

CURRICULUM VITAE

Samuel H. Wilson

Place of Birth: USA

Married - 2 children (grown)

Education:

1961	A.B. in Chemistry	University of Denver
1968	M.D.	Harvard University

Professional Employment:

1996 - Present	Chief, DNA Repair and Nucleic Acid Enzymology Section, Laboratory of Structural Biology, NIEHS, NIH
2007 - 2009	Acting Director, National Institute of Environmental Health Sciences (NIEHS), NIH, & National Toxicology Program
1996 - 2007	Deputy Director, NIEHS, NIH, & National Toxicology Program
1991 - 1996	Founding Director, Sealy Center for Molecular Science, The University of Texas Medical Branch (UTMB) and Director, Centennial Center for Environmental Toxicology, UTMB
1986 - 1992	Chief, Nucleic Acid Enzymology Section, Laboratory of Biochemistry, National Cancer Institute (NCI), NIH
1970 - 1992	Senior Investigator, Laboratory of Biochemistry, NCI, NIH
1968 - 1992	US Public Health Service Commissioned Corps, Retired (January 1992) Medical Director (06)
1968 - 1970	Postdoctoral Fellow (Research Associate) Laboratory of Biochemical Genetics (Advisor - Marshall Nirenberg), National Heart Institute, NIH
1967 - 1968	Postdoctoral Fellow, Department of Biochemistry (Advisor - Mahlon B. Hoagland), Dartmouth Medical School
1964 - 1966	Student Research Associate, Department of Bacteriology and Immunology (Advisor - Mahlon B. Hoagland), Harvard Medical School
1961 - 1962	Graduate Fellow, Department of Chemistry (Advisors - J.J. Schmidt-Collerus and J.A. Krimmel), Denver Research Institute, Univ. of Denver

Awards & Honorary Lectures: (since 2005)

2010	Special Lecturer, "The 2010 FDC Symposium," Fukuoka, Japan
2010	Plenary Speaker, L.S. Skaggs Biomedical Research Symposium, San Diego
2010	2010 EMS Award and Lecture, Environmental Mutagen Society, Ft. Worth
2010	Keynote Speaker, Intl Conf on Biomed & Env Science & Technology, Beijing
2009	Elected Fellow of the AAAS
2009	Nakahara Memorial Lecture, 40th Princess Takamatsu Symp, Tokyo
2009	Plenary Lecturer, 10th Intl Conference on Environmental Mutagens, Firenze
2008	Robert S. Harris Lecturer, Massachusetts Institute of Technology
2008	Abelson Lecturer, Washington State University
2007	Keynote Speaker, North Carolina Regional Conference on Genome Stability
2005	Plenary Lecturer, 9 th Intl Conference on Environmental Mutagens
2005	Keynote Speaker, Genetic Toxicology Gordon Research Conference

Graduate Student Advisor/Thesis Research Supervisor:

Degree in 1978 W. Zellmer, Dept of Zoology, Auburn University
Degree in 1978 E.W. Bohn, Dept of Chemistry, American University
Degree in 1985 J. Swack, Dept of Biochemistry, George Washington University
Degree in 1997 T. Molina, Dept of Human Biological Chemistry and Genetics, UTMB
Degree in 2007 N. Palma, Dept of Cellular Biology, University of Seville, Spain

Member Ph.D. Thesis Defense or Advisory Committee (since 1980):

2002, T. Fisher, Dept of Microbiology and Immunology, Albert Einstein College of Medicine;
2001, L. Chen, Dept of Molecular Medicine, Institute of Biotechnology, University of Texas Health Science Center (San Antonio); 2000, B.-Q. Li, Dept of Biochemistry and Molecular Biology, University of Miami; 1997, A.G. McNees, Dept of Human Biological Chemistry and Genetics (HBC&G), UTMB; 1997, X.-Q. Zhou, Dept of Cellular and Structural Biology, University of Texas Health Science Center (San Antonio); 1996, Q. Xie, Dept of HBC&G, UTMB; 1996, B. Ponnaiya, Dept of HBC&G, UTMB; 1996, T.K. Varma, Dept of HBC&G, UTMB; 1995, S. F. Anderson, Dept of Molecular Biophysics and Biochemistry, Yale University; 1995, N. Deane, Dept of Microbiology, UTMB; 1992, R. Anderson, Dept of Biochemistry, Baylor College of Medicine; 1991, M. Delahunty, Dept of Chemistry, University of Maryland Baltimore County; 1987, H. Al-Khatib, Dept of Biochemistry, Georgetown University; 1986, B. Merrill, Dept of Molecular Biophysics and Biochemistry, Yale University; 1985, A. Lambrianidou, Dept of Biochemistry, Georgetown University; 1984, W. Albert, Institute of Biochemistry, University of Wurzburg; 1980, M. Vinocour, Dept of Biochemistry, University of Arizona.

Postdoctoral Fellows and Research Associates:

2010-present, B. Freudenthal; 2010-present, N. Gassman; 2009-present, N. Cavanaugh; 2007-present, M. Heacock; 2005-present, A. Masaoka; 2003-2010, Y. Liu; 2003-2010, K. Asagoshi; 2002-2006, E. Braithwaite; 2005, E. Speina; 2002-2003, C. Cistulli; 1998-2003, M. Ghosh; 1993-2002, R. Sobol; 1992-1999, 2001-2002, D. Srivastava; 1997-2001, B. Vande Berg; 1999-2000, D. Kolpachtchikov; 1999-2000, G. Belova; 1997-2000, A. Robertson; 1998-1999, J. Krahn; 1992-1999, X.-P. Yang; 1994-1996, J. Chyan; 1992-1996, R. Singhal; 1991-1996, F. He; 1991-1996, K.-H. Chen; 1991-1996, S. Narayan; 1990-1995, M. Jaju; 1991-1994, R. Prasad; 1992-1993, R. Kim; 1991-1993, H. Idriss; 1991-1993, R. Goel; 1989-1992, W. Beard; 1989-1991, J. Casas-Finet; 1989-1991, S.-J. Kim; 1989-1991, A. Kumar; 1989-1991, E. Englander; 1987-1991, J. Abbotts; 1986-1991, S. Widen; 1988-1990, C. Majumdar; 1987-1990, P. Kedar; 1985-1987, P. Kumar; 1984-1987, D. Sen Gupta; 1984-1987, F. Cobianchi; 1982-1984, A. Hazra; 1981-1984, E. Karawya; 1980-1984, P. Becerra; 1979-1984, S. Detera; 1979-1984, K. Tanabe; 1980-1983, S. Planck; 1977-1980, Y.-C. Chen; 1978-1979, T. Marshall; 1975-1976, M. Sivarajan; 1972-1975, A. Matsukage.

Sabbatical/Senior Laboratory Associates:

2001-present, V. Batra; 1999-present, P. Kedar; 1996-present, J. Horton; 1991-present, R. Prasad; 1992-present, W. Beard; 2006-2010, M. Carrozza; 2002-2009, V. Poltoratsky; 2006-2007, Z. Zhang; 1994-1995, 1999-2000, and 2001-2002, O. Lavrik; 1995-1996, and 2002, P.

Strauss; 2000-2002, S.-J. Kim; 2001, H. Idriss; 1999, and 2000, S. DeLauder; 1997, A. Slesarev; 1990, F. Cobianchi; 1985, K. Tanabe; 1984-1990, B.Z. Zmudzka.; 1984 and 1988, A. Matsukage.

Sabbatical Administrative Associates:

2001-2002, M. Yudell (graduate student); 2000-2001, C. Miller; 1997, G. LeMasters

National Peer-Review Activities: (excluding journal reviews, since 2005)

2008 - present Editorial Board, *Nucleic Acids Research*
2006 - 2010 Editorial Board, *Mechanisms of Ageing and Development*
2001 - present Associate Editor, *DNA Repair*
1999 - 2006 Editorial Board, *Annual Review of Medicine*

National Committees and Other Activities Outside NIH: (since 2001)

2010 Scientific Advisory Committee-Burroughs Wellcome Fund Training Program, The University of Texas Health Science Center at Houston
2010 Scientific Advisory Board-Program at Stony Brook University
2010 Co-Chair, 4th Biannual Japan-US/US-Japan DNA Repair Meeting
2010 Advisory Board, The Netherlands Toxicogenomics Center
2009 Chair, Genetic Toxicology Gordon Research Conference, New London, NH
2008 - 2009 Co-Chair, 3rd Biannual US-EU/EU-US DNA Repair Meeting, Galveston, TX
2007 Co-Chair, 3rd Biannual Japan-US/US-Japan DNA Repair Meeting, Sendai
2005 Co-Chair, 2nd Biannual EU-US DNA Repair Meeting, Erice, Sicily
2004 - present Scientific Advisory Board, Flight Attendant Medical Research Institute (FAMRI) Center, Weizmann Institute of Science, Rehovot, Israel
2004 Co-Chair, 2nd Biannual Japan-US/US-Japan DNA Repair Meeting, Honolulu
2003 - 2007 Director (2003), Scientific Advisory Board (2004-2007), Radiation Effects Research Foundation (Cooperative Japan-United States Research Organization), Hiroshima, Japan
2003 - 2005 Program Committee, 9th Intl Conference on Environmental Mutagens
2003 Co-Chair, Biannual US-EU/EU-US DNA Repair Meeting, Leesburg, VA
2003 Symp Co-Chair, Annual Meeting Environmental Mutagen Society, Miami
2003 Co-Organizer, Symp on Gene-Environment Interaction, NIH, Bethesda
2002 Scientific Advisory Board – Program on Structural and Cell Biology of DNA Repair, Lawrence Berkeley National Laboratory, Berkeley
2002 Scientific Advisory Committee (*ad hoc*), CIIT, RTP, NC
2002 Co-Chair, Marshall Nirenberg Symposium, Natcher Center, NIH, Bethesda
2002 Co-Chair, 1st Biannual Japan-US/US-Japan DNA Repair Meeting, Sendai
2000 - 2001 Council Member, American Society for Biochemistry and Molecular Biology
1998 - 2009 Founding Member, NAS/IOM Roundtable on EHSRT, Washington, DC
1997 - 2001 Vice-Chair and Chair, respectively, Mammalian DNA Repair Gordon Research Conference, Ventura, CA

Invited Laboratory Research Presentations (since 2005):

International Workshop on BER, Brain Function and Aging, Hyderabad, India, November 2010
University of Kentucky, Lexington, KY, November 2010
University of California-San Diego, San Diego, CA, April 2010
University of Cincinnati, Cincinnati, OH, April 2010
Gordon Research Conference, Ventura, CA, March 2010
2nd Erling Seeberg Symposium on DNA Repair, Ålesund-Geiranger, Norway, June 2009
American Society of Microbiology Conference on DNA Repair and Mutagenesis, Whistler, Canada, June 2009
3rd Biannual US-EU DNA Repair Meeting, Galveston, TX, February 2009
MD Anderson Cancer Center, DNA Repair Symposium, 2008
Gordon Research Conference, Oxford, UK, July 2008
2nd Intl Genome Dynamics in Neuroscience Conference, Pacific Grove, CA, June 2008
Washington State University, Pullman, WA, April 2008
R.D. Wells Symposium, Houston, TX, April 2008
NIH Videoconference on the History of DNA Repair, Transforming Technologies Along the Way: A Story About Pol β and BER, Research Triangle Park, NC, June 2007
Gordon Research Conference, Oxford, UK, August 2007
3rd Japan-US DNA Repair Meeting, Sendai, Japan, May 2007
Rutgers University, Piscataway, NJ, March 2007
Gordon Research Conference, Ventura, CA, February 2007
Conference on Xeroderma Pigmentosum and Other Diseases of Human Premature Aging and DNA Repair: Molecules to Patients, National Conferences Center, Landsdowne, VA, September 2006
XIII Intl Congress of the Free Radical Society International Meeting, Davos, Switzerland, August 2006
Erling Seeberg Symposium on DNA Repair, Bodø and Henningsvær, Lofoten, Norway, May 2006
American Society Biochemistry and Molecular Biology Annual Meeting, San Francisco, CA, April 2006
Mayo Clinic, Rochester, MN, February 2006
2nd Biannual EU-US DNA Repair Meeting, Erice, Sicily, November 2005
NIEHS Center for Rodent Genetics Conference, Research Triangle Park, NC, October 2005
Ohio State University, Columbus, OH, October 2005
Gordon Research Conference, Newport, RI, June 2005
FAMRI Symposium, Weizmann Institute, Rehovot, Israel, March 2005
Keystone Symposium, Taos, NM, March 2005

Books: Editor or Co-Editor (Reference Volumes):

The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies, Vol. 1-2. Strauss, P.R., Wilson, S.H. (eds), The Telford Press/CRC Press, 1990.
Cancer Biology and Biosynthesis. Wilson, S.H. (ed), CRC Press, 1991.
Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology. Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds), Academic Press, 2001.
Biomarkers of Environmentally Associated Disease: Technologies, Concepts, and Perspectives. Wilson, S.H., and Suk, W. (eds), CRC Press, 2002.

Patent:

Wilson, S.H. and Kronick, M.N. "An assay technique for reactions that produce radioactive gases."

Bibliography (Invited and peer-reviewed research articles):

363. **Prasad R.**, Beard W.A., Batra V.K., Liu Y., Shock D.D., Wilson S.H. A review of recent experiments on step-to-step “hand-off” of the DNA intermediates in mammalian base excision repair pathways. **Molecular Biology** 45:X-X, 2011.
362. **Horton, J.K.**, Stefanick, D.F., Zeng, J.Y., Carrozza, M.J. and Wilson, S.H. Requirement for NBS1 for cell cycle checkpoint after DNA methylation combined with PARP inhibition. **DNA Repair** 10:225–234, 2011.
361. **Khodyreva, S.N.**, Prasad, R., Liu, Y., Hou, E.W., Wilson, S.H. and Lavrik, I.O. Apurinic/apyrimidinic (AP) site recognition by the 5'-dRP/AP lyase in poly(ADP-ribose) polymerase-1 (PARP-1). **Proceedings of the National Academy of Sciences, USA** 107:22090-22095, 2010.
360. **Surya Prakash, G.K.**, Zibinsky, M., Upton, T.G., Kashemirov, B.A., McKenna, C.E., Oertell, K., Goodman, M.F., Batra, V.K., Pedersen, L.C., Beard, W.A., Shock, D.D., Wilson, S.H., and Olah, G.A. Synthesis and biological evaluation of fluorinated deoxynucleotide analogs based on bis-(difluoromethylene)triphosphoric acid. **Proceedings of the National Academy of Sciences, USA** 107:15693-15698, 2010.
359. **Poltoratsky, V.**, Heacock, M., Prasad, R., and Wilson, S.H. Mutagenesis dependent upon activation-induced deaminase expression and a double-strand break. **Molecular Immunology** 48:164-170, 2010.
358. **Asagoshi, K.**, and Wilson, S.H. Base Excision Repair. In: Current Cancer Research, El-Diery, W.S. and Penning, T.M. eds. Springer, New York. In press. 2010.
357. **Prasad, R.**, Shock, D., Beard, W.A., and Wilson, S.H. Substrate channeling in mammalian base excision repair pathways: Passing the baton. **Journal of Biological Chemistry** 285: 40479-40488, 2010.
356. **Beard, W.A.**, Batra, V.K., and Wilson, S.H. DNA polymerase structure-based insight on the mutagenic properties of 8-oxoguanine. **Mutation Research-Special Issue: Genetic Toxicology and Environmental Mutagenesis** 703:18-23, 2010.
355. **Wilson, S.H.**, Beard, W.A., Shock, D.D., Batra, V.K., Cavanaugh, N.A., Prasad, R., Hou, E.W., Liu, Y., Asagoshi, K., Horton, J.K., Stefanick, D.F., Kedar P.S., Carrozza, M.J., Masaoka, A. and Heacock M.L. Base excision repair and design of small molecule inhibitors of human DNA polymerase β . **Cellular and Molecular Life Sciences Special Issue, DNA Repair Mechanisms and the Potential of Targeting These Systems in Anti-Cancer Treatment Paradigms** 67:3633–3647, 2010.
354. **Braithwaite, E.K.**, Kedar, P.S., Stumpo, D.J., Bertocci, B., Freedman, J.H., Samson, L.D., and Wilson, S.H. DNA polymerases β and λ mediate overlapping and independent roles in base excision repair in mouse embryonic fibroblasts. **PLoS One** doi:10.1371/journal.pone.0012229, 2010.
353. **Cavanaugh, N.A.**, Beard, W.A. and Wilson, S.H. DNA polymerase β ribonucleotide discrimination: Insertion, misinsertion, extension, and coding. **Journal of Biological Chemistry** 285(32):24457-24465.
352. **Heacock, M.**, Carrozza, M.J., Stefanick, D.F., Horton, J.K. and Wilson, S.H. Alkylation damage combined with PARP inhibition in cells results in S-phase dependent double-strand breaks. **DNA Repair** 9:929-936, 2010.

351. **Batra, V.K.**, Beard, W.A., Hou, E.W., Pedersen, L.C., Prasad, R., and Wilson, S.H. Mutagenic conformation of 8-oxo-7,8-dihydro-2'-dGTP in the confines of a DNA polymerase active site. **Nature Structural and Molecular Biology** 17:889-890, 2010.
350. **Batra, V.K.**, Pedersen, L.C., Beard, W.A., Wilson, S.H., Kashemirov, B.A., Upton, T.G., Goodman, M.F., and McKenna, C.E. Halogenated β - γ methylene- and ethylidene-dGTP-DNA ternary complex with DNA polymerase β : Structural evidence for stereospecific binding of the fluoromethylene analogues. **Journal of the American Chemical Society** 132:7617-7625, 2010.
349. **Wilson, S.H.** Structure-based insight on mutagenesis and the 8-oxo lesion. **Proceedings, 40th International Symposium of the Princess Takamatsu Cancer Research Fund, Tokyo**, 2010.
348. **Liu, Y.**, Prasad, R., and Wilson, S.H. HMGB1: Roles in base excision repair and related function. **Biochimica et Biophysica Acta - Special Issue: Gene Regulatory Mechanisms** 1799:119-130, 2010.
347. **Asagoshi, K.**, Liu, Y., Masaoka, A., Lan, L., Prasad, R., Horton, J.K., Brown, A.R., Sobol, R.W., Bdour, H.M., Taylor, J.-S., Yasui, A., and Wilson, S.H. DNA polymerase β -dependent long patch base excision repair in living cells. **DNA Repair** 9:109-119, 2010.
346. **Asagoshi, K.**, Chastain, II, P.D., Tano, K., Adachi, N., Sonoda, E., Kikuchi, K., Koyama, H., Nagata, K., Kaufman, D.G., Takeda, S., Wilson, S.H., Watanabe, M., Swenberg, J.A., and Nakamura, J. FEN1 functions in long patch base excision repair under conditions of oxidative stress in vertebrate cells. **Molecular Cancer Research** 8:204-215, 2010.
345. **Beard, W.A.**, Shock, D.D., Batra, V.K., Pedersen, L.C., and Wilson, S.H. DNA polymerase β substrate specificity: Side chain modulation of the 'A-rule'. **Journal of Biological Chemistry** 284: 31680-31689, 2009.
344. **Masaoka, A.**, Horton, J.K., Beard, W.A., and Wilson, S.H. DNA polymerase β and PARP activities in base excision repair in living cells. **DNA Repair (Amst)** 8:1290-1299, 2009.
343. **Liu, Y.**, Prasad, R., Beard, W.A., Hou, E.W., Horton, J.K., McMurray, C.T., and Wilson, S.H. Coordination between Pol β and FEN1 can modulate the CAG repeat expansion. **Journal of Biological Chemistry** 284:28352-28366, 2009.
342. **Carrozza, M.J.**, Stefanick, D.F., Horton, J.K., Kedar, P.S., and Wilson, S.H. PARP inhibition during alkylation-induced genotoxic stress signals a cell cycle checkpoint response mediated by ATM. **DNA Repair** 8:1264-1272, 2009.
341. **Yoshizawa, K.**, Jelezcova, E., Brown, A.R., Foley, J. F., Nyska, A., Cui, X., Hofseth, L.F., Maronpot, R. M., Wilson, S.H., Sepulveda, A.R., and Sobol, R.W. Gastrointestinal hyperplasia with altered expression of DNA polymerase β . **PLoS ONE** 4: e6493, 2009.
340. **Dorjsuren, D.**, Wilson III, D.M., Beard, W.A., McDonald, J.P., Austin, C.P., Woodgate, R., Wilson, S.H., Simeonov, A. A real-time fluorescence method for enzymatic characterization of specialized human DNA polymerases. **Nucleic Acids Research** 37(19): e128, 2009.
339. **Simonelli, V.**, D'Errico, M., Palli, D., Prasad, R., Wilson, S.H., and Dogliotti, E. Characterization of DNA polymerase beta splicing variants in gastric cancer: the most frequent exon 2-deleted isoform is a non-coding RNA. **Mutation Research** 670(1-2):79-87, 2009.
338. **Upton, T.G.**, Kashemirov, B.A., McKenna, C.E., Goodman, M.F., Prakash, G.K., Kultyshev, R., Batra, V.K., Shock, D.D., Pedersen, L.C., Beard, W.A., and Wilson, S.H. a,b-difluoromethylene deoxynucleoside 5'-triphosphates: a convenient synthesis of useful probes for DNA polymerase β structure and function. **Organic Letters** 11:1883-1886, 2009.
337. **Prasad, R.**, Longley, M.J., Sharief, F.S., Hou, E.W., Copeland, W.C., and Wilson, S.H. Human DNA polymerase θ possesses 5'-dRP lyase activity and functions in single-nucleotide

base excision repair *in vitro*. **Nucleic Acids Research** 37:1868-1877, 2009.

336. **Liang, F.**, Jain, N., Hutchens, T., Shock, D.D., Beard, W.A., Wilson, S.H., Chiarelli, M.P., and Cho, B.P. α,β -methylene-2'-deoxynucleoside 5'-triphosphates as noncleavable substrates for DNA polymerases: isolation, characterization, and stability studies of novel 2'-deoxycyclonucleosides, 3,5'-cyclo-dG, and 2,5'-cyclo-dT. **Journal of Medicinal Chemistry** 51:6460-6470, 2008.

335. **Kedar, P.S.**, Stefanick, D.F., Horton, J.K., and Wilson, S.H. Interaction between PARP-1 and ATR in mouse fibroblasts is blocked by PARP inhibition. **DNA Repair** 7:1787-1798, 2008.

334. **Allen, D.**, Herbert, D.C., McMahan, A., Rotrekl, V., Sobol, R.W., Wilson, S.H., and Walter, C.A. Mutagenesis is elevated in male germ cells obtained from DNA polymerase-beta heterozygous mice. **Biology of Reproduction** 79:824-831, 2008.

333. **Kronenberg, G.**, Harms, C., Sobol, R.W., Cardozo-Pelaez, F., Linhard, H., Winter, B., Balkaya, M., Gertz, K., Gay, S.B., Cox, D., Eckart, S., Ahmadi, M., Juckel, G., Kempermann, G., Hellweg, R., Sohr, R., Hörtnagl, H., Wilson, S.H., Jaenisch, R., and Endres, M. Folate deficiency induces neurodegeneration and brain dysfunction in mice lacking uracil DNA glycosylase. **Journal of Neuroscience** 28:7219-7230, 2008.

332. **Oka, H.**, Sakai, W., Sonoda, E., Nakamura, J., Asagoshi, K., Wilson, S.H., Kobayashi, M., Yamamoto, K., Heierhorst, J., Takeda, S., and Taniguchi, Y. DNA damage response protein ASCIZ links base excision repair with immunoglobulin gene conversion. **Biochemical and Biophysical Research Communications** 371:225-229, 2008.

331. **Poltoratsky, V.**, Horton, J.K., Prasad, R., Beard, W.A., Woodgate, R., and Wilson S.H. Negligible impact of pol i expression on the alkylation sensitivity of pol β -deficient mouse fibroblast cells. **DNA Repair** 7:830-833, 2008.

330. **Lin, P.**, Batra, V.K., Pedersen, L.C., Beard, W.A., Wilson, S.H., and Pedersen, L.G. Incorrect nucleotide insertion at the active site of a G:A mismatch catalyzed by DNA polymerase β . **Proceedings of the National Academy of Sciences, USA** 105:5670-5674, 2008.

329. **Batra, V.K.**, Beard, W.A., Shock, D.D., Pedersen, L.C., and Wilson, S.H. Structures of DNA polymerase β with active-site mismatches suggest a transient abasic site intermediate during misincorporation. **Molecular Cell** 30:315-324, 2008

328. **Sucato, C.A.**, Upton, T.G., Kashemirov, B.A., Osuna, J., Oertell, K., Beard, W.A., Wilson, S.H., Florián, J., Warshel, A., McKenna, C.E., Goodman, M.F. DNA Polymerase β fidelity: Halomethylene-modified leaving groups in pre-steady-state kinetic analysis reveal differences at the chemical transition state. **Biochemistry** 47:870-879, 2008.

327. **Horton, J.K.**, Watson, M., Stefanick, D.F., Shaughnessy, D.T., Taylor, J.A., and Wilson, S.H. XRCC1 and DNA polymerase β in cellular protection against cytotoxic DNA single-strand breaks. **Cell Research** 18:48-63, 2008.

326. **Xiang, Y.**, Goodman, M., Beard, W.A., Wilson, S.H., and Warshel, A. Exploring the role of large conformational changes in the fidelity of DNA Polymerase β . **Proteins** 70:231-247, 2008.

325. **Friedberg, E.C.**, Hanaoka, F., Tanaka, K., Wilson, S.H. and Yasui, A. Meeting Report: The 3rd US-Japan DNA Repair Meeting, Sendai, Japan, May 7-11, 2007, **DNA Repair** 6:1545-1555, 2007.

324. **McKenna, C.E.**, Kashemirov, B.A., Upton, T.G., Batra, V.K., Goodman, M.F., Pedersen, L.C., Beard, W.A., and Wilson, S.H. (R)-b,g-fluoromethylene-dGTP-DNA ternary complex with DNA polymerase β . **Journal of the American Chemical Society** 129:15412-

15413, 2007.

323. **Das, S.**, Chattopadhyay, R., Bhakat, K.K., Boldogh, I., Kohno, K., Prasad, R., Wilson, S.H., and Hazra, T.K. Stimulation of NEIL2-mediated oxidized base excision repair via YB-1 interaction during oxidative stress. **Journal of Biological Chemistry** 282:28474-28484, 2007.
322. **Hou, E.W.**, Prasad, R., Asagoshi, K., Masaoka, A., and Wilson, S.H. Comparative assessment of plasmid and oligonucleotide DNA substrates in measurement of *in vitro* base excision repair activity. **Nucleic Acids Research** 35:e112, 2007.
321. **Moon, A.F.**, Garcia-Diaz, M., Batra, V.K., Beard, W.A., Bebenek, K., Kunkel, T.A., Wilson, S.H., and Pedersen, L.C. The X family portrait: Structural insights into biological functions of X family polymerases. **DNA Repair** 6:1709-1725, 2007.
320. **Prasad, R.**, Liu, Y., Deterding, L.J., Poltoratsky, V., Kedar, P.S., Horton, J.K., Kanno, S.-I., Asagoshi, K., Hou, E.W., Khodyreva, S.N., Lavrik, O.I., Tomer, K.B., and Wilson, S.H. HMGB1 is a co-factor in mammalian base excision repair. **Molecular Cell** 27:829-841, 2007.
319. **Palma, N.**, Cinelli, S., Saporita, O., Wilson, S.H., and Dogliotti, E. Ochratoxin A-induced mutagenesis in mammalian cells is consistent with production of oxidative stress. **Chemical Research in Toxicology** 20:1031-1037, 2007.
318. **Nakanishi, S.**, Prasad, R., Wilson, S.H., and Smerdon, M. Different structural states in oligonucleosomes are required for early versus late steps of base excision repair. **Nucleic Acids Research** 35:4313-4321, 2007.
317. **Kovtun, I.V.**, Liu, Y., Bjoras, M., Klungland, A., Wilson, S.H., and McMurray, C. OGG1 initiates age-dependent CAG trinucleotide expansion in somatic cells. **Nature** 447:447-452, 2007.
316. **Liu, Y.**, Prasad, R., Beard, W.A., Kedar, P.S., Hou, E.W., Shock, D.D., Wilson, S.H. Coordination of steps in single-nucleotide base excision repair mediated by apurinic/apyrimidinic endonuclease 1 and DNA polymerase β . **Journal of Biological Chemistry** 282:13532-13545, 2007.
315. **Tano, K.**, Nakamura, J., Asagoshi, K., Arakawa, H., Sonoda, E., Braithwaite, E.K., Prasad, R., Buerstedde, J.M., Takeda, S., Watanabe, M., and Wilson, S.H. Interplay between DNA polymerases β and δ in repair of oxidation DNA damage in chicken DT40 cells. **DNA Repair** 6:869-75, 2007.
314. **Wilson, S.H.** Book review: DNA damage recognition. **DNA Repair** 6:396, 2007.
313. **Wang, Y.**, Reddy, S., Beard, W.A., Wilson, S.H., and Schlick, T. Differing conformational pathways before and after chemistry for insertion of dATP vs. dCTP opposite 8-oxoG in DNA polymerase β . **Biophysical Journal** 92:3063-3070, 2007.
312. **Horton, J.K.**, Stefanick, D.F., Kedar, P.S., and Wilson, S.H. ATR signaling mediates an S-phase checkpoint after inhibition of poly(ADP-ribose) polymerase activity. **DNA Repair** 6:742-750, 2007.
311. **Horton, J.K.** and Wilson, S.H. Hypersensitivity phenotypes associated with genetic and synthetic inhibitor-induced base excision repair deficiency. **DNA Repair** 6:530-543, 2007.
310. **Oelschlaeger, P.**, Klahn, M., Beard, W.A., Wilson, S.H., and Warshel, A. Magnesium-cationic dummy atom molecules enhance representation of DNA polymerase β in molecular dynamics simulations: Improved accuracy in studies of structural features and mutational effects. **Journal of Molecular Biology** 366:687-701, 2007.
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Wilson, S.H. Remarks. Retirement Ceremony for Dr. Marian Johnson-Thompson. Research Triangle Park, NC, September 22, 2008.

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Wilson, S.H. Overview of NIEHS research. University of California, Riverside. Riverside, CA, June, 18, 2008.

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Wilson, S.H. Overview and welcome. IACC Autism Town Hall Meeting on Strategic Plan. Davis, CA, May 3, 2008.

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Wilson, S.H. Presentation. Congressional Briefing on Children's Environmental Health Research Results. Washington, DC, April 18, 2008.

Wilson, S.H. Opening remarks. NIEHS Climate Change and Energy Workshop. Bethesda, MD, April 16, 2008.

Wilson, S.H. Overview of NIEHS. Association of Minority Health Professions Schools Leadership Meeting. New Orleans, LA, March 20, 2008.

Wilson, S.H. Presentation at the *Meet the Director* Session. Society of Toxicology Annual Meeting. Seattle, WA, March 19, 2008.

Wilson, S.H. Presentation. Senate/House Staff Briefing, House Subcommittee on Interior, Environment, and Related Agencies, on the NIEHS Superfund Program. Washington, DC, March 13, 2008.

Wilson, S.H. Opening remarks. ICCVAM 10-Year Anniversary Symposium. Bethesda, MD, February 5, 2008.

Wilson, S.H. Overview of GEI. GEI Grantees Workshop. Bethesda, MD, January 24, 2008.

Wilson, S.H. Opening presentation. NanoHealth Enterprise Coordination Meeting. Bethesda, MD, January 16, 2008.

Wilson, S.H. Welcome and opening remarks. ONES Grantees Workshop. Research Triangle Park, NC, January 7, 2008.

Wilson, S.H. Healthy people, healthy economy: Integrating human health and emerging alternative fuels. NAS/IOM EHSRT Workshop, Environmental Health, Energy, and Transportation: Bringing Health to the Fuel Mixture. Washington, DC, November 29-30, 2007.

Wilson, S.H. Testimony. House Domestic Policy Subcommittee on "Will NIEHS' New Priorities Protect Public Health?" Washington, DC, September 25, 2007.

Wilson, S.H. Implementation of the National Toxicology Program (NTP) Roadmap. NTP Board of Scientific Counselors Meeting. Research Triangle Park, NC, June 22, 2007.

Wilson, S.H. Welcome and opening remarks. NTP: Mold Studies Information Workshop. Research Triangle Park, NC, March 5, 2007.

Wilson, S.H. Welcome and opening remarks. International Council on Nanotechnology Workshop, NIH. Bethesda, MD, January 9, 2007.

Wilson, S.H. Welcome and opening remarks. Toxicogenomic Research Consortium, National Center for Toxicogenomics/Ray Tennant Symposium, UNC Friday Center. Chapel Hill, NC, December 4, 2006.

Wilson, S.H. Vision for the National Toxicology Program. NTP Retreat. Research Triangle Park, NC, October 20, 2006.

Wilson, S.H. Introduction and Charge. Working Group on Integrated Translational Research in DNA Repair. San Francisco, CA, September 28-29, 2006.

Wilson, S.H. Opening Remarks. 2nd Annual NIEHS Center for Rodent Genetics Conference, Unveiling Genome-wide DNA Variation in 15 Diverse Mouse Strains: Using Mouse Genetics and Genomics to Understand Human Disease. Research Triangle Park, NC, September 26, 2006.

Wilson, S.H. Welcoming comments. National Toxicology Program: Biomarkers for Toxicology Studies Workshop. Research Triangle Park, NC, September 20, 2006.

Wilson, S.H. Current state of the science. IOM Roundtable on Environmental Health Sciences, Research, and Medicine Workshop, From Exposure to Human Disease: Research Strategies to Address Current Challenges. Washington, DC, September 15, 2006.

Wilson, S.H. Risks and benefits of gene-environment interactions research. Session on Environmental Health and Health Disparities. 4th Annual Disparities in Health in America: Working Toward Social Injustice. Houston, TX, June 26, 2006.

Wilson, S.H. Update on the Genes, Environment, and Health Initiative. Session I: Understanding the Role of Genetic, Environmental, and Social Factor in Human Disease and Health Disparities. Workshop on Enhancing Capacity to Study Gene-Environment Interactions in Complex Traits: Implications for Health Disparities. Boston, MA, June 21, 2006.

Wilson, S.H. NIEHS Programs and Perspectives, Annual University-Federal Dialogue on Environmental and Energy Research and Education. Council of Environmental Deans and Directors, National Council for Science and the Environment. Washington, DC, April 24, 2006.

Wilson, S.H. Discussant. Symposium on Exposure Science: A Requirement for Reducing Human Environmental Health Risks. AAAS Annual Meeting. St. Louis, MO, February 18, 2006.

Wilson, S.H. Opening remarks. Superfund Basic Research Annual Meeting, Research Translation and Megasites. New York, NY, January 12, 2006.

Wilson, S.H. Moderator. Session III, Preparing for the Future: Environmental health research needs. IOM/EHSRT Meeting on Environmental Public Health Impacts of Disasters: Hurricane Katrina. Washington, DC, October 20, 2005.

Wilson, S.H. The oceans and human health. Town Hall Meeting at the University of North Carolina - Wilmington, Center for Marine Sciences. Wilmington, NC, October 11, 2005.

Wilson, S.H. Welcome and opening remarks, Introduction of Dr. T.-K. Lee. Symposium on Addiction and Chemical Intolerance: A Shared Etiology? Research Triangle Park, NC, September 19, 2005.

Wilson, S.H. Introductory remarks. Chair, Federal Liaison Group to the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants. Washington, DC, July 7, 2005.

Wilson, S.H. Welcome and opening remarks. The National Toxicology Program: A Quarter Century of Toxicology for Public Health; Good Science for Good Decisions. Washington, DC, May 10, 2005.

Wilson, S.H. NIEHS Environmental Genome Project. Second Meeting of the NRC/NAS Committee on Applications of Toxicogenomic Technologies to Predictive Toxicology. Washington, DC, May 3, 2005.

Wilson, S.H. Toxicogenomic data and databases. 9th Meeting of the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants. New Orleans, LA, March 10, 2005.

Wilson, S.H. Introductory remarks. Chair, Session on Epidemiology and Genetics. 2nd NIH International Congress: Advances in Uterine Leiomyoma Research and Clinical Implications. Bethesda, MD, February 24, 2005.

Wilson, S.H. A renaissance in exposure assessment research. NAS/IOM Meeting of the Committee on Research Priorities for Earth Science and Public Health. Washington, DC, February 3, 2005.

Wilson, S.H. Brief overview of indoor air quality research supported by the NIEHS, NIH. Surgeon General's Workshop on Healthy Indoor Environment. Bethesda, MD, January 13, 2005.

Wilson, S.H. NIEHS objectives for this study and applications and challenges in toxicogenomics. First Meeting of the NRC/NAS Committee on Applications of Toxicogenomic Technologies to Predictive Toxicology. Washington, DC, January 12, 2005.

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Wilson, S.H. A renaissance in exposure assessment research: Exposure technology development for the post-genomic era. Fifteenth Annual Conference of the International Society of Exposure Analysis. Philadelphia, PA, October 18, 2004.

Wilson, S.H. Opening remarks and charge to participants. IOM Roundtable on Environmental Health Sciences, Research, and Medicine Workshop, Global Environmental Health in the 21st Century: From Governmental Regulation to Corporate Social Responsibility. Washington, DC, October 13, 2004.

Wilson, S.H. Session facilitator. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Precautionary principle/environmental health. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Environmental health: A response based on partnership, planning, and environmental stewardship. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Discussant on environmental toxicology development. AGES Working Group Meeting, National Institutes of Health. Bethesda, MD, September 1, 2004.

Wilson, S.H. Subgroup report on environmental toxicology development. The American Genes and Environment Study (AGES) Working Group Meeting, National Institutes of Health. Bethesda, MD, September 1, 2004.

Wilson, S.H. Public health monitoring and training needs. Workshop on Public Health Risks of Disasters: Building Capacity to Respond. Co-sponsored by the IOM Roundtable on Environmental Health Sciences, Research, and Medicine and the National Academies' Disasters Roundtable. Washington, DC, June 22, 2004.

Wilson, S.H. Opening remarks. Conference on Obesity and the Built Environment: Improving Public Health Through Community Design. Washington, DC, May 24, 2004.

Wilson, S.H. Disease-oriented approach. Chair, NIEHS Annual Leadership Retreat, Innovative Approaches to Exposure Assessment: Historical Approaches vs. a Disease-oriented Approach That Takes Advantage of Modern Tools of Biology. Greensboro, NC, May 19, 2004.

Wilson, S.H. Genetics, federal classification, and environmental health. Meeting on Colliding Categories: Haplotypes, Race, and Ethnicity. Minneapolis, MN, April 26, 2004.

Wilson, S.H. NIEHS perspectives. International Conference on Biomarkers for Toxicology and Molecular Epidemiology. Atlanta, GA, March 15-17, 2004.

Wilson, S.H. Overview of the built environment and its impact on health. IOM on Environmental Health Sciences, Research and Medicine, Rebuilding the Unity of Health and the Environment: The Greater Houston Metropolitan Area. Houston, TX, January 23, 2004.

Wilson, S.H. On the status of global genomic approaches toward tissue classification and stress response characterization. International Life Sciences Institute Health and Environmental Sciences Institute Annual Meeting. Washington, DC, January 21, 2004.

Wilson, S.H. Emerging evidence linking environmental pollutants to heart disease. American Heart Association Annual Meeting (a scientific session) 2003. Orlando, FL, November 9, 2003.

Wilson, S.H. Risks and benefits of gene-environmental interactions research. Series at Rice University, Disparities in Health in America: Working Toward Social Justice. Houston, TX, November 4, 2003.

Wilson, S.H. Environmental genome. Twenty-fourth Annual Meeting of the American College of Toxicology's Symposium on The Human Genome and Toxicology. Washington, DC, November 3, 2003.

Wilson, S.H. Health and the built environment. Indiana Governor's Conference on Environmental Investment: Increasing Your Rate of Return. Keynote Speaker. Fort Benjamin Harrison, IN, October 30, 2003.

Wilson, S.H. Research in the context of emerging scientific concepts. NIEHS Superfund Quad-University/EPA Region 9 Conference, Emerging Scientific Issues for Superfund. Berkeley, CA, October 9, 2003.

Wilson, S.H. Future of structural biology. Structural Biology Symposium. Research Triangle Park, NC, September 23, 2003.

Wilson, S.H. The environmental health crisis (including sprawl): A response based on partnership, planning, and environmental stewardship. Workshop on Sprawl: The Impact on Vulnerable Populations, University of Cincinnati. Cincinnati, OH, July 8, 2003.

Wilson, S.H. Exposure analysis: An integral part of disease prevention. American Chemistry Council, LRI Annual Science Meeting. Herndon, VA, June 24, 2003.

Wilson, S.H. Increasing precision in environmental health research. Gordon Research Conference on Toxicogenomics, Keynote Speaker. Lewiston, ME, June 22, 2003.

Wilson, S.H. The Environmental Genome Project. Cincinnati Comparative Mouse Genomics Centers Symposium on Genes, Environment, and Disease. Boston, MA, June 9, 2003.

Wilson, S.H. Opening remarks. Cincinnati Comparative Mouse Genomics Centers Symposium on Genes, Environment, and Disease. Boston, MA, June 9, 2003.

Wilson, S.H. Co-Chair and introduction. Genetic Variation and Gene-Environment Interaction in Human Health and Disease. NIH, Bethesda, MD, April 16, 2003.

Wilson, S.H. Co-Chair and introduction. Advances in Toxicogenomics: NIEHS National Center for Toxicogenomics. A Symposium at the Society of Toxicology Annual Meeting. Salt Lake City, UT, March 11, 2003.

Wilson, S.H. Respiratory disease and air quality. Chair and speaker, Symposium on Children's Environmental Health: Identifying and Preventing Environmental Risks. NIH, Bethesda, MD, February 24, 2003.

Wilson, S.H. Charge to the committee and report from the Federal Liaison Group. A Public Meeting of the NAS/NRC Committee on Emerging Issues. Washington, DC, February 6, 2003.

Wilson, S.H. NIEHS perspective. National Academies Workshop on the Differential Susceptibility of Older People to Environmental Hazards. Washington, DC, December 5-6, 2002.

Wilson, S.H. The role of genomics in environmental health. National Center for Environmental Assessment. Washington, DC, November 19, 2002.

Wilson, S.H. Implications of the broader definition of environmental health. 2002 Annual Meeting of the Assoc. of Academic Health Centers. Health Needs in the 21st Century: The Best Defense is a Strong Offense. Pasadena, CA, October 2-5, 2002.

Wilson, S.H. The impact of genomics on toxicology. Annual Meeting of the Mount Desert Island Biological Laboratory. Bar Harbor, ME, July 25, 2002.

Wilson, S.H. The environmental health sciences in the built environment. Health Disparities Workshop. Research Triangle Park, NC, July 15, 2002.

Wilson, S.H. NIEHS perspective. A mini-symposium at a meeting of the Board on Health Sciences Policy, IOM, NAS. Washington, DC, June 6, 2002.

Wilson, S.H. A conversation with the NIEHS Deputy Director. A session at the Society of Toxicology Annual Meeting. Nashville, TN, March 21, 2002.

Wilson, S.H. Use of genomics in environmental health research. West Harlem Environmental Action (WEACT) National Conference and Community Dialogue on Human Genetics, Environment, and Communities of Color: Ethical and Social Implications. Columbia University. New York, NY, February 4, 2002.

Wilson, S.H. Perspectives on exposure analysis. International Society for Exposure Assessment, Special Lecture. Charleston, SC, November 8, 2001.

Wilson, S.H. Initiatives in the new field of toxicogenomics. Gordon Research Conference, (Toxicology), Keynote Speaker (Special Session). New London, CT, August 2001.

Wilson, S.H. Parkinson's disease research at NIEHS, NIH. Presentation at Parkinson's Disease Foundation Congressional Briefing. Washington, DC, June 25, 2001.

Wilson, S.H. Gene-environment interactions as the new research model in environmental health. Oral Testimony before Senate Environment and Public Works Committee. Senator Clinton Field Hearing at Garden City. Long Island, New York, June 11, 2001.

Wilson, S.H. Chromium 6 studies at NIEHS/NTP. Presentation at press conference with Congressman Adam Schiff and the NTP leadership. Glendale, CA, April 6, 2001.

Wilson, S.H. Introduction and moderator. Press conference on the formation of the National Center for Toxicogenomics. National Press Club. Washington, DC, December 7, 2000.

Wilson, S.H. Federal perspective panel proceedings from: Scientific symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. New tools for environmental health in the genomics era. Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. Community-based research and outreach in environmental health research. Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. Remarks and charge to participants. Institute of Medicine Roundtable on Environmental Health Sciences, Research, and Medicine. Workshop #1. Rebuilding the Unity of Health and the Environment: A New Vision of Environmental Health for the 21st Century. June 20, 2000. Washington, DC, June 20-21, 2000.

Wilson, S.H. US/Mexico border environmental health: Communities can make a difference. Speech at the UCSD US/Mexico Border Research Meeting. La Jolla, California, June 12, 2000.

Wilson, S.H. Co-Chair and workshop speaker. International Conference on Arctic Development, Pollution and Biomarkers of Human Health. Anchorage, AL, April 30- May 3, 2000.

Wilson, S.H. Environmental genomics. Keynote Speaker, Conference on Bioinformatics of Genes and ESTs Relevant to Membrane and Cellular Toxicology. Salisbury Cove, ME, April 28-29, 2000.

Wilson, S.H. Children's environmental health: A national perspective. Keynote Speaker. The Wisconsin Annual Environmental Health Symposium, Environmental Health and Safety Risks for Children. Eau Claire, WI, April 27, 2000.

Wilson, S.H. Safety-related research. Presentation at Building Effective Partnerships - FDA and Stakeholders Public Meeting, Duke University Medical Center. Durham, NC, April 12, 2000.

Wilson, S.H. Border issues. Presentation at the International Consortium for the Environment. Border Health: Making a Difference. San Antonio, TX, March 11-15, 2000.

Wilson, S.H. Oceans and health. Presentation at the Public Policy Forum of the Consortium for Oceanographic Research and Education (CORE). Washington, DC, March 7, 2000.