabolites impact cellular genomes, cellular metabolism and cell survival.

---

**Source/Grant Number**
NIH/ 1R01CA238061

**Grant Title**
*Investigating genetic ancestry influences on oral cavity and laryngeal cancer survival disparities*

**Role in Project & Percentage of Effort**
Principal Investigator (Dual PI with C. Ragin; 15% (1.8 Calendar)

**Years Inclusive**
03/01/19-02/29/24

**Funding level (Direct/total)**
$1,112,000 ($1,712,400)

**Description**
These studies will use novel expression systems and CRISPR/cas9-mediated gene editing to mimic genetic ancestry AIMs that will modulate POLB expression to understand the functional mechanisms related to POLB expression and radiation/cisplatin resistance.

---

**Source/Grant Number**
1R01CA236911

**Grant Title**
*SON-mediated RNA splicing in glioblastoma*

**Role in Project & Percentage of Effort**
Co-Investigator; 2% (0.24 Calendar)

**Years Inclusive**
7/01/20-6/30/25

**Funding level (Direct/total)**
$50,000 ($75,000)

**Description**
We hypothesize that SON is a master RNA splicing regulator positioning at the apex of the splicing factor hierarchy that affect both constitutive and alternative RNA splicing, turning on the oncogenic splicing program and blocking neuronal splicing. Thus, SON could represent a promising novel therapeutic target for GBM.

---

**Source/Grant Number**
1R01AG069740 NIH / NIA (Walter)

**Grant Title**
*The Paternal Age Effect - Enhanced Germ Cell Mutagenesis modulated by the TRP53/APE1/MDM2 Tumor Suppressor Axis*

**Role in Project & Percentage of Effort**
Co-Investigator (Walter); 5% (0.6 Calendar)

**Years Inclusive**
09/01/20-08/31/25

**Funding level (Direct/total)**
$32,000 ($50,000)

**Description**
Mutations increase in male gametes as men get older, leading to older fathers being more likely to have children with a genetic disease and creating a reproductive concern for older men. Our studies elucidate involved mechanisms with a long-term goal of reducing risk of genetic disease in children born to older fathers through intervention.
---

**Source/Grant Number**
Breast Cancer Research Foundation of Alabama (BCRFA)

**Grant Title**
*Exploiting a novel, live-cell, real-time poly-ADP-ribose probe for discovery of PARG inhibitors*

**Role in Project & Percentage of Effort**
Principal Investigator, 1% (0.18 Calendar)

**Years Inclusive**
12/01/20-11/30/21

**Funding level (Direct/total)**
$25,000 ($25,000)

**Description**
Our goal in this project is to use our RealPAR expressing cells to screen a small molecule diversity library to identify compounds that inhibit the PAR degrading enzyme PARG.

---

**Source/Grant Number**
1R44ES032522-01

**Grant Title**
*Barcoded human cells engineered with heterozygous genetic diversity to uncover toxicodynamic variability*

**Role in Project & Percentage of Effort**
Dual Principal Investigators (Sobol and George); 10% (1.2 Calendar)

**Years Inclusive**
09/01/20-08/31/22

**Funding level (total)**
$1,680,000

**Description**
This Phase I/II fast track proposal will yield the development of a defined panel of barcoded, human cells with genetic diversity in genotoxin-response gene families: DNA damage response/repair, cell death and stress response. This system will provide a rapid and high-throughput, barcode-based analysis of toxicodynamic variability coupled with mechanistic insight that contributes to the variability in genotoxin response.

---

**Source/Grant Number**
Breast Cancer Research Foundation of Alabama (BCRFA)

**Grant Title**
*Overcoming breast cancer resistance to PARG inhibitor-induced cell death by NAD-modulation*

**Role in Project & Percentage of Effort**
Principal Investigator, 1% (0.18 Calendar)

**Years Inclusive**
01/01/22-12/31/22

**Funding level (Direct/total)**
$50,000 ($50,000)

**Description**
Our goal in this proposal will be to expand our analysis of the NRH/PARGi treatment paradigm to a large panel of breast cancer and breast normal cells so to strategically target therapy-resistant breast cancers with this combination treatment.

## FUNDING - Pending Support (To be funded)

n/a

## FUNDING - Pending Support (under review)

**Source/Grant Number**
R21CA280384 – Pending consideration

**Grant Title**
*Bacterial type-III secretion: A novel therapeutic protein delivery system for the treatment of lung cancer*

**Role in Project & Percentage of Effort**
Dual Principal Investigators (Audia/Sobol); 5% (0.6 Calendar)

**Years Inclusive**
04/01/23-03/31/25

**Funding level (Direct/total)**
$250,000 ($377,500)

**Description**
Retooling the Bacterial type-III secretion system to target lung cancer.

---

**Source/Grant Number**
R35ES035014 – Pending consideration

**Grant Title**
*Base excision repair response to genotoxin-induced replication stress*

**Role in Project & Percentage of Effort**
Principal Investigator; 50% (6.0 Calendar)

**Years Inclusive**
04/01/23-03/31/31

**Funding level (Direct/total)**
$4,800,000 ($7,248,000)

**Description**
Investigations of replication associated BER, genotoxic stress and response to genotoxins

**Source/Grant Number**
DBG-23-1155482-01-
American Cancer Society (ACS) Discovery Boost grant – Pending consideration

**Grant Title**
*Discovery of replication-stress response factors*

**Role in Project & Percentage of Effort**
Principal Investigator (Sobol); 10% (1.2 Calendar)

**Years Inclusive**
12/01/23-11/30/25

**Funding level (Direct/total)**
$275,000 ($300,000)

**Description**
Proteomics screen for factors associated with PARP1 in response to replication stress.

---

**Source/Grant Number**
1 R01 NS126680-01A1 – Pending NOA

**Grant Title**
*Investigating Mechanisms of Viral Impairment of Neurogenesis Using Recombinant AAV*

**Role in Project & Percentage of Effort**
Co-Investigator; 5% (0.6 Calendar) (PI; Matt Shtrahman)

**Years Inclusive**
04/01/23-03/31/28

**Funding level (Direct/total)**
$40,638 ($62,583)

**Description**
These experiments will establish a new framework for understanding how viruses cause microcephaly and other neurodevelopmental disorders, leading to novel therapies for these devastating diseases.

---

## FUNDING - Pending Support (not funded – re-submission to be considered)

**Source/Grant Number**
1 R01CA275837-01 To be re-submitted

**Grant Title**
*Replication associated base excision in cancer*

**Role in Project & Percentage of Effort**
Principal Investigator; 20% (2.4 Calendar)

**Years Inclusive**
09/01/22-08/31/27

**Funding level (Direct/total)**
$2,4283,045 ($3,491,700)

**Description**
This project is designed to discover, validate, and probe the unique mechanisms that regulate PARP1/PARP2 activation at the replication fork and the mechanisms that govern the ensuing BER/SSBR complex assembly/disassembly dynamics. This project will provide a deeper understanding of the proteins that modulate these pathways and will identify novel targets hypothesized to enhance response to PARP, PARG and ARH3 inhibitors.

---

**Source/Grant Number**
NIH / R01ES014811 To be re-submitted

**Grant Title**
*A Systems Approach to Mapping the DNA Damage Response*

**Role in Project & Percentage of Effort**
Co-I, 10% (1.2 Calendar)

**Years Inclusive**
9/1/22-8/31/27

**Funding level (Direct/total)**
$150,000 ($221,500)

**Description**
Our environment contains many chemical substances that are damaging to human DNA (genotoxins), posing a major health risk. This research program applies systematic approaches to map and model the DNA damage response pathways that maintain our genetic material during exposure to genotoxins. These models will be used in intelligent systems that automatically identify genotoxic agents and the molecular pathways that exacerbate or counteract them.

---

**Source/Grant Number**
NIH / R01ES035061 To be re-submitted
**Grant Title**
*Replication fork-associated Base Excision Repair Modulation of APOBEC3-induced Mutagenesis*

**Role in Project & Percentage of Effort**
Dual Principal Investigators (Pursell/Sobol); 15% (1.8 Calendar)

**Years Inclusive**
04/01/2023-03/31/2028

**Funding level (Direct/total)**
$1,374,404 ($2,018,922)

**Description**
These studies will use novel mouse models and human cell systems combined with structural and enzymological approaches to define the mechanism linking APOBEC3 mediated deamination at the replication fork to base excision repair to better understand the role of the human A3s and their deamination in mutagenesis and disease.

---

**Source/Grant Number**
1 R43 CA275599-01 To be re-submitted

**Grant Title**
*Optimization, characterization, and cancer selectivity profiling of lead inhibitors targeting human AP endonuclease 1 (APE1)*

**Role in Project & Percentage of Effort**
Co-Investigator (Pellicena/XPose Therapeutics); 5% (0.6 Calendar)

**Years Inclusive**
04/01/22-03/31/23

**Funding level (Direct/total)**
$84,400 ($130,000)

**Description**

Using an innovative protein crystallography-based fragment screening platform, XPose Therapeutics has identified APE1 inhibitors with greater potency and specificity than those described thus far. This Phase I SBIR proposal will build on these hits for APE1 inhibitor development. Using cancer cell models, we will evaluate our best leads and identify cancer paradigms that are most susceptible to APE1 inhibition.

---

**Source/Grant Number**
1R42ES033133-01 – To be re-submitted

**Grant Title**
*A novel platform to detect a new class of genotoxic agents*

**Role in Project & Percentage of Effort**
Dual Principal Investigators (Sobol and George); 5% (0.6 Calendar)

**Years Inclusive**
04/01/21-03/31/23

**Funding level (Direct/total)**
$840,400 ($1,720,000)

**Description**
This Phase I/II fast track STTR proposal will allow the development of a DNA Repair Molecular Beacon (DRMB) Anti-Mutator Analysis Platform and a Mutation-Aware service that will have immediate application in the identification of natural, environmental and commercial products that can induce mutations and lead to long-term human health problems.

---

**Source/Grant Number**
1R44ESxx – To be re-submitted

**Grant Title**
*Multiplex analysis and diagnostic tools for discovery and validation of base excision repair inhibitors*

**Role in Project & Percentage of Effort**
Dual Principal Investigators (Sobol and George); 10% (1.2 Calendar)

**Years Inclusive**
Pending

**Funding level (total)**
$1,680,000

**Description**
This Phase I/Phase II Fast-Track proposal will build on our recently developed and validated base excision repair (BER) activity and inhibitor screening assay, on the discovery that TDG is a target for melanoma and that TDG can be targeted by re-purposed FDA-approved compounds. We will also further develop the tools required for companion diagnostics.
---

**Source/Grant Number**
1R01CA246265-01 – To be re-Submitted

**Grant Title**
*Advanced single cell DNA damage / DNA repair kinetic analysis and transcriptomic toxicology to uncover genotoxic potential and DNA repair pathway specificity of traditional herbal compounds*

**Role in Project & Percentage of Effort**
Principal Investigator; 10% (1.2 Calendar)

**Years Inclusive**
n/a

**Funding level (Direct/total)**
$150,000 ($225,000)

**Description**
These studies will characterize traditional herbs and herbal compounds to determine if and to what extent they induce DNA damage, alter DNA damage and DNA repair profiles by modulating repair or DNA damage response pathways and via what mechanism(s) do these compounds selectively act.

---

**Source/Grant Number**
R21ES030288-01 – To be re-Submitted

**Grant Title**
*Spatiotemporal Regulation of DNA Repair Complex Dynamics Through Optobiological Control*

**Role in Project & Percentage of Effort**
PI (10%)

**Years Inclusive**
n/a

**Funding level (Direct/total)**
$200,000 ($302,000)

**Description**
Our overall goal in this proposal is to develop a human cell system that will support optical control over the base excision repair pathway (BER) to obtain precise spatiotemporal regulation of DNA repair complex dynamics that will aid in the complete characterization of the mechanism of BER in human cells and their response to genotoxins.

---

**Source/Grant Number**
1R21ES027950-01 – To be re-Submitted

**Grant Title**
Differentiating metabolic impact of NAD loss and PARP1 signaling

**Role in Project & Percentage of Effort**
Principal Investigator; 10.0% (1.2 Calendar)

**Years Inclusive**
n/a

**Funding level (Direct/total)**
$250,000 ($375,000)

**Description**
In this project, we will evaluate changes to the cellular metabolome induced by PARP1 activation or NAD depletion in iPS and ES cells as well as isogenic cardiomyocytes developed from iPS and ES cells.
---

# FUNDING - Past Support

**Source/Grant Number**
UPCI Cancer and Aging Pilot Program

**Grant Title**
Modulation of BER and β-pol: Differential effects on genomic stability and health span relative to age

**Role in Project & Percentage of Effort**
Principal Investigator; 5%

**Years Inclusive**
09/04 - 08/06

**Direct Dollars (total/annual)**
$50,000/$25,000

**Indirect Dollars (total/annual)**
n/a

**Description**
To develop and characterize a mouse model of elevated pol ß

---

**Source/Grant Number**
#70-3132
The Susan G. Komen Breast Cancer Foundation

**Grant Title**
Targeting DNA polymerase β and base excision repair in breast cancer: Characterization of a novel p53-independent anti-tumor Response

**Role in Project & Percentage of Effort**
Principal Investigator; 20%

**Years Inclusive**
05/04 - 04/06

**Direct Dollars (total/annual)**
$200,000/$100,000

**Indirect Dollars (total/annual)**
$50,000/$25,000

**Description**
The goal of this study is to determine if deregulating DNA polymerase ß protein expression in breast cancer cells may alter temozolomide efficacy in cells in culture and in xenografts grown in the mouse

---

**Source/Grant Number**
#PUH001-10313
UPMC Health System Competitive Medical Research Fund Award

**Grant Title**
Characterization of the cellular response to DNA repair intermediates: potential mediators of fragile site instability

**Role in Project & Percentage of Effort**
Principal Investigator; 10%

**Years Inclusive**
2003-2004

**Direct Dollars (total/annual)**
$25,000/$25,000

**Indirect Dollars (total/annual)**
n/a

**Description**
The goal of this study is to determine if deregulating BER in human tumor cells may increase the accumulation of fragile site expression

---

**Source/Grant Number**
#02-93801
UPCI Pilot Project Award grant

**Grant Title**
Antitumor activity of DNA repair intermediates in human breast cancer xenografts

**Role in Project & Percentage of Effort**
Principal Investigator; 10%

**Years Inclusive**
2003-2004

**Direct Dollars (total/annual)**
$25,000/$25,000

**Indirect Dollars (total/annual)**
n/a

**Description**
The goal of this study is to determine if deregulating DNA polymerase ß protein expression in breast cancer cells may alter temozolomide efficacy in cells in culture and in xenografts grown in the mouse

---

**Source/Grant Number**
NIH 1P50CA097190
Head and Neck Cancer SPORE Development Grant

**Grant Title**
XRCC1 mutations and BER capacity: relationship to genome stability and chemotherapeutic response

**Role in Project & Percentage of Effort**
Principal Investigator; 5%

**Years Inclusive**
9/04 - 08/05

**Direct Dollars (total/annual)**
$60,000/$60,000

**Indirect Dollars (total/annual)**
n/a

**Description**
The goal of this study is to determine if polymorphisms in XRCC1 causes an overall defect in the base excision repair pathway and leads to genome instability in Head & Neck Cancer cells.

---

**Source/Grant Number**
70-2987 The Elsa U. Pardee Foundation for Cancer Research

**Grant Title**
Base excision repair – A global tumor suppressor mechanism?

**Role in Project & Percentage of Effort**
Principal Investigator; 20%

**Years Inclusive**
1/01/04 – 12/31/05

**Direct Dollars (total/annual)**
$186,544/$99,803

**Indirect Dollars (total/annual)**
$62,181/$24,950

**Description**
The goal of this study is to develop experimental mouse models (transgenic and gene knockouts) with alterations in BER gene expression

---

**Source/Grant Number**
# FY05-01000 CEBHD
University of Pittsburgh Center for the Environmental Basis of Human Disease

**Grant Title**
The role of base excision repair in vinyl chloride mediated liver dysfunction and genome instability

**Role in Project & Percentage of Effort**
Principal Investigator; 10%

**Years Inclusive**
02/05 - 01/06

**Direct Dollars (total/annual)**
$25,000/$25,000

**Indirect Dollars (total/annual)**
n/a

**Description**
The goal of this study is to determine if base excision repair deficiency in hepatocytes influences Vinyl Chloride mediated liver hyperplasia in mouse models

---

**Source/Grant Number**
NIH/NIEHS 1R13ES016721

**Grant Title**
10th Annual Midwest DNA Repair Symposium

**Role in Project & Percentage of Effort**
Principal Investigator

**Years Inclusive**
04/08-03/09

**Direct Dollars (total/annual)**
$8,000/$8,000

**Indirect Dollars (total/annual)**
n/a

**Description**
Supplemental funding for the 10th Annual Midwest DNA Repair Symposium scheduled to be held May 10-11, 2008 at the University of Pittsburgh, Alumni Hall.

---

**Source/Grant Number**
UPCI/UPIA Cancer and Aging Pilot Program

**Grant Title**
Delineating the DNA repair pathways impacting alkylating agent efficacy in the treatment of melanoma

**Role in Project & Percentage of Effort**
Principal Investigator; 1%

**Years Inclusive**
10/06-09/07

**Direct Dollars (total/annual)**
$19,400/$19,400

**Indirect Dollars (total/annual)**
$9,409/$9,409

**Description**
It is our goal to measure MGMT expression, MGMT promoter silencing, analysis of MLH1 and MSH2 protein expression, Mlh1 promoter epigenetic silencing and micro-satellite instability as well as expression of BER proteins in melanoma tumors and evaluate clinical response to TMZ/DTIC.

---

**Source/Grant Number**
ACS / RSG 05-246-01-GMC

**Grant Title**
The role of base excision repair in the anti-tumor action of Temozolomide

**Role in Project & Percentage of Effort**
Principal Investigator; 20%

**Years Inclusive**
07/05-06/09

**Direct Dollars (total/annual)**
$600,000 /$150,000

**Indirect Dollars (total/annual)**
$120,000 /$30,000

**Description**
The goal of this project is to investigate the role of the DNA polymerase beta and the BER pathway in the synergistic anti-cellular and anti-tumor effect of combined temozolomide and camptothecin (CPT-11) treatment of glioblastoma cells and xenografts.

---

**Source/Grant Number**
NIH / 1R01AG024364

**Grant Title**
Genetic and molecular basis of longevity base excision Repair, genetic integrity & health span

**Role in Project & Percentage of Effort**
Co-Investigator; 10%

**Years Inclusive**
08/04-07/09

**Direct Dollars (total/annual)**
$421,050/$84,210

**Indirect Dollars (total/annual)**
$146,815/$27,676

**Description**
The goal of this study is to determine if modulation of DNA polymerase ß abundance and activity in transgenic mouse models will have differential effects among tissues relative to age.

---

**Source/Grant Number**
UPCI

**Grant Title**
Epigenetic regulation of DNA repair: Translational corollary of UPCI 07-008 Phase I/II Trial

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 1%

**Years Inclusive**
11/07-10/09

**Direct Dollars (total/annual)**
$75,000/$37,500

**Indirect Dollars (total/annual)**
n/a

**Description**
We propose to study the pharmacodynamic effects of the combination of TMZ and DAC in PBMC as well as metastatic melanoma tumor tissue from an ongoing Phase I/II clinical trial. Our overall hypothesis is that DAC will lead to DNA hypomethylation and modulation of DNA repair gene expression resulting in improved efficacy of TMZ in the treatment of metastatic melanoma.

---

**Source/Grant Number**
Brain Tumor Society

**Grant Title**
PARG regulation of Temozolomide-induced mitotic checkpoint activation

**Role in Project & Percentage of Effort**
Principal Investigator; 15%

**Years Inclusive**
09/07-08/09

**Direct Dollars (total/annual)**
$200,000/$100,000

**Indirect Dollars (total/annual)**
n/a

**Description**
This proposal is designed to uncover the role of PARG in TMZ efficacy and to identify PARP-modified proteins that mediate TMZ-induced tumor cell death.

---

**Source/Grant Number**
NIH (SBIR/Phase 1) / 1R43GM087798

**Grant Title**
DNA repair deficient human cells for genetic variation analysis

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 5%

**Years Inclusive**
05/09-4/10

**Direct Dollars (total/annual)**
$74,922/$74,922

**Indirect Dollars (total/annual)**
$38,585/$38,585

**Description**
The overall goal of the phase I project is to develop cell lines each depleted of the known DNA repair associated glycosylases. In the proposal we plan to develop real time in vivo assays to monitor glycosylase activity. Additionally, we intend to determine the effect of depletion of a single glycosylases on the global transcriptome.

---

**Source/Grant Number**
Hillman Foundation

**Grant Title**
Tumor selective chemotherapy for glioblastoma: exploiting tumor-specific defects in NAD+ biosynthesis

**Role in Project & Percentage of Effort**
Principal Investigator

**Years Inclusive**
7/1/09-6/30/10

**Direct Dollars (total/annual)**
To cover FY10 hard funds expenses

**Indirect Dollars (total/annual)**
n/a

**Description**
This project will allow us to determine the fraction of adult glioblastoma patients that would benefit from combined repair and NAD biosynthesis inhibition, to define genetic biomarkers of this select population and to conduct essential preclinical laboratory studies.

---

**Source/Grant Number**
NIH / P20-CA132385

**Grant Title**
Environmental Oncology Partnership between Hampton University and UPCI

**Role in Project & Percentage of Effort**
Principal Investigator; 10% (1.2 Calendar)

**Years Inclusive**
9/01/07 - 8/31/10

**Direct Dollars (total/annual)**
Total: $263,387; Annual: $67,155 (year 1) $56,300 (year 2) $57,989 (year 3)

**Indirect Dollars (total/annual)**
Total: $81,942; Annual: $26,511 (year 1) $27,306 (year 2) $28,125 (year 3)

**Description**
This proposal is designed to determine putative mechanism(s) utilized by isofenphos (IFP) to induce chromosomal damage and create genomic instability in lymphocytes. In addition, we will identify DNA repair pathways that mediate the cellular reaction to pesticide exposure.

---

**Source/Grant Number**
Pittsburgh Foundation / M2010-0028

**Grant Title**
Tumor selective chemotherapy for glioblastoma: exploiting tumor-specific defects in $NAD^+$ biosynthesis

**Role in Project & Percentage of Effort**
Principal Investigator; 5% (0.6 Calendar)

**Years Inclusive**
12/01/10 – 11/30/11

**Direct Dollars (total/annual)**
Total: $100,000; Annual: $100,000

**Indirect Dollars (total/annual)**
n/a

**Description**
This project will allow us to determine the fraction of adult glioblastoma patients that would benefit from combined repair and $NAD^+$ biosynthesis inhibition, to define genetic biomarkers of this select population and to conduct essential preclinical laboratory studies.

---

**Source/Grant Number**
NIH / R01-GM088249

**Grant Title**
Novel Role of Base Excision Repair and Mismatch Repair in Cisplatin Sensitivity

**Role in Project & Percentage of Effort**
Co-Investigator; 1% (0.12 Calendar) (PI; Patrick)

**Years Inclusive**
4/1/10 - 3/30/12

**Direct Dollars (total/annual)**
Total: $10,000; Annual: $5,000

**Indirect Dollars (total/annual)**
Total: $5,150; Annual: $2,575

**Description**
We will use genetic tools to test a model that involves a role for base excision repair in cisplatin sensitivity and links mismatch repair to the same pathway.

---

**Source/Grant Number**
NIH / U01-DK089538

**Grant Title**
Multi-Disciplinary Approaches to Driving Therapeutic Human Beta Cell Replication

**Role in Project & Percentage of Effort**
Co-Investigator; 10% (1.2 Calendar) (PI; Stewart)

**Years Inclusive**
7/1/10 - 6/30/15

**Direct Dollars (total/annual)**
Total: $125,000; Annual: $24,567

**Indirect Dollars (total/annual)**
Total: $64,000; Annual: $12,652

**Description**
To use multiple genetic approaches to develop replicating and stable sources of human pancreatic islet cells; This is a Beta Cell Biology Consortium multicenter grant focusing on the biology and therapeutic opportunities for expanding human beta cell mass for diabetes.

---

**Source/Grant Number**
NIH / 1R43ES021116-01

**Grant Title**
DNA Repair-on-a-Chip: Spatially Encoded Microwell Arrays

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 10% (1.2 Calendar)

**Years Inclusive**
09/20/11 – 08/31/12

**Direct Dollars (total/annual)**
Total: $75,195; Annual: $75,195

**Indirect Dollars (total/annual)**
Total: $38,725; Annual: $38,725

**Description**
This proposal combines the use of agarose-based Microwell arrays, spatially encoded cellular recognition, human tumor cell lines with genetically-defined DNA repair status and extra-cellular matrix proteins to optimize, validate and commercialize a series of Spatially Encoded Microwell Arrays that will function as a tool to quantify DNA damage and measure cellular DNA Repair capacity.

---

**Source/Grant Number**
NIH / 1R21ES019498-02

**Grant Title**
CometChip: Enabling Translation of DNA Damage and Repair Assays

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 5% (0.6 Calendar)

**Years Inclusive**
4/01/11 – 3/31/13

**Direct Dollars (total/annual)**
Total: $135,575; Annual: $68,000

**Indirect Dollars (total/annual)**
Total: $69,822; Annual: $35,000

**Description**
We propose to develop a high throughput DNA damage analysis platform for studies of DNA damage in human cells. The proposed studies will greatly accelerate translation of a highly valuable technology.

---

**Source/Grant Number**
NIH / 1R43GM099213-01A1

**Grant Title**
Discovery Tools for Chemotherapy Resistance to Cell Death

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 5% (0.6 Calendar)

**Years Inclusive**
4/01/12 – 3/31/13

**Direct Dollars (total/annual)**
Total: $109,482; Annual: $109,482

**Indirect Dollars (total/annual)**
Total: $56,383; Annual: $56,383

**Description**
This proposal is to develop isogenic human cell lines as discovery tools for the identification of key apoptotic targets in chemoresistance and the discovery of agents designed to overcome gene-specific defects in apoptosis.

---

**Source/Grant Number**
CTSI Spirit Funding

**Grant Title**
Uncovering the DNA Repair Landscape in Colon Cancer

**Role in Project & Percentage of Effort**
Principal Investigator; 2.5% (0.3 Calendar)

**Years Inclusive**
6/1/12-5/31/13

**Direct Dollars (total/annual)**
Total: $25,000; Annual: $25,000

**Indirect Dollars (total/annual)**
Total: $0; Annual: $0

**Description**
Our goal in this pilot study is to clone Polß mutant proteins in a normal colonic epithelial cell line, using a novel knockdown/knockin (KD/KI) expression system and characterize the impact of the expression of these mutant proteins for response to chemotherapy and transformation potential. Finally, as a prelude to a larger effort, we propose to identify the mutations of all DNA Repair genes in cohorts of colon tumors from both Yale and Pittsburgh.

---

**Source/Grant Number**
NIH / 2 R44 GM087798-02

**Grant Title**
DNA repair deficient cells for analysis

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 10% (1.2 Calendar)

**Years Inclusive**
9/01/10 - 8/31/13

**Direct Dollars (total/annual)**
Total: $1,043,646; Annual: $325,000

**Indirect Dollars (total/annual)**
Total: $485,978; Annual: $162,000

**Description**
This project will utilize the successful work-flow paradigm optimized in Phase I for the development, characterization and transcriptome analysis of isogenic human cells lines deficient in all known DNA repair genes.

---

**Source/Grant Number**
NIH / 2 P30 CA047904-24

**Grant Title**
Cancer Center Support Grant

**Role in Project & Percentage of Effort**
Co-Investigator; 5% (0.6 Calendar) (PI; Davidson)

**Years Inclusive**
9/01/10 - 8/31/14

**Direct Dollars (total/annual)**
Total: $133,794; Annual: $33,449

**Indirect Dollars (total/annual)**
Total: $68,904; Annual: $17,226

**Description**
The grant provides my lab with infrastructure, materials and staffing support for the UPCI Viral Core Facility.

---

**Source/Grant Number**
NIH / 3R01CA148629-04S1 (Administrative Supplement)

**Grant Title**
Novel approaches to enhance tumor cell cytotoxicity of alkylating agents

**Role in Project & Percentage of Effort**
Principal Investigator; Concurrent with effort on parent R01

**Years Inclusive**
09/01/13 – 08/31/14

**Direct Dollars (total/annual)**
Total: $115,900; Annual: $115,900

**Indirect Dollars (total/annual)**
Total: $47,999; Annual: $47,999

**Description**
Key to this administrative supplement proposal is the collaboration with Dr. Charlie Brenner at the University of Iowa. Dr. Brenner has developed a Quantitative NAD+ Metabolomics platform. We propose to utilize this approach, together with Dr. Brenner at the University of Iowa, thus allowing us to expand our analytical capacity for NAD+ metabolite measurements at the University of Pittsburgh.

---

**Source/Grant Number**
NIH / 1R21ES022291-01

**Grant Title**
Transcriptional Signatures of Homologous Recombination Deficiency for Targeted Chemotherapy

**Role in Project & Percentage of Effort**
Principal Investigator; 5% (0.6 Calendar)

**Years Inclusive**
10/01/12 – 9/30/14

**Direct Dollars (total/annual)**
Total: $341,262; Annual: $170,631

**Indirect Dollars (total/annual)**
Total: $76,698; Annual: $38,349

**Description**
We have developed a genome-wide transcriptomic approach, termed BrU-Seq, capable of generating transcriptional signatures at an unprecedented level of detail, as well as lentiviral tools for efficiently generating human cell lines specifically defective in the spectrum of eukaryotic DNA repair pathways. We will combine these technologies to identify transcriptional signatures of cells deficient in homologous recombination as compared to other DNA repair pathways in isogenic normal epithelial MCF-10A cell lines.

---

**Source/Grant Number**
UPCI Pilot Funding Program

**Grant Title**
Unbiased identification of UBE3B target proteins using differential mass spectrometry

**Role in Project & Percentage of Effort**
Principal Investigator; concurrent support

**Years Inclusive**
10/01/13-09/30/14

**Direct Dollars (total/annual)**
Total: $5,000

**Indirect Dollars (total/annual)**
Total: 0

**Description**
Here, we propose to apply dMS to a multi-factorial study involving LN428/HA-UBE3B cells and in cells responding to stress (TMZ) with the goal of identifying and quantifying the abundance and identity of UBE3B-bound proteins in control cells and in response to stress (ROS).

---

**Source/Grant Number**
UPCI Pilot Funding Program

**Grant Title**
Unbiased identification of novel Polβ-interacting proteins using differential mass spectrometry

**Role in Project & Percentage of Effort**
Principal Investigator; concurrent support

**Years Inclusive**
03/01/14-09/30/14

**Direct Dollars (total/annual)**
Total: $5,000

**Indirect Dollars (total/annual)**
Total: 0

**Description**
Here, we propose to apply ***dMS*** to a multi-factorial study involving LN428/EGFP, LN428/Flag-Polβ(WT) and LN428/Flag-Polβ(TM) cells and in cells responding to stress from either the chemotherapeutic agent temozolomide (TMZ) or cisplatin, with the goal of identifying and quantifying the abundance and identity of unique Polβ-interacting proteins in control cells or in response to stress from these two different damaging agents (TMZ and cisplatin).

---

**Source/Grant Number**
NIH / R01 NS037704-12A1

**Grant Title**
Molecular Markers as Predictors of Outcome in Glioma

**Role in Project & Percentage of Effort**
Co-Investigator; 10% (1.2 Calendar) (PI; Pollack)

**Years Inclusive**
2/15/11 - 1/31/16

**Direct Dollars (total/annual)**
Total: $63,915; Annual: $15,979

**Indirect Dollars (total/annual)**
Total: $32,916; Annual: $8,229

**Description**
The goal of this project is to evaluate gene expression in clinical samples from pediatric glioma patients treated with alkylator therapy and determine the role of expression of these genes in response to therapy.

---

**Source/Grant Number**
2 R44 ES021116-02A1

**Grant Title**
DNA Repair-on-a-Chip: Spatially Encoded Microwell Arrays

**Role in Project & Percentage of Effort**
Co-Principal Investigator; 20.00% (2.4 Calendar)

**Years Inclusive**
09/01/13-08/31/15

**Direct Dollars (total/annual)**
Total: $480,852; Annual: $240,426*
**(Year 1 actual, Year 2 projected)*

**Indirect Dollars (total/annual)**
Total: $253,648; Annual: $126,824*
**(Year 1 actual, Year 2 projected)*

**Description**
This Phase II proposal combines the use of agarose-based Microwell arrays, spatially encoded cellular recognition, human tumor cell lines with genetically defined DNA repair status and extra-cellular matrix proteins to optimize, validate and commercialize a series of Spatially Encoded Microwell Arrays that will function as a tool to quantify DNA damage and measure cellular DNA Repair capacity.

---

**Source/Grant Number**
1R43ES025138-01A1

**Grant Title**
Quantitative Real-Time DNA Repair Analysis Tools

**Role in Project & Percentage of Effort**
Principal Investigator; 5.0% (.6 Calendar)

**Years Inclusive**
12/01/14-11/30/15

**Direct Dollars (total/annual)**
Total/Annual: $48,701

**Indirect Dollars (total/annual)**
Total/Annual: $26,299

**Description**
This Phase I proposal is for the development of *DNA Repair Lights, DNA Repair PureLights,* and *Capture Repair Assays* as the first in a series of assays towards the development of a *DNA Repairomics* platform by the end of the Phase II project.
---

**Source/Grant Number**
DURIP DOD/Navy GRANT11998991 Award N000141613041

**Grant Title**
Integrated DNA damage confocal microscope

**Role in Project & Percentage of Effort**
(Sobol, PI) 0.00 Calendar

**Years Inclusive**
8/15/16-8/14/17

**Funding level (Direct/total)**
*$250,000 ($250,000)*

**Description**
The grant will allow the purchase of a "Nikon A1Rsi Confocal microscope/TiE motorized microscope with Perfect focus system and "Stage Up" kit", including a four-laser unit with solid state lasers for 405nm, 488nm, 561nm, and 640nm and other features.

---

**Source/Grant Number**
University of South Alabama Research and Scholarly Development Grant

**Grant Title**
High throughput next generation CometChip platform for assessment of fish and human genome damage following exposure to harmful algal toxins

**Role in Project & Percentage of Effort**
Co-PI; 5.0% (0.6 Calendar) (w/Alison Robertson)

**Years Inclusive**
4/01/16-3/31/17

**Funding level (Direct/total)**
*$25,000 ($25,000)*

**Description**
This highly multidisciplinary research will provide the first step towards understanding the sub-lethal and combined genotoxicity effects of natural marine toxins in fish and humans using innovative "gene-on-a-chip" technology.

---

**Source/Grant Number**
1R13CA216985-01

**Grant Title**
*6th EU-US Conference on Repair of Endogenous DNA Damage*

**Role in Project & Percentage of Effort**
Principal Investigator; 1.0% (0.1 Calendar)

**Years Inclusive**
4/01/17-3/31/18

**Funding level (Direct/total)**
$5,000 ($5,000)

**Description**
This grant will fund the 6th EU-US Conference on Repair of Endogenous DNA Damage meeting held in Udine, Italy.

---

**Source/Grant Number**
1R01 CA207209-01

**Grant Title**
Inhibition of the ALT pathway by interfering with Poly-ADP-Ribose metabolism

**Role in Project & Percentage of Effort**
Co-Investigator; 5.0% (0.6 Calendar)

**Years Inclusive**
7/01/16-6/30/18

**Funding level (Direct/total)**
$21,456 ($32,506)

**Description**
In this project, we will use study how Poly-ADP-ribose impacts alternate mechanisms of telomere lengthening.

---

**Source/Grant Number**
R13ES030305-01

**Grant Title**
*1st Southern Genome Maintenance Conference*

**Role in Project & Percentage of Effort**
PI (0.1%)

**Years Inclusive**
9/01/18 - 8/30/19

**Funding level (Direct/total)**
$5,500 ($5,500)

**Description**
A major goal of the Southern Genome Maintenance Conference is to foster collaborative research on the cellular processes that affect genomic instability in cancer, upon environmental exposure and as a result of health disparities, to promote collaboration within and across disciplines and to enhance the development of the next generation of researchers.

---

**Source/Grant Number**
R13CA243573-01

**Grant Title**
*Genome Maintenance Systems in Cancer Etiology and Therapy: A Tribute to Paul Modrich*

**Role in Project & Percentage of Effort**
Co-Investigator; 0% (0.0 Calendar)

**Years Inclusive**
9/01/19-08/31/20

**Funding level (Direct/total)**
$10,000 ($10,000)

**Description**
“Genome Maintenance Systems in Cancer Etiology and Therapy: A Tribute to Paul Modrich”. The symposium will celebrate Prof. Modrich’s foundational contributions to the DNA repair field and will provide a forum for discussion and exploration of many of the current conceptually and experimentally innovative research topics on cancer etiology and therapy that have grown out of his seminal studies.

---

**Source/Grant Number**
NIH / 2R01CA148629-07A1

**Grant Title**
Novel approaches to enhance tumor cell cytotoxicity of alkylating agents

**Role in Project & Percentage of Effort**
Principal Investigator; 20% (2.4 Calendar)

**Years Inclusive**
3/15/17 – 9/30/22

**Funding level (Direct/total)**
*$1,211,923 ($1,774,155)*

**Description**
These studies involve the analysis of Polβ protein ubiquitylation.
---

**INVITED LECTURES and POSTER PRESENTATIONS**

*Ciguatoxins suppress $NAD^+$/NADH pools and trigger nuclear DNA damage dependent on base excision repair* (Virtual)
2023 Oceans and Human Health annual meeting; May 11, 2023
Invited Speaker

*New targets for precision oncology - targeting poly(ADP-ribose) metabolism and replication stress*
Cross Cancer Institute Seminar Series (Virtual)
University of Alberta; May 3, 2023
Invited Speaker

*Targeting oncogenic and chemotherapy induced replication stress mechanisms in glioma*
LCC CNS Cancer TRDG Seminar Series
Legorreta Cancer Center (LCC) at Brown University; April 28, 2023
Invited Speaker

*Discussing new areas of interest for base excision repair - from the aging neuron to replication stress*
DNA Repair and Mutagenesis Seminar Series
MIT; April 13, 2023
Invited Speaker

*Understanding DNA Repair and Replication Stress Mechanisms to Uncover New Targets for Precision Medicine in Cancer*
Department of Pathology & Laboratory Medicine Seminar Series
Brown University; March 22, 2023
Invited Speaker

*Targeting poly(ADP-ribose) metabolism and replication stress in cancer - new targets to consider for precision medicine*
COBRE Stem Cell and Aging Seminar Series
Lifespan Cancer Institute; Feb 13, 2023
Invited Speaker

*Base excision repair regulation of replication stress induced poly(ADP-ribose) checkpoints*
Gordon Research Conference, Mammalian DNA Repair; “Genome Maintenance: From Molecules and Mechanisms to Humans and Therapies”
Ventura, CA; Feb 5-10, 2023
Invited Speaker

*Targeting poly(ADP-ribose) metabolism and replication stress in cancer - new targets to consider for precision medicine*
Structural Biology of DNA Repair Machines group
MD Anderson; Dec 6, 2022
Invited Speaker

*Targeting poly(ADP-ribose) metabolism and replication stress in cancer - new targets to consider for precision medicine*
Cancer Biology Program meeting
Legorreta Cancer Center (LCC) at Brown University; Nov 11, 2022
Invited Speaker

*Intro to the Cancer Etiology session*
*Poster: Polβ/XRCC1 heterodimerization dictates DNA damage recognition and basal Polβ protein levels without interfering with mouse viability or fertility*
7th US-EU Conference on Endogenous DNA Damage and Repair
Stony Brook, NY; Nov 6-9, 2022; Organizer, Invited Speaker, and Poster presentation

*Poly-ADP-Ribose in the Regulation of DNA Repair and the Cellular Response to Genotoxins*
Erasmus MC, Department of Molecular Genetics, Rotterdam, The Netherlands
October 4, 2022
Invited Speaker

*Introduction & Seminar: Mouse DNA polymerase beta - does it work alone?*
Special Symposium: Samuel H. Wilson Memorial meeting DNA Damage & Repair – Inspiring basic and applied research on the crucial importance of genome maintenance mechanisms
13th International Conference on Environmental Mutagens: Maintaining Genomic Health in a Changing World – Ottawa, Canada; Aug 27-Sept 1, 2022
Invited Speaker and Organizer

*Live Cell Detection of Poly(ADP)-Ribose for Use in Genetic and Genotoxic Compound Screens*
AGT SIG Breakfast seminar
13th International Conference on Environmental Mutagens: Maintaining Genomic Health in a Changing World – Ottawa, Canada; Aug 27-Sept 1, 2022
Invited Speaker

*Poly-ADP-Ribose in the Regulation of DNA Repair and the Cellular Response to Genotoxins*
Symposium: Polynucleotide signatures and regulation of genotoxin stress response
13th International Conference on Environmental Mutagens: Maintaining Genomic Health in a Changing World – Ottawa, Canada; Aug 27-Sept 1, 2022
Invited Speaker and session organizer

*Introduction and highlights honoring Sam Wilson*
2nd Southern Genome Stability meeting – Miami
June 25-26, 2022
Invited Speaker and Co-organizer

*Base excision repair mediated regulation of the replication-stress induced intra S-phase checkpoint.*
Gordon Research Conference, DNA Damage, Mutation and Cancer
"From DNA Damage, Repair and Replication to Immune Activation and Cancer Therapy"
March 6-11, 2022
Invited Speaker

*Regulation and dynamics of global and replication associated base excision repair*
*Massey Cancer Center, VCU*
*December 13, 2021*
Invited Speaker, Virtual Seminar

*The PARP/NAD+/SIRT6 axis modulates the temporal dynamics of base excision / single-strand break repair protein complex assembly and disassembly.*
Gordon Research Conference, Mammalian DNA Repair
"Understanding and Targeting the DNA Repair Pathways"
October 31 - November 5, 2021
Invited Speaker

*Poly(ADP-Ribose) and NAD+-Driven Temporal Dynamics of Base Excision Repair Complex Formation*
University of Toledo Department of Cancer Biology (Virtual Seminar)
October 14, 2021
Invited Speaker, Virtual Seminar

*The PARP/NAD$^+$/SIRT6 axis modulates the temporal dynamics of base excision / single-strand break repair protein complex assembly and dis-assembly*
FEBS Advanced Lecture Course PARP2021
September 9, 2021
Invited Speaker, Virtual Seminar

*Mapping and exploring BER and DNA single-strand break repair protein complexes globally and at the replication fork*
Vaziri Lab, UNC Chapel Hill
August 13, 2021
Invited Speaker, Virtual Seminar

*Population analysis of DNA damage integrity*
NIEHS U01 status update, Virtual
March 2, 2021
Invited Speaker, Virtual Seminar

*Workshop: Current approaches on cell-based laser and light induced DNA damage and application to the study of mechanisms of genotoxicity*
EMGS DNA Repair SIG WOW virtual Event
Feb 16, 2021
*Discussion Leader*
*Mapping and exploring DNA single-strand break repair protein complexes*
Brown University School of Medicine
Feb 12, 2021
Invited Speaker, Virtual Seminar

*Poly(ADP-ribose)- and NAD$^+$-driven temporal dynamics of base excision repair complex formation*
Cold Spring Harbor Labs (CSHL) Conference on The PARP Family and ADP-ribosylation
Dec 9-11, 2020
Invited Speaker

*Towards an analysis of DNA repair deficiency signatures in human population samples*
International Society for Experimental Epidemiology (ISEE) Workshop 2020
October 8, 2020
Invited Speaker

*Exploring the base excision repair pathway for new cancer targets*
University of South Alabama, Department of Cell Biology
October 7, 2020
Invited Speaker

*Uncovering mechanisms of BER regulation in human cells*
NIH DNA Repair Videoconference series
June 16, 2020
Invited Speaker

*New adventures exploring DNA single-strand break repair complexes*
MCI Data in Progress ZOOM seminar program
June 8, 2020
Invited Speaker

*Temporal regulation of base excision repair protein complex assembly in cancer cells*
UNC Charlotte, Department of Biological Sciences
November 21-22, 2019
Invited Speaker

*The Greater Caribbean Center for Ciguatera Research – mechanisms of human cell genotoxicity*
10th US HAB Symposium
Orange Beach, AL
November 3-8, 2019
Invited Speaker

*Base excision repair proteins coming-and-going: towards a temporal map of base lesion repair*
1st Southern Structural Biology Symposium
Mitchell Cancer Institute, University of South Alabama
October 11, 2019
Invited Speaker

*Opening Remarks*
EMGS Special Symposium
Genome Maintenance Systems in Cancer Etiology and Therapy - A Tribute to Paul L. Modrich
September 18-19, 2019, Capital Hilton Washington DC
Co-organizer
*Regulation of Base Excision Repair Complex Assembly and Disassembly in Human Cells*
EMGS Special Symposium
Genome Maintenance Systems in Cancer Etiology and Therapy - A Tribute to Paul L. Modrich
September 18-19, 2019, Capital Hilton Washington DC
Invited Speaker

*The Greater Caribbean Center for Ciguatera Research – examining the impact of climate change on Ciguatera and its toxic metabolites through the food web and the mechanisms of human cell genotoxicity*
50th EMGS Annual Meeting
Oceans and Environmental Health Symposium, September 21, 2019; Capital Hilton Washington DC
Invited Speaker
*Developing DNA repair pathway specific genotoxic signatures*
ACS 2019 National Meeting, Emerging topics in Chemical Toxicology
August 27, 2019; San Diego CA
Invited Speaker

*Advancing Base Excision Repair Mechanistic Insight to Reveal New Targets in Cancer Treatment*
UConn Health Seminar Series; Department of Molecular Biology and Biophysics
August 19-21, 2019; UConn Health
Invited Speaker

*Temporal dynamics of base excision repair complex formation*
2019 FASEB conference on NAD+ Metabolism and Signaling
June 23-28, 2019, at Trinity College Dublin
Invited Speaker

*Advancing precision medicine and inhibitor discovery by real-time measurement of DNA repair capacity with molecular beacons*
Genetic Toxicology Association 2019 Annual Meeting
Clinical Impact of Genotoxicity Testing session, University of Delaware
May 8, 2019; Newark, DE
Invited Speaker

*Advancing Base Excision Repair Mechanistic Insight to Reveal New Targets in Cancer Treatment*
Basic and Translational Seminar Series; UPMC Hillman Cancer Center
April 23, 2019; Pittsburgh, PA
Invited Speaker

*From Post-doc to Professor in a Cancer Center – a path of research and discovery*
ASBMB 2019 Career Development Program for Graduate Students and Postdoctoral Fellows
April 6, 2019; Orlando, FL
Invited Speaker
*Advancing base excision repair mechanistic insight to reveal new targets in cancer treatment*
USA College of Medicine Distinguished Scientist Seminar Series
March 7, 2019; Mobile, AL
Invited Seminar Speaker

*Advancing base excision repair mechanistic insight to reveal new targets in cancer treatment*
Georgetown-Lombardi Comprehensive Cancer Center; Oncology Grand Rounds Lecture series
March 1, 2019; Washington, D.C.
Invited Seminar Speaker
*Base excision repair - A functional node in the crosstalk between DNA repair and metabolism*
NIEHS Training Program in Environmental Health Sciences at UC Davis
December 20, 2018; Davis, CA
Invited Seminar Speaker

*Base excision repair - A functional node in the crosstalk between DNA repair and metabolism*
University of Texas Southwest Medical Center
October 9, 2018; Dallas, TX
Invited Seminar Speaker
*Base excision repair - A functional node in the crosstalk between DNA repair and metabolism*
Florida State University Department of Biomedical Sciences
October 3, 2018; Tallahassee, FL
Invited Seminar Speaker

*Base excision repair - A functional node in DNA repair pathway crosstalk*
Karmanos Cancer Center
June 11, 2018; Detroit, MI
Invited Seminar Speaker

*Base excision repair - A functional node in DNA repair pathway crosstalk*
NIEHS, NIH
June 15, 2018; RTP, NC
Invited Seminar Speaker

*Advances in the analysis of DNA damage, DNA repair capacity and DNA repair (BER) protein complex dynamics*
Fox Chase Cancer Center
May 1, 2018; Philadelphia, PA
Invited Seminar Speaker

*Advanced Tools for DNA Repair and DNA Damage Analysis*
Genetic Toxicology Association (GTA)
2018 Annual Meeting - Tools and Technologies for Human Biomonitoring
Newark, Delaware, May 2-4, 2018
Invited Seminar Speaker

*Advances in the analysis of DNA damage, DNA repair capacity and DNA repair (BER) protein complex dynamics; D* epartment of Cell Systems & Anatomy; UT Health Science Center at San Antonio
March 14, 2018; San Antonio, TX
Invited Seminar Speaker

*Next generation high throughput DNA damage detection platform for genotoxic compound screening*
Society of Toxicology meeting
March 13, 2018; San Antonio, TX
Invited Seminar Speaker

*Advances in the analysis of DNA damage, DNA repair capacity and DNA repair (BER) protein complex dynamics*
Department of Biochemistry and Molecular Biology; University of Miami Miller School of Medicine
Feb 23, 2018; Miami, Florida
Invited Seminar Speaker

*Metabolite, ADP-ribose and ubiquitin-mediated regulation of base excision repair*
Department of Cancer Biology, Kansas University Cancer Center
Nov 6, 2017; Kansas City, Kansas
Invited Seminar Speaker

*ADP-ribose, ubiquitin, and metabolite-mediated regulation of base excision repair*
NIEHS, NIH
Sept 8, 2017; RTP, North Carolina
Invited Seminar Speaker

*ADP-ribose, ubiquitin, and metabolite-mediated regulation of base excision repair*
UC San Diego, School of Medicine
July 31, 2017; San Diego, CA
Invited Seminar Speaker

*Exploring a role for CD73 in NAD+ biosynthesis in cancer cells and the impact on DNA repair and mitochondrial function*
FASEB Science Research Conference; $NAD^+$ Metabolism and Signaling 2017
July 9, 2017 – July 14, 2017; New Orleans, Louisiana
Invited Seminar Speaker

*UBE3B, the gene involved in Kaufman oculocerebrofacial syndrome, is a calmodulin regulated, mitochondrion associated E3 Ubiquitin Ligase*
University of Cincinnati, Department of Environmental Health
March 7-8, 2017
Invited Seminar Speaker

*Regulation of Base Excision Repair by Ubiquitylation*
Washington University School of Medicine & Siteman Cancer Center
Department of Pathology and Immunology, St. Louis, Missouri
October 4-6, 2016
Invited Seminar Speaker

*Predicting Genotoxicity Using Tox21 High-Throughput Screening Data*
EMGS 2016 Annual Meeting, Kansas City, Mo
September 24-28, 2016
Poster presentation

*Next Generation High-Capacity DNA Damage Detection Assay for Chemotherapeutic and Genotoxic Compound Screening*
EMGS 2016 Annual Meeting, Kansas City, Mo
September 24-28, 2016
Poster presentation

*Base excision repair, ADP-ribosylation and NAD metabolism coverage for genome maintenance*
Department of Biopharmaceutical Sciences
University of Illinois at Chicago, Chicago IL
September 6-8, 2016
Invited Seminar Speaker

*Regulation of Base Excision Repair by Post-Translational Modification*
Oregon Institute of Occupational Health Sciences
Oregon Health & Science University, Portland OR
June 1, 2016
Invited Seminar Speaker

*Cellular mechanisms of repair and response to oxidized nucleotides*
Symposium "Frontiers in DNA damage and repair" (May 24, 8 am -12 pm)
American Society for Photobiology Annual Meeting
May 21-26, 2016; Tampa, FL,
Invited Seminar Speaker

*Next Generation High-Capacity DNA Damage Detection Assay for Chemotherapy and Genotoxic Compound Screening*
AACR Annual Meeting
May 17-19, 2016; New Orleans, LA
Poster Presentation

*Base excision repair, ADP-ribosylation and NAD metabolism converge for genome maintenance*
Department of Chemistry and Biochemistry
Florida International University
February 26, 2016; Miami, FL
Invited Seminar Speaker

*Protein complexes and ubiquitylation regulates base excision repair protein stability*
UConn Health Center
February 24, 2016; Farmington, CT
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
University of Alabama, Birmingham
Microbiology Seminar Series
November 3, 2015; Birmingham AL
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
Oncoveda Cancer Research Center
October 21, 2015; Hamilton, NJ
Invited Seminar Speaker

*ARTD1-mediated nuclear to mitochondrial communication*
NAD Metabolism and Signaling
FASEB Summer Conference
August 9-14, 2015; Timmendorfer Strand, Germany
Invited Seminar Speaker

*Quantitative Real-Time DNA Repair Analysis Tools*
NIEHS, NIH
June 11, 2015; RTP, NC
Invited Seminar Speaker
*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
Tulane Cancer Center
Tulane School of Medicine
April 23, 2015; New Orleans, LA
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
Labatt Brain Tumour Research Centre
The Hospital for Sick Children
April 16, 2015; Toronto, ON
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
CCRCB; Queen's University Belfast
April 1, 2015; Belfast, Northern Ireland
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
Rotterdam-Leiden DNA Repair group
March 27, 2015; Leiden, NL
Invited Seminar Speaker

*Targeting ADP-ribosylation proteins in glioma stem cells*
*Fusion Conference: Exploring DNA Repair Pathways as Targets for Cancer Therapy*
*12-15 February 2015; Cancun, Mexico*
Invited Seminar Speaker

*Base excision repair, ADP-ribosylation and NAD metabolism: A convergence of processes to maintain the genome*
HudsonAlpha Institute for Biotechnology
January 28, 2015; Huntsville, AL
Invited Seminar Speaker

*Mechanisms regulating BER protein stability and pathway choice*
5th US-EU Conference on Repair of Endogenous DNA Damage
November 12-16, 2014, Sante Fe, New Mexico
Invited Seminar Speaker

*DNA damage-induced regulation of base excision repair protein stability and ARTD1 activation*
9th International Conference of Anticancer Research
6-10 October 2014, Sithonia, Greece
Invited Seminar Speaker

*Knocking, cutting and interjecting - tweaking the genome to understand genome repair*
Science2014 – Sustain it!
University of Pittsburgh Science 2014 Celebration
October 3, 2104; Pittsburgh PA
Invited Seminar Speaker
*Uncovering New Genes, Proteins And Pathways Regulated By The ARTD1/PARG Axis*
Environmental Mutagen and Genomics Society (EMGS)
45th Annual Meeting; Orlando Florida
September 15, 2014
Poster presenter & Invited Seminar Speaker

*Coordination of the ubiquitin/proteosome pathway and PARP1 activation in DNA repair pathway choice*
State Key Laboratory of Medicinal Chemical Biology, Nankai University, Tianjin, China
June 27, 2014; Invited Seminar Speaker

*From the bench to the market: making tools to advance biology*
College of Nanoscale Science and Engineering
University at Albany, SUNY; Albany, NY
May 2, 2014

*Base excision repair, ADP-Ribosylation and $NAD^+$: An essential triad in genome stability and chemotherapeutic response*
Pharmacology & Chemical Biology Seminar Series
University of Pittsburgh
April 15, 2014; Invited Seminar Speaker

*Coordination of the ubiquitin/proteosome pathway and PARP1 activation in DNA repair pathway choice*
Prostate and Urologic Cancer Program (PUCP) Seminar Series
UPCI, University of Pittsburgh
April 7, 2014; Invited Seminar Speaker

*Coordination of the ubiquitin/proteosome pathway and PARP1 activation in DNA repair pathway choice*
Department of Chemistry; Wayne State University, Detroit, MI
April 4, 2014; Invited Seminar Speaker

*The PARP1/PARG dynamic in the regulation of base excision repair*
2014 Gordon Research Conference
DNA Damage, Mutation & Cancer; Choices and Crosstalk Between Alternative Pathways
March 16-21, 2014; Ventura Beach Marriott, Ventura, CA
Invited Seminar Speaker

*Proteosome-mediated regulation of base excision repair*
University of Toledo, College of Medicine
Department of Biochemistry & Cancer Biology
November 21, 2013; Invited Seminar Speaker

*Proteosome-mediated regulation of base excision repair*
V-FARM DNA, V Fundamental Aspects of DNA Repair and Mutagenesis
Sao Paulo, Brazil; October 31-November 2, 2013; Invited Seminar Speaker

*Exploring the PARP-interactome in the cellular response to genotoxins*
11th ICEM, Symposium: Survival and death pathways triggered by chemotherapeutics
November 3-6, 2013, Foz do Iguassu, Brazil; Invited Seminar Speaker

*Development of a high throughput Comet platform and its applications*
11th ICEM, Symposium: Comet takes off
November 3-6, 2013, Foz do Iguassu, Brazil; Invited Seminar Speaker
*BER Crosstalk to DSB Repair Pathways*
Environmental Mutagenesis and Genomics Society (EMGS) 2013 Annual meeting
Monterey, CA
September 21-25, 2013; Session Chair, Session organizer and Invited Seminar Speaker

*DNA damage induced PARP1 hyperactivation negatively regulates glycolysis independently of $NAD^+$ depletion*
PARP2013 – 19th International Conference on ADP-ribosylation
Quebec City, Canada
September 6-9, 2013; Invited Seminar Speaker

*DNA repair and NAD biosynthesis crosstalk*
Federation of American Societies for Experimental Biology, Science Research Conference
NAD Metabolism & Signaling: Co-Organizer
Chicago, Illinois
July 14-19, 2013; Session Chair, Session organizer and Invited Seminar Speaker

*Coordinated response of PARP1 and PARG to facilitate DNA repair pathway choice*
FEBS Workshop, Nucleotide Excision Repair and Interstrand Crosslink Repair- From Molecules to Man
Smolenice, Slovakia
June 9, 2013; Invited Speaker

*Proteosome-mediated regulation of base excision repair*
University of South Alabama, Mitchell Cancer Institute
Mobile, Alabama
May 28, 2013; Invited Seminar Speaker

*Proteosome-mediated regulation of base excision repair*
LUMC, Department of Toxicogenetics
Leiden, Netherlands
February 4, 2013; Invited Seminar Speaker

*PARP, bioenergetics, and base excision repair*
Workshop on Mitochondria, Energetics, Epigenetics, Environment, and DNA Damage Response
NIEHS, NIH
RTP, North Carolina
March 25, 2013; Invited Seminar Speaker

*PARP1 - A mediator of genotoxin response pathway crosstalk*
University of North Texas, Department of Molecular Biology and Immunology Seminar
Denton, Texas
February 4, 2013; Invited Seminar Speaker

*PARP1 - A mediator of genotoxin response pathway crosstalk*
University of Michigan, Pathology Research Seminar
Ann Arbor, MI
December 13, 2012; Invited Seminar Speaker

*PARP1 - A mediator of genotoxin response pathway crosstalk*
University of Pittsburgh Cancer Institute Basic & Translational Research Seminar Series
Pittsburgh, PA
November 13, 2012; Invited Seminar Speaker

*PARP1 - A mediator of genotoxin response pathway crosstalk*
University of South Alabama, Mitchell Cancer Institute
Mobile, Alabama
November 8, 2012; Invited Seminar Speaker

*Coordination DNA Repair and Cellular Metabolism Crosstalk*
Science2012—Translation; Spotlight Session 1—Targeted Cancer Therapies
University of Pittsburgh
October 4, 2012; Invited Seminar Speaker

*Coordination of DNA polymerase beta, XRCC1 and PARP1 in DNA repair and cell metabolism*
NIEHS, Laboratory of Structural Biology Annual Retreat
Chapel Hill, North Carolina
September 17, 2012; Invited Seminar Speaker

*The interaction and regulation of Polß, XRCC1 and PARP1 in response to DNA damage in tumor cells*
EMS 43rd Annual Meeting
Symposium 1 - Inflammation, Cancer and Aging
Bellevue, Washington
September 9, 2012; Invited Seminar Speaker

*Exploring the Polß/XRCC1 interface and the regulation of base excision repair*
Mutagenesis GRC 2012, Salve Regina College, Newport, RI
August 19-24, 2012; Invited Seminar Speaker (Session: DNA Maintenance Pathways)

*Base excision repair, PARP and NAD+ biosynthesis crosstalk in response to DNA damage*
3rd Erling Seeberg Symposium, Trondheim and Ørland, Norway
Tuesday June 19th to Sunday June 24th 2012; Invited Seminar Speaker

*The interplay of PARP1, Polß and XRCC1 in response to DNA Damage*
*UNT Health Science Center;* College of Pharmacy
May 29, 2012; Invited Seminar Speaker

*The interplay of PARP1, Polß and XRCC1 in response to DNA Damage*
Laboratory of Molecular Pharmacology*;* Center For Cancer Research
National Cancer Institute, NIH
May 11, 2012; Invited Seminar Speaker

*XRCC1 independent recruitment and function of DNA Polß in response to DNA damage and PARP activation*
Gordon Research Conference; DNA Damage, Mutation & Cancer; Ventura, California
Session Chair: Role of PARP in Genomic Stability and Cancer Chemotherapy
March 25-29, 2012; Invited Seminar Speaker

*DNA repair and $NAD^+$ Biosynthesis crosstalk: Understanding and exploiting PARP activation-induced cellular energy modulation*
Department of Pharmacology and Pharmaceutical Sciences, University of Southern California
March 23, 2012; Invited Seminar Speaker

*DNA repair and $NAD^+$ Biosynthesis crosstalk: Understanding and exploiting PARP activation-induced cellular energy modulation*
Department of Biochemistry, Carver College of Medicine, University of Iowa
February 8, 2012; Invited Seminar Speaker
*Exploiting NAD-biosynthesis defects in glioma for tumor specific responses*
University of Pittsburgh Department of Pharmacology & Chemical Biology 2012 Retreat
February 3, 2012; Invited Seminar Speaker

*Base excision repair and $NAD^+$ Biosynthesis crosstalk - Understanding and exploiting PARP activation-induced cellular energy modulation*
Université Laval; Quebec City, Canada
October 20, 2011; Invited Seminar Speaker

*Temporal and spatial resolution of PARP activation-induced cellular energy modulation*
EMS 42nd Annual Meeting
Environmental Impacts on the Genome and Epigenome: Mechanisms and Risks
Symposium 5 - Mechanisms and Roles of PARP in Response to Environmental Genotoxins
Montreal, Quebec, Canada
October 17, 2011; Session Chair, Session organizer and Invited Seminar Speaker

*Insights into base excision repair and response to chemotherapy*
Institute of Toxicology (Institut für Toxikologie), Universitätsmedizin Mainz; Mainz, Germany
September 12, 2011; Invited Seminar Speaker

*Insights into base excision repair and response to chemotherapy*
Molecular Mutagenesis & DNA Repair Unit, Istituto Nazionale Ricerca Cancro; Genoa, Italy
September 9, 2011; Invited Seminar Speaker

*Exploiting NAD-biosynthesis defects in glioma for tumor specific responses*
FASEB SUMMER Research Conference – NAD Metabolism and Signaling, Lucca, Italy
September 4-8, 2011; Invited Seminar Speaker

*Insights into base excision repair and response to chemotherapy*
DNA Damage and Repair Symposium, Abbott Laboratories, Inc.
July 27-28, 2011; Invited Seminar Speaker

*Thoughts on inhibition of DNA Polymerase Beta: Why and how?*
UPDDI, University of Pittsburgh
June 27, 2011; Invited Seminar Speaker

*Exploiting the biology of BER inhibition to improve chemotherapeutic response &*
*N-methylpurine DNA glycosylase and DNA Polymerase ß modulate BER inhibitor potentiation of glioma cells to temozolomide*

Responses to DNA damage: from molecular mechanism to human disease (Conference),
Egmond aan Zee, The Netherlands
April 3-8, 2011; Poster Presenter

*Exploring the Nexus of DNA Repair and Bioenergetics in the Response to Chemotherapy*
Markey Cancer Center, University of Kentucky
December 15, 2010; Invited Seminar Speaker

*DNA Glycosylase Expression and Modulation of PARP Inhibitor Response*
EMS Annual meeting 2010
October 23-27, 2010; Poster Presenter

*DNA glycosylase expression modulates PARP inhibitor response*
PARP2010
August 17-22, 2010; Poster Presenter

*DNA Repair and $NAD^+$ Metabolism in response to DNA damage*
Keystone Cell Death Pathways X3/X4 Symposium
March 12-17, 2010; Poster Presenter

*Energy balance, DNA Repair & Chemotherapy Response*
Department of Pharmaceutical Sciences Seminar Program, University of Pittsburgh
November 3, 2009; Invited Seminar Speaker

*The Intimate Relationship between Base Excision Repair and $NAD^+$ Biosynthesis in the Response to Chemotherapy-Induced DNA Damage*
Environmental Mutagen Society 40$^{th}$ Annual Meeting, St. Louis
October 2009; Invited Seminar Speaker

*Bioenergetic metabolites regulate base excision repair dependent cell death in response to chemotherapy-Induced DNA damage*
The University of Arizona, Drug Discovery and Development Seminar Series
September 24, 2009; Invited Seminar Speaker

*DNA polymerase ß and BER regulation of DNA damage-induced energy failure and necrosis*
NAD+ Metabolism and Signaling, FASEB Summer Research Conference
June 26, 2009; Invited Seminar Speaker

*Base Excision Repair Inhibition and Chemotherapeutic Response*
UPCI Annual Retreat
June 19, 2009; Invited Seminar Speaker

*Does gene expression response to genotoxicants depend on overall DNA repair capacity?*
University of Pittsburgh Department of Biomedical Informatics
April 17, 2009; Invited Seminar Speaker

*Base excision repair and NAD+ biosynthesis pathways modulate DNA damage-induced tumor cell death*
Department of Biological Sciences, Hampton University
March 19, 2009; Invited Seminar Speaker

*Insights into tumor cell response to base excision repair failure or How do cells respond to BER inhibition?*
Abbott Laboratories
February 5, 2009; Invited Seminar Speaker

*The 10th Annual Midwest DNA Repair Symposium*
May 10-11, 2008
Pittsburgh, PA
Organizer and Chair

*Will DNA polymerase ß deficiency predispose to environmentally induced diabetes?*
University of Pittsburgh Endocrine Research Conference Series
September 18, 2008; Seminar Speaker

*BER control of necrosis, inflammation, and genome instability: regulation by the cellular glycolytic state*
University of Pittsburgh Cancer Institute, Basic Research Seminar Series
June 11, 2008; Seminar Speaker
*PARP-1 is a base excision repair checkpoint protein*
CRED seminar, U.T.M.D. Anderson Cancer Center
Science Park - Research Division, Department of Carcinogenesis, Smithville, Texas
January 16, 2008; Invited Speaker

*Base Excision Repair and Chemotherapy Response*
Rhode Island INBRE Seminar Series
October 30, 2007; Invited Speaker

*Genome Stability Calls for Balanced Base Excision Repair Protein Expression*
Symposium on Base Excision Repair as a Tumor Suppressor Mechanism; 2007 Annual Environmental Mutagen Society Meeting
October 21-24, 2007; Invited Speaker

*Human Base Excision Repair and Resistance to Chemotherapeutic Alkylating agents*
USC College of Pharmacy, Columbia, South Carolina
September 11, 2007; Invited Speaker
*Human Base Excision Repair and Resistance to Chemotherapeutic Alkylating agents*
Department of Molecular Biology, University of Bergen, Bergen, Norway
June 18, 2007; Invited Speaker

*Human Base Excision Repair and Resistance to Chemotherapeutic Alkylating agents*
2nd International Conference on MGMT and Alkylating Drug Resistance
June 13-16, 2007; Invited Speaker and Session Chair

*Does Base excision repair (BER) regulate DNA damage induced histone modification or does histone modification regulate BER - or both?*
Pittsburgh Chromatin Club
May 4, 2007; Invited Lecturer

*Human DNA Base Excision Repair Proteins Mediate Resistance to Chemotherapeutic Alkylating Agents*
Gittlen Cancer Research Foundation, The Pennsylvania State University College of Medicine
Milton S. Hershey Medical Center
April 5, 2007; Invited Lecturer

*Human Base Excision Repair and Resistance to Chemotherapeutic Alkylating Agents*
University of South Alabama, Distinguished Scientist Seminar Series
October 12, 2006; Speaker
*Human DNA Base Excision Repair Proteins Mediate Resistance to Chemotherapeutic Alkylating Agents by preventing 5'dRP lesion-mediated cytotoxicity*
GRC Mutagenesis
August 6-11, 2006; Poster Presenter

*Mismatch repair (MMR) and Base Excision Repair (BER) protein expression correlates with clinical response to Dacarbazine (DTIC)/Temozolomide (TMZ) therapy of patients with metastatic melanoma*
ASCO Annual Meeting
June 2-6, 2006; Poster Presenter
*DNA Base Excision Repair Proteins Mediate Resistance to Chemotherapeutic Alkylating Agents*
Prostate and Urologic Cancer Program
March 2006; Invited Speaker

*DNA Base Excision Repair Proteins Mediate Resistance to Chemotherapeutic Alkylating Agents*
UPMC Clinical Neuro-Oncology Grand Rounds
December 21, 2005; Seminar Speaker

*Overcoming Alkylating Agent Resistant by Disruption of Base Excision Repair*
MGMT 1st International Meeting, Manchester England
August 8, 2005; Seminar Speaker

*Overcoming Alkylating Agent Resistant in Human Tumor cells by Disruption of Base Excision Repair*
Gordon Research Conference, Genetic Toxicology
August 2005; Poster Presenter

*XRCC1 Mutations and BER capacity: Relationship to genome stability and chemotherapeutic response*
Head and Neck Spore, Pilot Project Presentations
July 2005; Speaker

*Pol ß and Chemotherapeutic response*
DNA Repair and Mutagenesis: From Molecular Structure to Biological Consequences
ASM Conference
November 2004; Poster Presenter
*Pol ß and Chemotherapeutic response*
Responses to Environmental Agents EMS Conference
September 2004; Seminar Speaker

*Base Excision Repair: Maintaining Genome Stability and Drug Resistance*
US/Japan DNA Repair Meeting
June 4-10, 2004; Seminar Speaker

*Base Excision Repair: Maintaining Genome Stability and Drug Resistance*
DNA Repair & Mutagenesis Society, Boston, MA
April 21, 2004; Seminar Speaker

*Impact of DNA Polymerase beta on genome stability and aging*
Barshop Center for Aging & Longevity Studies UTHSCSA
April 9, 2004; Seminar Speaker

*DNA Polymerase beta*
University of Pittsburgh Chromatin Club
April 19, 2004; Seminar Speaker

*DNA Polymerase ß and mammalian base excision repair*
Women's Cancer Research Seminar Series, Magee Women's Research Institute.
Magee-Women's Hospital
February 24, 2004; Seminar Speaker

*DNA Polymerase ß and mammalian base excision repair*
University of Pittsburgh, Biology Honor Society
February 12, 2004; Seminar Speaker

*DNA Polymerase ß and mammalian base excision repair*
Pittsburgh Cytogenetics Club
September 9, 2003; Seminar Speaker
*Alkylation damage and base excision repair*
UPCI Brain Cancer Center
August 18, 2003; Seminar Speaker
*Alkylation damage and base excision repair*
Gordon Conference: Mammalian DNA Repair, Ventura, Ca
January 19-24, 2003; Poster Presenter

*Alkylation damage and base excision repair*
DNA Repair Videoconference
November 2002; Seminar Speaker

*AAG activity in vivo yields a cytotoxic lesion specifically repaired by DNA polymerase ß*
Department of Biology, Northeastern University, Boston, MA
October 2, 2002; Seminar Speaker

*AAG activity in vivo yields a cytotoxic lesion specifically repaired by DNA polymerase ß*
Gordon Conference: Mutagenesis & Carcinogenesis, Ventura, CA
March 3-8, 2002; Poster Presenter

*Mammalian DNA ß-polymerase in Base excision Repair of Alkylation Damage*
Bioengineering and Environmental Health, MIT, Cambridge, MA
November 26-28, 2001; Seminar Speaker

*Uracil-DNA Glycosylase Protects Mice from Cerebral Ischemia Induced Brain Injury*
Gordon Conference, Mammalian DNA Repair, Ventura, CA
January 21-26, 2001; Poster Presenter

*Mammalian DNA ß-polymerase in Base excision Repair of Alkylation Damage*
Department of Cancer Cell Biology, Harvard School of Public Health
October 12-14, 2000; Seminar Speaker

*Alkylation damage and base excision repair*
NIH Research Festival; October 11-12, 2000; Seminar Speaker

*Transgenic and Other Genetically Manipulated Rodent Models for Aging Research*
The University of Texas Health Science Center at San Antonio
Nathan Shock Aging Center
September 15-16, 2000; Workshop Speaker

*DNA Polymerase ß and mammalian base excision repair*
Cold Spring Harbor Laboratory 65$^{th}$ Symposium; Biological Responses to DNA Damage
May 31-June 5, 2000; Poster Presenter

*Mammalian DNA ß-polymerase in base excision repair of alkylation damage*
BER-2000 Base Excision Repair Workshop, Galveston, Texas
March 2000; Poster Presenter

*DNA Polymerase beta*
American Association of Cancer Research Special Meeting
DNA Repair Defects and Cancer
January 14-18, 2000; Poster Presenter

*(1) Mice and Cells deficient in Uracil-DNA Glycosylase & (2) 5'dRP lyase activity of DNA Polymerase ß is required for Base Excision Repair in vivo & (3) Alkylation-induced DNA damage, repair and Mutagenesis: dependence on DNA Polymerase ß*
DNA Repair & Mutagenesis Meeting, Hilton Head, SC
November 1999; Poster Presenter

*Survival or Death: DNA Repair or Apoptosis*
NIH Research Festival: Speaker Mini Symposium II,
October 7, 1999; Seminar Speaker

*5'dRP lyase activity of DNA Polymerase ß is required for Base Excision Repair in vivo*
Gordon Conference: Genetic Toxicology Oxford, England
August 1-6, 1999; Poster Presenter

*Alkylation-induced DNA damage, repair and Mutagenesis: dependence on DNA Polymerase ß*
Gordon Conference: Mammalian DNA Repair, Ventura, CA
Feb 7-12, 1999; Poster Presenter

*DNA Polymerase ß is required for protection against alkylating agent-induced genomic instability*
Gordon Conference: Genetic Toxicology, New London, NH
June 22-27, 1997; Poster Presenter

*The role of DNA polymerase beta in base excision repair in mouse fibroblasts*
Gordon Conference: Mammalian DNA Repair, Ventura, Ca
Jan 29-Feb 3, 1995; Poster Presenter

**EDITORIAL BOARDS:**

2004-2018: Editorial Board, DNA REPAIR, Elsevier B.V.
2007-2020: Editorial Advisory Board, The Open Toxicology Journal, Bentham Open Press.
2010-2020: Editorial Board, Journal of Carcinogenesis & Mutagenesis
2011-2020: Associate Editorial Board, American Journal of Cancer Research
2012-**Present**: Editorial Board, Mutation Research – Fundamental and Molecular Mechanisms of Mutagenesis
2012-**Present**: Editorial Board, PLoS ONE
2013-**Present**: Invited Editor, Proceedings of the National Academy of Sciences of the USA (PNAS)
2014-2020: Editorial Board, Molecular & Cellular Oncology
2014-2020: Editorial Board, MedCrave Online Journal of Toxicology (MOJT)
2015-**Present**: Editorial Board, Environmental and Molecular Mutagenesis
2018-**Present**: Associate Editor, DNA REPAIR, Elsevier B.V.
2019: Editor, Special Edition "DNA Repair & Cancer", DNA REPAIR, Elsevier B.V.
2022-**Present**: Associate Editor, NAR Cancer, Oxford University Press

***Journal Reviews (Ad hoc reviewer):***
2011-present *African Journal of Biotechnology*
2011-present *Analytical Biochemistry*
2010-present *Antioxidant and Redox Signaling*
2011-present *BBA*
2002-present *Biochemistry*
2011-present *Biology of Reproduction*
2011-present *Brain Pathology*
2011-present *Cancer*
2009-present *Cancer Cell*
2002-present *Cancer Chemotherapy & Pharmacology*
2002-present *Cancer Research*
2002-present *Carcinogenesis*
2002-present *Cell Biology & Toxicology*
2002-present *Cell Cycle*
2002-present *Chemical Research in Toxicology*
2011-present *Chemistry & Biology*
2002-present *Clinical Cancer Research*
2010-present *Digestive Diseases and Sciences*
2002-present *DNA & Cell Biology*
2004-present *DNA Repair*
2009-present *EMBO J*
2008-present *EMBO Reports*
2011-present *Environmental and Molecular Mutagenesis*
2009-present *Environmental and Toxicology & Pharmacology*
2011-present *Expert Opinion On Investigational Drugs*
2002-present *FASEB J.*
2002-present *FEBS Letters*
2009-present *Gene Therapy TIBS Journal of Bacteriology*
2006-present *Glia*
2009-present *Head and Neck*
2008-present *Journal Biological Chemistry*
2010-present *Journal of Cerebral Blood Flow & Metabolism*
2011-present *Journal of Medicinal Chemistry*
2011-present *Journal of Neuro-Oncology*
2010-present *Journal of Neurochemistry*
2010-present *Journal of Surgical Oncology*
2002-present *Leukemia Research*

2002-present *Mechanisms of Aging and Development*
2009-present *Molecular & Cellular Biochemistry*
2002-present *Molecular & Cellular Biology*
2010-present *Molecular Cancer*
2002-present *Molecular Cell*
2002-present *Molecular Pharmacology*
2002-present *Mutation Research*
2008-present *Nature Structural & Molecular Biology*
2002-present *Nucleic Acids Research*
2002-present *Oncogene*
2010-present *PLoS Genetics*
2009-present *PLoS ONE*
2011-present *PNAS*
2011-present *Science Translational Medicine*
2010-present *The Open Toxicology Journal*
2011-present *The Protein Journal*
2002-present *Toxicological Sciences*
2002-present *Tumor Biology*

**Reviews conducted for 2020**

Altex
Critical Reviews In Biochemistry & Molecular Biology
Biochemistry
Biomolecules
Cellular and Molecular Life Sciences
DNA Repair
eLife
FASEB J.
Frontiers in Pharmacology
Frontiers in Cell and Developmental Biology
Genetics & Genomics Next
Advanced Genetics
International Journal of Molecular Sciences
Journal of Molecular Biology
Mutagenesis
Nucleic Acids Research
PNAS
Scientific Reports
Archives of Biochemistry and Biophysics

**Reviews conducted for 2021**

Biochemistry
Biomolecules
Cellular and Molecular Life Sciences
DNA Repair
FASEB J.
Frontiers in Pharmacology
Nature Communications
Journal of Chemotherapy
Redox Biology
NAR Cancer
Scientific Reports
Science Advances
Cell Death & Disease

JACS Au
PNAS
Nucleic Acids Research
Seminars in Cell and Developmental Biology

**Reviews conducted for 2022**
eLife
Scientific Reports
DNA Repair
Nucleic Acids Research
NAR Cancer
Frontiers in Cell and Developmental Biology (Invited Editor)
Cancer Drug Resistance (Invited Editor)
PNAS-NEXUS
Cell Chemical Biology
PNAS
Current Opinion in Structural Biology
Cell Biology and Toxicology

**Reviews conducted for 2023 (to-date)**
Nature Communications
Nucleic Acids Research
PNAS
Journal of Molecular Biology
Journal of Clinical and Translational Hepatology
Nucleic Acids Research
Scientific Reports

***Grant Review Committees:***

| | |
|---|---|
| 2003-2014 | Ad hoc reviewer, Cancer Research UK |
| 2005-2014 | Ad hoc reviewer, Phillip Morris Research Group |
| 2006-2014 | Ad hoc reviewer, Susan G. Komen for the Cure (“Komen”) Research Grant Program |
| 2006-2014 | Ad hoc reviewer, LYTMOS |
| 2007-2014 | Ad hoc reviewer, Research Corporation |
| 2008 | Ad hoc member, Genetic Mechanisms of Cancer Peer Review Committee, American Cancer Society. |
| 2009-2011 | Member, The American Cancer Society DNA Mechanisms in Cancer Peer Review Committee |
| 2010-2011 | Ad hoc reviewer, NIH Study Section, MGC |
| 2010,2012 | Ad hoc reviewer, NIH Study Section, ZRG1 |
| 2012 | Ad hoc reviewer, The American Cancer Society DNA Mechanisms in Cancer Peer Review Committee |
| 2012 | Ad hoc reviewer, NIH Study Section, Somatosensory and Chemosensory Systems |
| 2013-present | Member, The American Cancer Society DNA Mechanisms in Cancer Peer Review Committee |
| 2013-present | Study Section Member, Israel Cancer Research Fund (ICRF) |
| 2014 | Ad hoc reviewer, NIH Study Section; Cancer Etiology (CE) |
| 2014 | Reviewer, NIH Special Emphasis Panel/Scientific Review Group ZES1 LKB-D |
| 2014-2015 | Vice Chair, The American Cancer Society DNA Mechanisms in Cancer Peer Review Committee |
| 2015-present | Chair, The American Cancer Society DNA Mechanisms in Cancer Peer Review Committee |
| 2015 | Ad hoc reviewer, NIH Study Section; Cancer Health Disparities/Diversity in Basic Cancer Research, CDH (April 2015) |
| 2015 | Ad hoc reviewer, NIH Study Section; NIH Common Fund’s 4D Nucleome Program; Nucleomics Tools (U01) (RFA-RM-14-007) (June 2015) |
| 2015 | Ad hoc reviewer, NIH Study Section; Special emphasis panel, Scientific Review Group 2016/01 ZCA1 SRB-L (J1); (October 2015). |

2015 Ad hoc reviewer, DoD Study Section; 2015 Lung Cancer Research Program, Cell and Molecular Biology, CMB; (November 2015).
2016 Ad hoc reviewer, NIEHS (NIH) P42 Superfund Research Program (August 2016); 2017/01 ZES1 LKB-K (S) 1; Superfund Hazardous Substance Research and Training Program.
2016 Ad hoc reviewer, 2016/10 ZES1 LWJ-D (TS) 1; Review of Time Sensitive R21s (Teleconference)
2016- present Ad hoc review panel member, Fund for Scientific Research (FNRS), Belgium
2016 Ad hoc reviewer, UK Medical Research council
2016 – 2018 Cancer Etiology (CE) Study Section, standing member; National Institutes of Health (NIH)
2018 – 2020 Cancer Etiology (CE) Study Section, Chairman; National Institutes of Health (NIH)
2020 Grant review panel, *Ad hoc* reviewer, Fondation pour la Recherche Médicale
2020 Grant review panel, *Ad hoc* reviewer; UK Medical Research Council (MRC), the Korean Ministry of Science and ICT (MSIT) and the National Research Foundation of Korea (NRF).
2020 Grant review panel, *Ad hoc* reviewer; Cell and Molecular Biology-1 (CBM-1) peer review panel of the 2020 Lung Cancer Research Program (LCRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP).
2021 Special Emphasis Study Section Panel; ZRG1 CB-L (02) M; National Institutes of Health (NIH)
2021 NWO proposal review panel; *Ad hoc* reviewer, Dutch Research Council
2021 Grant review panel, *Ad hoc* reviewer, Israel Science Foundation (ISF)
2022 *Ad hoc* reviewer, Special Emphasis Panel/Scientific Review Group 2022/05 ZRG1 F09A-R (20) L meeting.
2023 *Ad hoc* reviewer, Special Emphasis Panel/Scientific Review Group 2023/05 ZRG1 F09A-R (20) L meeting.
2023 Brown University Pathology Pilot Project grant review panel

**OTHER RESEARCH RELATED ACTIVITIES:**

**Patent Submissions**

Provisional Patent Submission:
Title: N-METHYLPURINE DNA GLYCOSYLASE AND POLYMERASE BETA AS BIOMARKERS FOR ALKYLATOR CHEMOTHERAPY POTENTIATION
Application No: 61/320,572 filed April 2, 2010

Provisional Patent Submission:
Title: ALDH1A3 AS A BIOMARKER AND THERAPEUTIC TARGET FOR HIGH-GRADE GLIOMA
Application No: 61/819,361; filed May 3, 2013.

Provisional Patent Submission:
Title: Barcoded Cells Engineered with Heterozygous Genetic Diversity
Application No: 63/108,396 filed on October 17, 2021

Provisional Patent Submission:
Title: Cancer Treatment
Application No: 63/256,595 filed on November 1, 2020

**External Advisory Committees**

**2009** Melanoma Program Project Grant (PI: E.C. Borden, MD)
Taussig Cancer Center; Lerner Research Institute; Cleveland Clinic

**Consulting Agreements**

**2011 – 2017** Scientific Advisory Board, Trevigen, Inc.

**2017 – April 2019** Scientific Advisory Board, Bio-Techne, Inc.

**July 2011** Abbott Labs.

**April 2014 – 2015** Consultant, Deerfield Institute

**April 2014 – present** Scientific Advisory Board, Canal House Biosciences, LLC

**Invention Disclosures (University of Pittsburgh)**

**Invention Disclosure #00984**
June 2004
*Inhibiting DNA polymerase beta to enhance efficacy of temozolomide, a chemotherapeutic agent in the treatment of cancer*

**Invention Disclosure #01874**
November 2008
*DNA Repair Deficient Human SH-SY5Y Cell Lines and Gene Expression Profiles*

**Invention Disclosure #01883**
December 2008
*Improved chemotherapeutic efficacy combining DNA repair inhibition and NAD biosynthesis inhibition*

**Invention Disclosure #01934**
March 2009
*A novel base excision repair - substrate capture reaction (BER-SCR) assay for the quantitative in-solution analysis of 5 'deoxyribose phopsphate lyase activity and application to high-throughput drug screening*

**Invention Disclosure #02134**
February 2010
*N-methylpurine DNA glycosylase (MPG) as a biomarker for alkylator chemotherapy potentiation by inhibitors of poly(ADP-ribosyl)ation*

**Invention Disclosure #02147**
March 2010
*A novel SNP analysis method to detect copy number alterations with an unbiased reference signal directly from tumor samples*

**Invention Disclosure #02190**
May 2010
*DNA Repair deficiency and alterations to the transcriptome and methylome*

**Invention Disclosure #02372**
January 2011
*Real-time, quantitative analysis of methyl-purine DNA glycosylase activity for predicting efficacy of temozolomide potentiation in cancer treatment*

**Invention Disclosure #02653**
January 2012
*Real-time, quantitative analysis of base excision repair (DNA glycosylase and AP endonuclease) activity: optimized for biomarker measurements and evaluating the effectiveness and kinetic parameters of base excision repair inhibitors in vitro and in vivo.*

**Invention Disclosure #02707**
March 20, 2012
*DNA repair deficient MDA-MB-231 cells.*

**Invention Disclosure #02708**
March 20, 2012
*Novel TMZ sensitization genes*

**Invention Disclosure #02811**
June 5, 2012
*Apoptosis deficient LN428 cells*

**Invention Disclosure #02925**
November 12, 2012
Fluorescent protein tagged MDA-231 breast cancer cells for tracing studies

**Invention Disclosure #02926**
November 12, 2012
*Fluorescent protein tagged LN428 glioblastoma cells for tracing studies*

**Invention Disclosure #02951**
December 10, 2012
*ALDH1A3 as a biomarker and potential chemotherapy target specific for Mesenchymal glioma stem cells*

**Invention Disclosure #02973**
February 10, 2013
*Method to stimulate or induce ubiquitylation and proteosome-mediated degradation of the DNA repair enzyme DNA polymerase beta*

**Invention Disclosure #02974**
February 10, 2013
*Method to stimulate or induce ubiquitylation and proteasome-mediated degradation of the DNA repair protein XRCC1*

**Invention Disclosure #03011**
April 2013
*A method for a novel reverse engineering, unbiased discovery platform yielding the optimal dsDNA sequence for any DNA repair or DNA binding protein and application thereof*

**<u>Licenses</u> (University of Pittsburgh)**
**Invention Disclosure #01874**
October 2009
*DNA Repair Deficient Human SH-SY5Y Cell Lines and Gene Expression Profiles*
Technology licensed to Trevigen, Inc.

**Invention Disclosures (University of South Alabama)**

**Invention Disclosure** #2016-001-MCI
*A method to selectively target glioma stem cells by ARTD4 suppression*
Jan 2016

**Invention Disclosure** #2016-022-MCI
*Active site selective inhibitors of the tumor stem cell marker ALDH1A3*
October 2016

**Invention Disclosure** #2016-027-MCI
*Method to define activity, inhibition, or regulation of UBE3B activity*
November 2016

**Invention Disclosure** #2018-006-MCI
*DNA Repair Molecular Beacon assay: a platform for real-time functional analysis of cellular DNA repair capacity*
March 2018

**Invention Disclosure** #2018-007-MCI
*A method to assess DNA damage in field-collected blood samples from turtles and other vertebrates*
March 2018

**Invention ID:** 2020-012-NEW
*A method to develop genetically diverse human cells and evaluation for response to exogenous factors*
June 2020
Technology licensed to Canal House Biosciences, LLC

**Invention ID:** 2020-013-NEW
*A method to visualize PARP1 activation in live cells and identify cellular DNA repair functional defects*
July 2020

**Invention ID:** 2020-014-NEW
*A method for selective depletion of PARP1 expressing tumor cells and tumor stem cells*
July 2020

**Invention ID:** 2020-021-NEW
A novel platform to detect a new class of genotoxic agents
August 2020

**Invention ID:** 2021-012-NEW
*A method to regulate PARP-inhibitor and PARG-inhibitor response in the treatment of cancer and biomarkers thereof*
April 2021

**Licenses (University of South Alabama)**

**Invention Disclosure** #2018-006-MCI
*DNA Repair Molecular Beacon assay: a platform for real-time functional analysis of cellular DNA repair capacity*
March 2018
Technology licensed to Canal House Biosciences, LLC

**Invention ID:** 2020-014-NEW
*A method for selective depletion of PARP1 expressing tumor cells and tumor stem cells*
July 2020
Technology licensed to Canal House Biosciences, LLC

**Invention ID:** 2021-012-NEW
*A method to regulate PARP-inhibitor and PARG-inhibitor response in the treatment of cancer and biomarkers thereof*
April 2021
Technology licensed to Canal House Biosciences, LLC

**Options**

**Option agreement with Paradigm Oncology, LLC**
**March 2012**
Pertaining to Invention Disclosure #02134 "*N-methylpurine DNA glycosylase (MPG) as a biomarker for alkylator chemotherapy potentiation by inhibitors of poly(ADP-ribosyl)ation*" and Patent submission "N-METHYLPURINE DNA GLYCOSYLASE AND POLYMERASE BETA AS BIOMARKERS FOR ALKYLATOR CHEMOTHERAPY POTENTIATION".

**Start-Up Company Involvement**

**February 2012 – December 2014**
Founder, Paradigm Oncology, LLC

**December 2013 – December 2016**
Founder, Caladrius.org
A non-profit company focused on cancer research fund raising.

**January 2017 – Present**
Founder and Chair of the Scientific Advisory board, Canal House Biosciences, LLC
A biotechnology company bridging bench to bedside solutions in cancer.

**May 2017 – Present**
Founder and President – The Genome Repair Foundation
A non-profit company dedicated to advancing science, scientific research and science education, with a focus on, but not limited to, the study of mechanisms of DNA damage, DNA repair, DNA metabolism and genome stability as it relates to cancer, environmental exposure and human disease.

**May 2018 – Present**
Partner & Consultant – Kearney Enterprises LLC
A start-up company developing health care related software for improved patient management.
**LIST OF CURRENT RESEARCH INTERESTS:**
Mechanisms of DNA Repair

Mechanisms of DNA damage response
DNA Repair processes and response to chemotherapy
DNA Repair proteins governing telomere stability
Regulation of chemotherapy response by epigenetic regulation
Synthetic lethality in cancer
NAD metabolism and NAD biosynthesis

**SERVICE:**

1. Brown University (2022-**Present**)

**Brown University Committees**

| | |
|---|---|
| 2022-**Present** | Brown University Innovation Summit Planning Committee |
| 2022-**Present** | Brown University, Department of Pathology & Laboratory Medicine (PLM) Communications Committee |
| 2022-**Present** | Brown University, NIAID Training grant (T32) advisory committee |

**Brown University - Legorreta Cancer Center (LCC) Committees**

| | |
|---|---|
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Website and newsletter committee |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Brain Cancer Working Group |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Cancer Research Training and Education Coordination Working Group |
| 2022-**Present** | Member, Legorreta Cancer Center (LCC) Cancer Tissue Bank Working Group |
| 2022-**Present** | Co-Chair, Legorreta Cancer Center (LCC) Tech Commercialization Working Group |
| 2023-**Present** | Member, Legorreta Cancer Center (LCC) RNA modifications in cancer working group |
| 2023-**Present** | Co-Chair, Legorreta Cancer Center (LCC) Environmental Carcinogenesis Working Group |
| 2023-**Present** | Chair, Legorreta Cancer Center (LCC) DNA Repair and DDR Working Group |

| | |
|---|---|
| 2023 | Brown University Pathology Pilot Project grant review panel |

2. University of South Alabama/MCI (2014-2022)

| | |
|---|---|
| MCI FCAPE Committee | 2014 – Present |
| MCI Space and Architecture Committee | 2015 – 2017 |
| Search Committee for MCI Chief of Medical Oncology | 2015 – 2017 |
| Search Committee for USA Chair, Department of Biochemistry | Jan 2017 – Present |
| USA Center for Healthy Community Engagement Committee | July 2019 |
| House and Senate Democratic Caucuses Leadership Retreat, Healthcare/Building Healthy Alabamians discussion leader | September 27, 2019 |

3. University of Pittsburgh (2002-2014)

| | |
|---|---|
| Director, UPCI Seminar Series | 2006 – 2007 |
| Co-Director, UPCI Vector Core Facility | 2009 – 2014 |
| UPCI 2011 Scientific Retreat Poster Session coordinator | 2011 |
| Chair, Agenda sub-committee – 2014 UPCI Retreat | 2014 |

4. NIEHS (1996-2002)

| | |
|---|---|
| Ad hoc advisor to the NIEHS Animal Husbandry Support Contract | 1998 |
| Reviewer, NIEHS Intramural Research Award (FY2000) | 1999 |
| Reviewer, NIEHS Intramural Research Award (FY2001) | 2000 |
| NIEHS Coordinator, Monthly DNA Repair Videoconference | 1998 – 2002 |
| Ad hoc Reviewer, ETP Management Committee | 2000 – 2002 |
| NIEHS Lecture and Conference Committee | 2000 – 2002 |
| NIEHS Project Officer, contract # NO1-DE-12634; Generation of Mouse Transgenics – University of Rochester | 2001 – 2002 |

NIEHS Transgenic and Knockout Animal Studies Review Committee 2001 – 2002

5. Temple University (1986-1991)
Member Curriculum Committee of the Dept. of Biochemistry 1986 –1989

6. Grant Review panels (2002-Present)
Ad hoc Grant Reviewer, Susan G. Komen Research Found. 2006 – 2007
Ad hoc Grant Reviewer, Lytmos Group 2006 – 2007
Ad hoc Grant Reviewer, Cancer Research UK 2006 – Present
Study Section member, Amer. Cancer Soc. DNA mechanism of Cancer 2008 – 2009
Ad hoc Grant Reviewer, Medical Research Council UK 2009, 2019
Ad hoc Grant Reviewer, National Science Foundation 2009, 2016
Ad hoc Grant Reviewer, Breakthrough Breast Cancer Res. Ctr. 2009
Ad hoc Grant Reviewer Ohio Cancer Research Foundation 2009 – Present
Ad hoc Grant Reviewer Dutch Cancer Society 2010
Study Section Ad hoc Reviewer, NIH MGC Study Section 2010, 2011
Study Section Member, American Cancer Society (ACS);
DNA Mechanism of Cancer 2011 – 2016
Ad hoc Grant Reviewer, Hong Kong Research Grants Council 2011
Ad hoc Grant Reviewer, University of Pittsburgh CTSI 2011
Ad hoc Grant Reviewer, NIEHS K99/R00 Review panel (July 2011) 2011
Study Section Chair, American Cancer Society (ACS);
DNA Mechanism of Cancer 2014 – June 2016
Study Section Ad hoc Reviewer, NIH CHD Study Section 2015
Study Section Ad hoc Reviewer, NIH ZRG1 CB-D (50) Study Section 2015
Ad hoc reviewer, Israel Cancer research Fund (ICRF) 2015 – 2018
NIH Study Section, Standing member, Cancer Etiology (CE) July 2016-June 2020
Ad hoc reviewer, NIEHS (NIH) P42 Superfund Research Program 2016
(August 2016); 2017/01 ZES1 LKB-K (S) 1; Superfund Hazardous Substance Research and Training Program.
Ad hoc reviewer, Belgium Fund for Scientific Research – FNRS 2016 – present
Ad hoc reviewer, University of South Alabama COM and ORED 2016 – present
Ad hoc reviewer, Netherlands Organization for Scientific Research, NOW 2016 – 2017
Ad hoc reviewer, 2016/10 ZES1 LWJ-D (TS) 1; 2016
Review of Time Sensitive R21s (Teleconference)
Ad hoc reviewer, 2018/01 ZES1 LAT-S (K8) 1; 2017
Special Emphasis Panel/Scientific Review Group, K Award applications
NIH Study Section, Chair, Cancer Etiology (CE) July 2018-June 2020
Ad hoc reviewer, 2019/10 ZES1 JAB-D (SF) 1 (NIEHS P42) June/July 2019
Ad hoc reviewer, Fondation pour la Recherche Médicale May 2020
Ad hoc reviewer, 2020 DoD Lung Cancer Research Program Sept 2020
Ad hoc reviewer, USA COM Intramural Grant Program Oct 2020
Ad hoc reviewer, Dutch Research Council Jan 2021
Ad hoc reviewer, Israel Science Foundation Feb 2021
Ad hoc reviewer, NIH SEP/SRG 2021/05 ZRG1 CB-L (02) M March 2021
Ad hoc reviewer, NIH Oncology Study Section March 2022
Ad hoc reviewer, NIH Oncology Study Section March 2023
Brown University Pathology Pilot Project grant review panel Feb 2023