

LISA A. PETERSON
CURRICULUM VITAE

EDUCATION:

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| 1977-1981 | B.A. | Macalester College, St. Paul, MN
Major: Chemistry
Thesis: "Synthesis of pine beetle pheromone." |
| 1981-1985 | Ph.D. | University of California, San Francisco, CA
Major: Pharmaceutical Chemistry
Thesis: "Stereochemical studies of the cytochrome P-450 catalyzed oxidation of (<i>S</i>)-nicotine to nicotine Δ -1',5'-iminium ion." |

PROFESSIONAL EXPERIENCE:

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| 1985-1988 | Research Associate, Department of Biochemistry, Vanderbilt University, Nashville, TN |
| 1988-1993 | Associate Research Scientist, American Health Foundation, Valhalla, NY |
| 1993-1997 | Research Scientist, American Health Foundation, Valhalla, NY |
| 1997-2002 | Associate Professor, Cancer Center and Division of Environmental and Occupational Health, School of Public Health, University of Minnesota, Minneapolis, MN |
| 2002-2006 | Associate Professor with tenure, Cancer Center and Division of Environmental Health Sciences, School of Public Health, University of Minnesota, Minneapolis, MN |
| 2005-2006 | Visiting Scientist, Institute for Biochemistry and Molecular Biology I, Heinrich Heine University, Düsseldorf, Germany |
| 2006-present | Professor, Masonic Cancer Center and Division of Environmental Health Sciences, School of Public Health, University of Minnesota, Minneapolis, MN |
| 2014-present | co-Program Leader, Carcinogenesis and Chemoprevention, Masonic Cancer Center, University of Minnesota, Minneapolis, MN |

PROFESSIONAL AFFILIATIONS:

American Association for Cancer Research
American Chemical Society
American Society for Biochemistry & Molecular Biology
American Society for Pharmacology and Experimental Therapeutics
International Society for the Study of Xenobiotics
Society of Toxicology

AWARDS AND HONORS:

Summa cum laude, with highest honors, Macalester College
Phi Beta Kappa
Graduate Opportunity Fellowship, University of California, San Francisco, 1982-1983.
Predoctoral National Service Award, University of California, San Francisco, 1983-1985.
Competitive National Research Service Award, National Institute of Environmental Health Services, "Bioactivation Pathways of Halogenated Hydrocarbons," Vanderbilt University, 1986-1988
Sigma Xi, 2002
Delta Omega, 2002
Faculty Achievement Award in Environmental Health, Division of Environmental Health Sciences, University of Minnesota, 2005.
American Chemical Society Fellow, 2013.

Macalester Alumni Service Award, 2016.

RESEARCH INTERESTS:

Mechanisms of chemical carcinogenesis through the utilization of bio-organic and analytical chemical techniques; xenobiotic metabolism; characterization of unstable metabolic intermediates; DNA repair, gene-environment interactions.

TEACHING RESPONSIBILITIES:

Toxicology courses: Systems Toxicology, Current Literature in Toxicology, Advanced Toxicology.

BIBLIOGRAPHY:

Original articles in refereed journals

Chiba, K., Peterson, L.A., Castagnoli, K.P., Trevor, A., and Castagnoli, Jr., N. Studies on the molecular mechanism of bioactivation of the selective nigrostriatal toxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP). *Drug Metab. Disp.*, 13: 342-347, 1985.

Weissman, J., Trevor, A., Chiba, K., Peterson, L.A., Caldera, P.S., Castagnoli, Jr., N., and Baillie, T. Metabolism of the nigrostriatal toxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) by liver homogenate fractions. *J. Med. Chem.*, 28: 997-1001, 1985.

Peterson, L.A., Caldera, P.S., Chiba, K., Trevor, A., and Castagnoli, Jr., N. Chemical studies on the intermediate 1-methyl-4-phenyl-2,3-dihydropyridine in the metabolism of neurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine by monoamine oxidase. *J. Med. Chem.*, 28: 1432-1436, 1985.

Peterson, L.A., Trevor, A.J., and Castagnoli, Jr., N. Stereochemical studies on the cytochrome P-450 catalyzed oxidation of (S)-nicotine to the (S)- Δ -1',5'-iminium ion. *J. Med. Chem.*, 30: 249-254, 1987.

Peterson, L.A. and Castagnoli, Jr., N. Regio- and stereochemical studies on the α -carbon oxidation of (S)-nicotine by cytochrome P450 model systems. *J. Med. Chem.*, 31: 637-640, 1988.

Peterson, L.A., Harris, T.M., and Guengerich, F.P. Evidence for an episulfonium ion intermediate in the formation of S-[2-(N7-guanyl)ethyl]-glutathione adducts. *J. Amer. Chem. Soc.*, 110: 3284-3291, 1988.

Guengerich, F.P., Peterson, L.A., and Böcker, R.H. Cytochrome P-450-catalyzed hydroxylation and carboxylic acid ester cleavage of Hantzsch pyridine esters. *J. Biol. Chem.*, 263: 8176-8183, 1988.

Peterson, L.A., Carmella, S.G., and Hecht, S.S. Investigations of metabolic precursors to hemoglobin and DNA adducts of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Carcinogenesis*, 11: 1329-1333, 1990.

Spratt, T.E., Peterson, L.A., Confer, W.L., and Hecht, S.S. Solvolysis of model compounds for α -hydroxylation of N'-nitrosornicotine and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone: Evidence for a cyclic oxonium ion intermediate in the alkylation of nucleophiles. *Chem. Res. Toxicol.*, 3: 350-356, 1990.

Peterson, L.A., Mathew, R., and Hecht, S.S. Quantitation of microsomal α -hydroxylation of the tobacco-specific nitrosamine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Cancer Res.*, 51: 5495-5500, 1991.

Peterson, L.A., Mathew, R., Murphy, S.E., Trushin, N., and Hecht, S.S. In vivo and in vitro persistence of pyridyloxobutyl DNA adducts from 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Carcinogenesis*, 12: 2069-2072, 1991.

Peterson, L.A. and Hecht, S.S. O^6 -Methylguanine is a critical determinant of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone tumorigenesis in A/J mouse lung. *Cancer Res.*, 51: 5557-5564, 1991.

Foiles, P.G., Peterson, L.A., Miglietta, L.M., and Ronai, Z. Analysis of mutagenic activity and ability to induce replication of polyoma DNA sequences by different model compounds of the carcinogenic tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Mutat. Res.*, 279: 91-101, 1992.

Peterson, L.A., Liu, X.-K., and Hecht, S.S. Pyridyloxobutyl DNA adducts inhibit the repair of O^6 -methylguanine. *Cancer Res.*, 53: 2780-2785, 1993.

Ronai, Z.A., Gradia, S., Peterson, L.A., and Hecht, S.S. G to A transitions and G to T transversions in codon 12 of the Ki-ras oncogene isolated from mouse lung tumors induced by 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) and related DNA methylating and pyridyloxobutylating agents. *Carcinogenesis*, 14: 2419-2422, 1993.

Peterson, L.A., Ng, D.K., Stearns, R.A., and Hecht, S.S. Formation of NADP(H) analogs of tobacco-specific nitrosamines in rat liver and pancreatic microsomes. *Chem. Res. Toxicol.*, 7: 599-608, 1994.

Chen, L.J., Hecht, S.S., and Peterson, L.A. Identification of *cis*-2-butene-1,4-dial as a microsomal metabolite of furan. *Chem. Res. Toxicol.*, 8: 903-906, 1995.

Carlson, T.J., Jones, J.P., Peterson, L., Castagnoli, N., Jr., Iyer, K.R., and Trager, W.F. Stereoselectivity and isotope effects associated with cytochrome P450-catalyzed oxidation of (S)-nicotine. The possibility of initial hydrogen atom abstraction in the formation of the Δ -1', 5'-nicotinium ion. *Drug Metab. Dispos.*, 23, 749-756, 1995.

El-Bayoumy, K., Prokopczyk, B., Peterson, L.A., Desai, D., Amin, S., Reddy, B.S., Hoffmann, D., and Wynder, E. Effects of dietary fat content on the metabolism of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) and on DNA-methylation induced by NNK. *Nutr. & Cancer*, 26: 1-10, 1996.

Liu, X.K., Spratt, T.E., Murphy, S.E., and Peterson, L.A. Pyridyloxobutylation of guanine residues by 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone generates substrates of O^6 -alkylguanine-DNA alkyltransferase. *Chem. Res. Toxicol.*, 9: 949-953, 1996.

Williams, G.M., Iatropoulos, M.J., Wang, C.X., Ali, N., Rivenson, A., Peterson, L.A., Schulz, C., and Gebhart, R. Diethylnitrosamine exposure-responses for DNA damage, centrilobular cytotoxicity, cell proliferation and carcinogenesis in rat liver exhibit some non-linearities. *Carcinogenesis*, 10: 2253-2258, 1996.

Anderson, K.E., Hammons, G.J., Kadlubar, F.F., Potter, J.D., Kaderlik, K.R., Ilett, K.F., Michchin, R.F., Teitel, C., Chou, H.C., Martin, M.V., Guengerich, F.P., Barone, G.W., Lang, N.P., and Peterson, L.A. Metabolic activation of aromatic amines by human pancreas. *Carcinogenesis*, 18: 1085-1092, 1997.

Peterson, L.A. *N*-Nitrosobenzylmethylamine is activated to a DNA benzylating agent in rats. *Chem. Res. Toxicol.*, 10: 19-24, 1997.

Morse, M.A., Lu, J., Gopalakrishnan, R., Peterson, L.A., Wani, G., and Stoner, G.D. Investigation of the mechanism of enhancement of esophageal tumorigenesis by 6-phenylhexyl isothiocyanate. *Cancer Lett.*, 112: 119-125, 1997.

Wang, L., Spratt, T.E., Liu, X.K., Hecht, S.S., Pegg, A.E., and Peterson, L.A. Pyridyloxobutyl adduct, O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine, is present in 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone-treated DNA and is a substrate for O^6 -alkylguanine-DNA alkyltransferase. *Chem. Res. Toxicol.*, 10: 562-567, 1997.

Chen, L.J., Hecht, S.S., and Peterson, L.A. Characterization of amino acid and glutathione adducts of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. *Chem. Res. Toxicol.*, 10: 866-874, 1997.

Patten, C.J., Peterson, L.A., and Murphy, S.E. Evidence for metabolic activation of *N'*-nitrosornicotine and *N*-nitrosobenzylmethylamine by a rat nasal coumarin hydroxylase. *Drug Met. Disp.*, 26: 177-180, 1998.

Wang, L., Spratt, T.E., Pegg, A.E., Peterson, L.A. Synthesis of DNA oligonucleotides containing site-specifically incorporated O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine and their reaction with O^6 -alkylguanine-DNA alkyltransferase. *Chem. Res. Toxicol.* 12: 127-131, 1999.

Morse, M.A., Lu, J., Stoner, G.D., Murphy, S.E., and Peterson, L.A. Metabolism of *N*-nitrosobenzylmethylamine by human cytochrome P-450 enzymes. *J. Toxicol. Environ. Health, Part A* 58, 397-411, 1999.

Peterson, L.A., Naruko, K.C. and Predecki, D.P. A reactive metabolite of furan, *cis*-2-butene-1,4-dial, is mutagenic in the Ames assay. *Chem. Res. Toxicol.*, 13: 531-534, 2000.

Peterson, L.A., Spratt, T.E., Shan, W., Wang, L., Subotkowski, W., and Roth, R. An improved synthesis of radio-labeled 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone. *J. Label. Comp. Radiopharm*, 44: 445-450, 2001.

Pauly, G.T., Peterson, L.A., and Moschel, R.C. Mutagenesis by O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine in *Escheria coli* and human cells. *Chem. Res. Toxicol.*, 15: 165-169, 2002.

- Peterson, L. A., Thomson, N. M., Crankshaw, D. L., Donaldson, E. E., and Kenney, P. J. (2001) Interactions between methylating and pyridyloxobutylating agents in A/J mouse lungs: implications for 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis. *Cancer Res.* 61: 5757-5763.
- Byrns, M.C., Predecki, D.P., and Peterson, L.A. Characterization of nucleoside adducts of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. *Chem. Res. Toxicology* 15: 373-379, 2002.
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- Peterson, L.A., Predecki, D.P., Thomson, N.M., Villalta, P.W., and Donaldson, E.E. Nucleophilic reactions between thiols and a tobacco-specific nitrosamine metabolite, 4-hydroxy-1-(3-pyridyl)-1-butanone. *Chem Res Toxicol*, 16: 661-667, 2003.
- Jalas, J.R., McIntee, E.J., Kenney, P.M.J., Upadhyaya, P., Peterson, L.A., and Hecht, S.S. Stereospecific deuterium substitution attenuates the tumorigenicity and metabolism of the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Chem. Res. Toxicol.* 16: 794-806, 2003.
- Peterson, L.A., Vu, C.C., Hingerty, B. E., Broyde, S., and Cosman, M. Solution structure of O^6 -[4-oxo-4-(3-pyridyl)-butyl]guanine adduct in an 11mer DNA duplex: evidence for formation of a base triplex. *Biochemistry* 42: 13134-13144, 2003.
- Mijal, R.S., Thomson, N.M., Fleisher, N.L., Pauly, G.T., Moschel, R.C., Kanugula, S., Fang, Q., Pegg, A.E., and Peterson, L.A. The repair of the tobacco-specific nitrosamine derived adduct, O^6 -pyridyloxobutylguanine, by O^6 -alkylguanine-DNA alkyltransferase variants. *Chem. Res. Toxicol.* 17: 424-434, 2004.
- Byrns, M.C., Vu, C.C., and Peterson, L.A. The formation of substituted 1, N^6 -etheno-2'-deoxyadenosine and 1, N^2 -etheno-2'-deoxyguanosine adducts by *cis*-2-butene-1,4-dial, a reactive metabolite of furan. *Chem. Res. Toxicol.* 17: 1607-1613, 2004.
- Thomson, N.M., Mijal, R.S., Ziegel, R., Fleischer, N.L., Pegg, A.E., Tretyakova, N., and Peterson, L.A. Development of a quantitative liquid chromatography/electrospray mass spectrometric assay for a mutagenic tobacco-specific nitrosamine-derived DNA adduct, O^6 -[4-oxo-4-(3-pyridyl)butyl]-2'-deoxyguanosine. *Chem. Res. Toxicol.* 17: 1600-1606, 2004.
- Vu, C.C. and Peterson, L.A. Synthesis of [$^{13}C_4$]furan. *J. Label. Compounds Radiopharm.*, 48: 117-121, 2005.
- Vu, C.C. and Peterson, L.A. Synthesis of a 2'-deoxyguanosine adduct of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. *Chem. Res. Toxicol.*, 18: 1012-1017, 2005.
- Peterson, L.A., Cummings, M.E., Vu, C.C., and Matter, B.A. Glutathione trapping to measure microsomal oxidation of furan to *cis*-2-butene-1,4-dial. *Drug Metab. Disp.* 33: 1453-1458, 2005.
- Mijal, R.S., Loktionova, N.A., Vu, C.C., Pegg, A.E., and Peterson, L.A. O^6 -Pyridyloxobutylguanine adducts contribute to the mutagenic properties of pyridyloxobutylating agents. *Chem. Res. Toxicol.*, 18: 1619-1625, 2005.
- Byrns, M.C., Vu, C.C., Neidigh, J.W., Abad, J.L., Jones, R.A., and Peterson, L.A. Detection of DNA adducts derived from the reactive metabolite of furan, *cis*-2-butene-1,4-dial. *Chem. Res. Toxicol.* 19: 414-420, 2006.
- Gong, J., Neels, J.F., Yu, X., Kensler, T.W., Peterson, L.A., and Sturla, S.J. Reductase-mediated bioactivation and cellular toxicity of synthetic enantiomers of antitumor acylfulvenes. *J. Med. Chem.* 49: 2593-2599, 2006.
- Mijal, R.S., Kanugula, S., Vu, C.C., Fang, Q., Pegg, A.E., and Peterson, L.A. Repair of the tobacco-specific adduct O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine by O^6 -alkylguanine-DNA alkyltransferase is affected by sequence context. *Cancer Res.*, 66: 4968-4974, 2006.

Chen, B., Vu, C.C., Byrns, M.C., Dedon, P.C., and Peterson, L.A. Formation of 1,4-dioxo-2-butene-derived adducts of 2'-deoxyadenosine and 2'-deoxycytosine in oxidized DNA. *Chem. Res. Toxicol.* 19: 982-985, 2006.

Peterson, L.A., Cummings, M.E., Chan, J.Y., Matter, B., and Vu, C.C. Identification of a *cis*-2-butene-1,4-dial-derived glutathione conjugate in the urine of furan-treated rats. *Chem. Res. Toxicol.* 19: 1138-1141, 2006.

Choi, J. Y., Chowdhury, G., Zang, H., Angel, K. C., Vu, C. C., Peterson, L. A., and Guengerich, F. P. Translesion synthesis across *O*⁶-alkylguanine DNA adducts by recombinant human DNA polymerases. *J. Biol. Chem.* 281: 38244-38256, 2006

Gong, J., Ganesan, V. V., Yu, X., Kensler, T. W., Peterson, L. A., and Sturla, S. J. Chemically labile acylfulvene-DNA adducts: Characterizing reactions of a promising antitumor agent. *J. Am. Chem. Soc.* 129: 2101-2111, 2007.

Peterson, L. A., Wagener, T., Sies, H., and Stahl, W. Decomposition of *S*-nitrosocysteine via *S*- to *N*-transnitrosation. *Chem. Res. Toxicol.* 20: 721-723, 2007.

Coulter, R., Blandino, M., Tomlinson, J. M., Pauly, G. T., Krajewska, M., Moschel, R. C., Peterson, L. A., Pegg, A. E., and Spratt, T. E. Differences in the rate of repair of *O*⁶-alkylguanines in different sequence contexts by *O*⁶-alkylguanine-DNA alkyltransferase. *Chem. Res. Toxicol.* 20, 1966-1971, 2007.

Sandercock, L. E., Hahn, J. N., Li, L., Luchman, A., Giesbrecht, J. L., Peterson, L. A., and Jirik, F. R. *Mgmt* deficiency alters the *in vivo* mutational spectrum of tissues exposed to the tobacco carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK). *Carcinogenesis*, 29, 866-874, 2008.

Lu, D., Sullivan, M. M., Phillips, M. B., and Peterson, L. A. Degraded protein adducts of *cis*-2-butene-1,4-dial are urinary and hepatocyte metabolites of furan. *Chem. Res. Toxicol.* 22, 997-1007, 2009.

Tubbs, J. L., Latypov, V., Kanugula, S., Butt, A., Melikishvili, M., Kraehenbuehl, R., Fleck, O., Marriott, A., Watson, A. J., Verbeek, B., McGown, G., Thorncroft, M., Santibanez-Koref, M. F., Millington, C., Arvai, A. S., Kroeger, M. D., Peterson, L. A., Williams, D. M., Fried, M. G., Margison, G. P., Pegg, A. E., and Tainer, J. A. Alkylated DNA damage flipping bridges base and nucleotide excision repair. *Nature*, 459, 808-813, 2009.

Li, L., Perdigo, J., Pegg, A. E., Lao, Y., Hecht, S. S., Lindgren, B., Reardon, J. T., Sancar, A., Wattenberg, E. V., and Peterson, L. A. The influence of repair pathways on the cytotoxicity and mutagenicity induced by the pyridyloxobutylation pathway of tobacco specific nitrosamines. *Chem. Res. Toxicol.* 22, 1464-1472, 2009. Selected for the Thematic Collection on Chemistry and Biology of DNA Damage by the journal, <http://pubs.acs.org/page/crtoec/thematic/dna-damage.html>.

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Urban, A. M., Upadhyaya, P., Cao, Q., and Peterson, L. A. Formation and repair of pyridyloxobutyl DNA adducts and their relationship to tumor yield in A/J mice. *Chem. Res. Toxicol.*, 25, 2167-2178, 2012.

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Non peer-reviewed publications

Peterson, L.A., Liu, X.K., and Hecht, S.S. DNA pyridyloxobutylation: 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone inhibits the repair of *O*⁶-methylguanine In "Nitrosamines and Related N-Nitroso Compounds: Chemistry and Biochemistry" (Loeppky, R.N. and Michejda, C.J., eds.) American Chemical Society: Washington DC, pp. 343-345, 1994.

Government Reports

Hecht, S.S., Belinsky, S.A., Bode, A.M., Christiani, D., Dennis, P.A., Dong, Z., Granville, C.A., Hainaut, P., Moriya, M., Murphy, S.E., Peterson, L.A., Pfeifer, G., and Spitz, M.R. Cancer. In: *How Tobacco Causes Disease - The Biology and Behavioral Basis for Tobacco-Attributable Disease: A Report of the Surgeon General*, (D. Sidransky, ed.), 2010.

Abstracts

Peterson, L.A. and Castagnoli, Jr., N. (1984): The stereochemical course of the cytochrome P-450 catalyzed oxidation of (S)-(-)-nicotine to the corresponding Δ -1',5'-iminium ion species. Gordon Research Conference on Drug Metabolism, Holderness School, NH. Invited student participant.

Peterson, L.A. and Castagnoli, Jr., N. (1984): Stereochemistry of cytochrome P-450 catalyzed α -carbon oxidation of nicotine. 6th International Symposium on Microsomes and Drug Oxidations, Brighton, England.

Peterson, L.A. (1984): The determination of the stereochemical course of the cytochrome P-450 catalyzed α -carbon oxidation of (S)-(-)-nicotine by capillary GC-EIMS. International Symposium on Mass Spectrometry in the Health and Life Sciences, San Francisco, CA.

Inskeep, P.B., Koga, N., Cmarik, J.L., Peterson, L.A., and Guengerich, F.P. (1986): Structural and chemical characterization of S-[2-(N7-guanyl)ethyl]glutathione, the major DNA adduct formed from 1,2-dibromoethane. Fed. Proc. 45, 1626. ASBC/DBC ACS Meeting, Washington, DC.

Peterson, L.A., Koga, N., Inskeep, P.B., Cmarik, J.L., and Guengerich, F.P. (1986): Glutathione-dependent formation of ethylene dibromide-DNA adducts: structure and mechanism. Gordon Research Conference on Drug Metabolism, Holderness School, NH.

Peterson, L.A., Harris, T.M., and Guengerich, F.P. (1987): Chemical mechanism involved in the formation of N7-guanine adducts from ethylene dibromide via glutathione conjugates. Fed. Proc. 46, 1970. American Society for Biological Chemistry Meeting, Philadelphia, PA.

Peterson, L.A., Harris, T.M., and Guengerich, F.P. (1987): Chemical mechanism involved in the formation of N7-guanine adducts from ethylene dibromide via glutathione conjugates. Gordon Research Conference on Drug Metabolism, Holderness School, NH.

Peterson, L.A. and Hecht, S.S. (1990): Investigations of the bioactivation mechanism(s) of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in A/J mouse lung. American Association for Cancer Research, Washington, DC.

Carlson, T.J., Peterson, L.A., Castagnoli, Jr., N, and Trager, W.F. (1990): The stereoselectivity and mechanism of the cytochrome P-450 catalyzed oxidation of (S)-nicotine. International Society for the Study of Xenobiotics. *Presented by T. Carlson.*

Peterson, L.A. and Hecht, S.S. (1991): Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in A/J mouse lung. American Association for Cancer Research, Houston, TX.

Peterson, L.A., Mathew, R., and Hecht, S.S. (1991): Quantitation of the α -hydroxylation pathways of the tobacco-specific nitrosamine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. American Association for Cancer Research, Houston, TX.

Foiles, P.G., Peterson, L.A., Miglietta, L.M., and Ronai, Z. (1991): Analysis of mutagenic activity and ability to induce replication of polyoma DNA sequences by different model compounds of the carcinogenic tobacco-specific

nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. American Association for Cancer Research, Houston, TX. *Presented by P. Foiles.*

Peterson, L.A., Mathew, R., and Hecht, S.S. (1991): Quantitation of microsomal α -hydroxylation of the tobacco-specific nitrosamine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. Gordon Research Conference on Drug Metabolism, Holderness School, NH.

Peterson, L.A., Liu, X.-K., and Hecht, S.S. (1992): DNA pyridyloxobutylation by 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone inhibits the repair of O^6 -methylguanine. *The Chemistry and Biochemistry of Nitrosamines and Other N-Nitroso Compounds*, Washington, DC.

Ronai, Z., Gradia, S., Peterson, L.A., Nagao, M., Makino, H., and Hecht, S.S. (1993): Analysis of K-*ras* and p53 mutations in lung tumors induced by 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone, 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone or acetoxymethylmethylnitrosamine. American Association for Cancer Research, Orlando, FL. *Presented by Z. Ronai.*

Peterson, L.A., Liu, X.K., and Hecht, S.S. (1993): The repair of O^6 -methylguanine is inhibited by pyridyloxobutyl DNA adducts. American Association for Cancer Research, Orlando, FL.

Peterson, L.A., Liu, X.-K., Spratt, T.E., and Murphy, S.E. (1994): Characterization of O^6 -alkylguanine DNA alkyltransferase inactivation by pyridyloxobutyl DNA adducts. American Association for Cancer Research, San Francisco, CA.

Peterson, L.A., Ng, D., Stearns, R.A., and Hecht, S.S. (1994): Formation of NADP(H) analogs of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol. American Association for Cancer Research, San Francisco, CA.

Guttenplan, J.B., Kosinska, W., and Peterson, L.A. (1994): Mutational specificities of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone, α -acetoxymethyl-NNK and *N*-nitrosornicotine. American Association for Cancer Research, San Francisco, CA. *Presented by J. Guttenplan.*

Peterson, L.A. (1995): Detection of benzylated DNA adducts in livers from *N*-nitrosomethylbenzylamine treated rats. American Association for Cancer Research, Toronto, Canada.

Morse, M.A., Lu, J., Gopalakrishnan, R., and Peterson, L.A. (1996): Investigation of the mechanism of esophageal tumorigenesis by 6-phenylhexyl isothiocyanates. American Association for Cancer Research, Washington, DC. *Presented by M. Morse.*

Peterson, L.A., Liu, X.K., Wang, L., Murphy, S.E., and Spratt, T.E. (1996): Pyridyloxobutylation of guanine generates O^6 -alkylguanine-DNA alkyltransferase reactive adducts. American Chemical Society, Orlando, FL.

Ferguson, L.J., Hecht, S.S., and Peterson, L.A. (1996): Identification of *cis*-2-butene-1,4-dial as a furan metabolite and its interaction with biologically relevant molecules. American Chemical Society, Orlando, FL. Oral presentation. *Presented by L.J. Ferguson.*

Peterson, L.A., Wang, L., Spratt, T.E., Liu, X.K., Hecht, S.S., and Pegg, A.E. (1997): O^6 -alkylguanine-DNA alkyltransferase reacts with the pyridyloxobutyl adduct, 4-(O^6 -guanyl)-1-(3-pyridyl)-1-butanone in DNA. American Association for Cancer Research, San Diego, CA.

Patten, C., Peterson, L. and Murphy, S. (1997): Kinetic analysis of the hydroxylation of *N*-nitrosornicotine, *N*-nitrosobenzyl nitrosamine, coumarin, and ethoxycoumarin catalyzed by rat nasal mucosa microsomes. American Association for Cancer Research, San Diego, CA. *Presented by C. Patten.*

Peterson, L.A., Wang, L., Spratt, T.E., and Pegg, A.E. (1997): Oligomers containing O^6 -[4-oxo-4-(3-pyridyl)butyl]-guanine are substrates for O^6 -alkylguanine-DNA alkyltransferase. American Chemical Society, Las Vegas, NV.

Peterson, L.A., Wang, L., Spratt, T.E., and Pegg, A.E. (1998): Oligomers containing O^6 -[4-oxo-4-(3-pyridyl)butyl]-guanine are repaired by O^6 -alkylguanine-DNA alkyltransferase. American Chemical Society, Boston, MA.

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- Peterson, L.A. and Thomson, N.T. (2000): Characterization of O^6 -alkylguanine-DNA alkyltransferase-substrate pyridyloxobutyl DNA adducts. American Chemical Society, San Francisco, CA.
- Donaldson, E., Pegg A.E., and Peterson, L.A. (2000): Role of pyridyloxobutyl DNA adducts by human O^6 -alkylguanine-DNA alkyltransferase. American Chemical Society, San Francisco, CA. *Presented by E. Donaldson.*
- Peterson, L.A., Thomson, N.T., Crankshaw, D.L., and Kenney, P.J. (2000): The role of DNA repair in 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone –induced lung tumorigenesis. Pacificchem 2000, Honolulu, HI.
- Peterson, L.A., Thomson, N.T., Crankshaw, D.L., and Kenney, P.J. (2001): The role of DNA repair in nitrosamine – induced lung tumorigenesis in A/J mice. American Association for Cancer Research, March, New Orleans, LA.
- Wichmann, A.E., Peterson, L.A., Thomson, N.M., and Wattenberg, E.V. (2001): Differential activation of mitogen activated protein kinases by genotoxic methylating agents. American Chemical Society, Chicago, IL.
- Thomson, N.M., Kenney, P.M., and Peterson, L.A. (2001): Formation and repair of O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine in A/J mice. American Chemical Society, Chicago, IL. *Presented by N.M. Thompson.*
- Upadhyaya, P., McIntee, E.J., Villalta, P.W., Wang, M., Peterson, L.A., and Hecht, S.S. (2001): Formation of 2'-deoxyguanosine adducts with 4-[(acetoxymethyl)nitrosamino]-1-(3-pyridyl)-1-butanol. American Chemical Society, Chicago, IL. *Presented by P. Upadhyaya.*
- Byrns, M.C., Predecki, D.P., and Peterson, L.A. (2001): Characterization of *cis*-2-butene-1,4-dial-derived deoxynucleoside adducts. American Chemical Society, Chicago, IL. *Presented by M.C. Byrns.*
- Byrns, M.C., Predecki, D.P., and Peterson, L.A. (2002) Characterization of nucleoside adducts of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. American Association for Cancer Research, March, San Francisco, CA.
- Wichmann, A.E., Thomson, N.M., Peterson, L.A., and Wattenberg, E.V. (2002) Differential activation of mitogen activated protein kinases by genotoxic methylating agents. American Association for Cancer Research, March, San Francisco, CA. *Presented by E.V. Wattenberg.*
- Pauly, G.T., Peterson, L.A., and Moschel, R.C. (2002) Mutagenesis by O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine in *Escherichia coli* and human cells. American Association for Cancer Research, March, San Francisco, CA. *Presented by G.T. Pauly*
- Byrns, M.C. and Peterson, L.A. (2002) Identification and detection of adducts formed in the reaction of *cis*-2-butene-1,4-dial with DNA. American Chemical Society, August, Boston, MA. *Presented by M.C. Byrns.*
- Thomson, N.M., Pegg, A.E., and Peterson, L.A. (2002) Reaction of O^6 -alkylguanine-DNA alkyltransferase variants with O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine in oligodeoxyribonucleotides. American Chemical Society, August, Boston, MA. *Presented by Nicole Thomson.*
- Mijal, R.S., Thomson, N.M., Pegg, A.E. and Peterson, L.A. (2003) Pairing genotype with phenotype: Do variant O^6 -alkylguanine-DNA alkyltransferases have different O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine repair phenotypes? American Association for Cancer Research, July, Washington, DC. *Presented by Renée Mijal.*
- Cosman, M., Peterson, L.A., Vu, C., Hingerty, B.E., Broyde, S. (2003) Solution structure of an O^6 -[4-oxo-4-(3-pyridyl)butyl]guanine adduct in an 11mer: Evidence for formation of a base'triplex.' American Association for Cancer Research, July, Washington, DC. *Presented by Monique Cosman.*
- Byrns, M.C. and Peterson, L.A. (2003) Development of a sensitive assay for the detection of DNA adducts formed by *cis*-2-butene-1,4-dial. Fall National Meeting of the American Chemical Society, Division of Chemical Toxicology.

September 9, New York, NY. Presented by Michael Byrns who received 1st place award in the graduate student poster competition.

Mijal, R.S., Vu, C.C., Pegg, A.E. and Peterson, L.A. (2004) Characterizing variation in repair of NNK-derived O⁶-alkylguanine adducts by the DNA repair protein, O⁶-alkylguanine-DNA alkyltransferase. Pathobiology of Cancer Workshop, American Association for Cancer Research, July 2004. Presented by Renée Mijal.

Byrns, M.C., Vu, C.C. and Peterson, L.A. (2004) *cis*-2-Butene-1,4-dial, a reactive metabolite of furan, forms substituted N1,N⁶-etheno-2'-deoxyadenosine and N1,N²-etheno-2'-deoxyguanosine adducts. Fall National Meeting of the American Chemical Society, Division of Chemical Toxicology. August, Philadelphia, PA. Presented by Michael Byrns who received 2nd place award in the graduate student poster competition.

Vu, C.C. and Peterson, L.A. (2004) Synthesis of a 2'-deoxyguanosine adduct of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. Fall National Meeting of the American Chemical Society, Division of Chemical Toxicology. August, Philadelphia, PA. Presented by Choua Vu.

Peterson, L.A., Cummings, M.E., Vu, C.C. and Matter, B.A. (2004) Identification of the urinary metabolites of furan. Fall National Meeting of the American Chemical Society, Division of Chemical Toxicology. August, Philadelphia, PA.

Peterson, L.A., Cummings, M.E., Vu, C.C. and Matter, B.A. (2004) Identification of a *cis*-2-butene-1,4-dial-derived glutathione conjugate in the urine of furan-treated rats. 7th International Meeting of the International Society for the Study of Xenobiotics, August 30-September 2, Vancouver, British Columbia.

Mijal, R.S., Kanugula, S., Vu, C.C., Fang, Q., Pegg, A.E., and Peterson, L.A. (2005) Sequence context affects the repair of the tobacco-specific nitrosamine adduct O⁶-pyridyloxobutylguanine by human O⁶-alkylguanine-DNA alkyltransferase variants. American Association for Cancer Research, April 2005. Presented by Renée Mijal.

Byrns, M.C. and Peterson, L.A. (2005) Development of an assay for the detection of furan-derived DNA adducts. American Association for Cancer Research, April 2005. Presented by Michael Byrns.

Cosman, M., Peterson, L.A., Vu, C.C., and Hingerty, B.E. (2005) Solution structure of an O⁶-[4-oxo-4-(3-pyridyl)butyl]guanine adduct positioned opposite dT in an 11mer DNA duplex. American Association for Cancer Research, April 2005. Presented by Monique Cosman.

Peterson, L.A., Mijal, R.S., Kanugula, S., Vu, C.C., Fang, Q., and Pegg, A.E. (2005) Characterization of O⁶-pyridyloxobutylguanine repair by O⁶-alkylguanine-DNA alkyltransferase variants. MGMT meeting, August 2005, Keele, England. Paper selected for oral presentation.

Mijal, R.S., Kanugula, S., Vu, C.C., Fang, Q., Pegg, A.E., and Peterson, L.A. Sequence context affects the repair of O⁶-pyridyloxobutylguanine by human O⁶-alkylguanine-DNA alkyltransferase variants. American Chemical Society National Meeting, August 2005, Washington, DC. Presented by Renée Mijal.

Gong, J., Neels, J.F., Yu, X., Kensler, T, Peterson, L.A., and Sturla, S.J. Synthesis, bioactivation and cellular toxicity of antitumor acylfulvenes. American Association for Cancer Research, April 2006. Presented by Jiachang Gong.

Li, L., Pegg, A.E., Lao, Y., Hecht, S.S., Reardon, J.T., Sancar, A., Wattenberg, E.V., Peterson, L.A. The influence of DNA repair pathways on the toxicity and mutagenicity induced by pyridyloxobutylating agents. American Chemical Society National Meeting, Boston, MA, August, 2007. Presented by Li Li.

Lu, D., Sullivan, M.M. and Peterson, L.A. Characterization of furan metabolites and their potential role in furan-derived protein binding. American Chemical Society, Philadelphia, PA, August 2008. Presented by Ding Lu.

Peterson, L.A., Sullivan, M.M. and Lu, D. Degraded protein adducts are metabolites of the hepatotoxicant, furan. International Society for the Study of Xenobiotics North American Meeting, San Diego, CA, October 2008.

Warmka, J., Fang, Q., Pegg, A.E., Peterson, L.A. Phenotyping human livers for repair of O⁶-methylguanine and O⁶-[4-oxo-4-(3-pyridyl)butyl]guanine adducts by O⁶-alkylguanine-DNA alkyl-transferase, American Association for Cancer Research, April 2009. Presented by Janel Warmka.

Sullivan, M.M., Phillips, M.B., Lu, D., and Peterson, L.A. Furan metabolites react with polyamines and their precursors. American Chemical Society National Meeting, Washington DC, August, 2009. *Presented by Mathilde Sullivan.*

Lu, D., Sullivan, M.M., and Peterson, L.A. Identification of furan metabolites derived from cysteine-*cis*-2-butene-1,4-dial-lysine cross-links. American Chemical Society National Meeting, Washington DC, August, 2009. *Presented by Ding Lu.*

Warmka, J.K., Fang, Q., Urban, A.M., Pegg, A.E. and Peterson, L.A. Phenotyping human livers for repair of *O*⁶-methylguanine and *O*⁶-[4-oxo-4-(3-pyridyl)butyl]guanine adducts by *O*⁶-Alkylguanine-DNA alkyl-transferase. American Chemical Society National Meeting, Boston, MA, August 2010. *Presented by Janel Warmka who won 2nd prize in the postdoctoral poster competition.*

Urban, A.M., Upadhyaya, P. and Peterson, L.A. Role of pyridyloxobutyl DNA adducts in nitrosamine-induced cancers. American Chemical Society National Meeting, Boston, MA, August 2010. *Presented by Ania Urban who won 2nd prize in the graduate student poster competition.*

Terrell, A.N, Huynh, M. and Peterson, L.A. The mutagenic potential of *cis*-2-butene-1,4-dial. Society of Toxicology National Meeting, Washington DC, March 2011. *Presented by Ashley Terrell who won a travel grant award.*

Urban, A.M., Upadhyaya, P., and Peterson, L.A. Pyridyloxobutyl DNA adducts and their relationship to tumor formation in the A/J mouse lung model. American Chemical Society National Meeting, Denver, CO, August 2011. *Presented by Ania Urban who won 1st prize in the graduate student poster competition.*

Brus, L.A., Lu, D., and Peterson, L.A. Oxidation of furan to a reactive metabolite by human cytochrome P450 enzymes. American Chemical Society National Meeting, Denver, CO, August 2011. *Presented by Leah Brus Gates.*

Phillips, M.B. and Peterson, L.A. Measurement of the kinetics of reaction of *cis*-2-butene-1,4-dial with glutathione using NMR. Society of Toxicology National Meeting, San Francisco, March 2012. *Presented by Martin Phillips.*

Peterson, L.A., Gates, L.A., Phillips, M.B., and Matter, B.A. Comparative metabolism of furan in rodent and human cryopreserved hepatocytes. American Chemical Society National Meeting, Philadelphia, PA, August 2012.

Peterson, L.A., Urban, A.M, Vu, C.C., Cummings, M.E., Brown, L.C., Fish, A.J., Li, L., Warmka, J.K., Wattenberg, E.V. and Pegg, A.E. Role of aldehydes in the toxic and mutagenic effects of nitrosamines. American Chemical Society National Meeting, Philadelphia, PA, August 2012.

Grill, A.E., Gates, L.A., and Peterson, L.A. LC-MS/MS assay for biomarkers of furan exposure and metabolism in human urine. American Chemical Society National Meeting, Indianapolis, IN, September 2013. *Presented by Alex Grill.*

Grill, A.E., Gates, L.A., Lu, D., Murphy, S.E., Hecht, S.S. and Peterson, L.A. Human urinary metabolites as possible biomarkers of exposure to furan. American Chemical Society National Meeting, San Francisco, CA, August 2014. *Presented by Alex Grill.*

Ignatovich, I.V., Grill, A.E. and Peterson, L.A. Inter-individual differences in sensitivity to cytotoxic and genotoxic properties of nitrosamines. American Chemical Society National Meeting, San Francisco, CA, August 2014. *Presented by Igor Ignatovich.*

Peterson, L.A., Ignatovich, I.V., Grill, A.E. and Ho, Y. Individual differences in sensitivity to cytotoxic and genotoxic effects of a tobacco carcinogen. American Chemical Society National Meeting, Boston, MA, August 2015.

Peterson, L.A., Oram, M., Seabloom, D., Ho, Y.Y., O'Sullivan, G.O., Hecht, S.S. Balbo, S., and Wiedmann, T. Interaction between tobacco smoke constituents in A/J mouse tumor model. NIH Tobacco Regulatory Science Conference, Washington DC, May 2016.

Oram, M.K., Seabloom, D., O'Sullivan, M.G., Ho, Y.Y., Zhang, L., Hecht, S.S., Balbo, S., Wiedmann, T.S. and Peterson, L.A. Inhaled Aldehydes Increase Lung Tumor Formation in the NNK Induced A/J Mouse Tumor Model. American Chemical Society National Meeting, Philadelphia, PA, August 2016. *Presented by M. Oram.*

INVITED LECTURES AND PRESENTATIONS:

Medicinal Chemistry Department, University of Minnesota, "Mechanistic studies on the bioactivation of the carcinogen ethylene dibromide." May 1988.

Section of Medicinal Chemistry, School of Pharmacy, University of Connecticut, Storrs, "Mechanistic studies on the bioactivation of the carcinogen ethylene dibromide," September 1988.

Drug Disposition Section, Sandoz Pharmaceutical Corporation, "Mechanisms of lung tumor formation in A/J mice by the tobacco-specific nitrosamine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone," March 1990.

Department of Drug Metabolism, Hoffmann-LaRoche, "Mechanisms of lung tumor formation in A/J mice by the tobacco-specific nitrosamine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone." July 1990.

Queens College, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." March 1993.

Laboratory for Cancer Research, Rutgers University, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." December 1993.

Laboratory of Molecular Endocrinology, Laval University, Sainte-Foy, Quebec, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." July 1995.

University of Minnesota Cancer Center and Division of Environmental and Occupational Health, School of Public Health, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." December 1996.

Department of Environmental and Industrial Health, University of Michigan, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." May 1997.

Safety Assessment Department, Merck Research Laboratories, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced lung tumorigenesis in A/J mice." August 1997.

Chemistry Department and Cancer Center, Wake Forest University, "Mechanistic studies on the lung carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in A/J mouse." April 1998.

Macalester College, "Chemical mechanisms of lung tumor formation in A/J mice by the tobacco-specific nitrosamine, NNK." November 1998.

Nucleic Acids Interest Group, Chemistry Department, University of Minnesota, "Interactions between DNA alkylation pathways resulting from an unsymmetric nitrosamine." October 1998.

Division of Chemical Toxicology, American Chemical Society Meeting, "Chemical mechanisms of NNK-induced lung carcinogenesis in A/J mice," Anaheim, CA, March 1999.

9th North American International Society for the Study of Xenobiotics Meeting, "Interactions between two alkylation pathways of an unsymmetric nitrosamine," Nashville, TN, October 1999.

Chemistry Department, St. John's University/College of Saint Benedict, Collegeville, MN, "Studies in Chemical Carcinogenesis," October 2001.

Special Topics in Chemistry (Chem 2910), University of Minnesota, "Studies in Chemical Carcinogenesis," October 2001.

Department of Chemistry, Kalamazoo College, Kalamazoo, MI, "Studies in Chemical Carcinogenesis," November 2001.

Applications to Promote Research Collaborations Workshop, Division of Cancer Biology, NCI, Bethesda, MD, "Co-Carcinogenic Activity of Nitrosamine Metabolites," January 2002.

Northland Chapter of the Society of Toxicology Fall Meeting, "Gene-Environment Interactions: A Role for DNA Repair in Tobacco-Related Cancers?" November 2002.

Department of Chemistry, St. Catherine's University, St. Paul, MN, "Studies in Chemical Carcinogenesis," November 2002.

Chemistry Department, Macalester College, St. Paul, MN, "Gene-environment interactions: role of DNA repair in tobacco-related cancers," November 2004.

American Association for Cancer Research Think Tank on Chemistry in Cancer, Philadelphia, PA., "Chemical biology of cancer," February 10-11, 2005.

Chemistry Department, Hamline University, St. Paul, MN, "Gene-environment interactions: role of DNA repair in tobacco-related cancers," March 2005.

Seventh International Symposium on Biological Reactive Intermediates Meeting held jointly with the Division of Chemical Toxicology, American Chemical Society, "Electrophilic intermediates produced by bioactivation of furan" Tucson, AZ, January 2006.

Department of Biochemistry and Molecular Cell Biology, University of Göttingen, Göttingen, Germany, "Gene-environment interactions: the role of DNA repair in tobacco-related cancers," March 2006.

American Chemical Society National Meeting, "Mechanisms of furan toxicity and carcinogenicity," Philadelphia, PA, August 2008.

Department of Medicinal Chemistry, University of Kansas, "Mechanisms of furan induced toxicity and carcinogenicity," Lawrence, KS, February 2009.

Center in Molecular Toxicology, Vanderbilt University, "Reaction of furan metabolites with cellular nucleophiles," Nashville, TN, April 2009.

National Center in Toxicological Research, "Mechanisms of furan-induced toxicity and carcinogenicity," Little Rock, Arkansas, June 2010.

American Chemical Society National Meeting, "Reactive metabolites in the biotransformation of furan-containing molecules," Boston, MA, August 2010.

Expert Panel of the Flavor and Extract Manufacturers Association, "Furan as an environmental toxicant," Boston, MA September 2011.

Department of Medicinal Chemistry and Pharmacognosy, University of Illinois, Chicago, "Reactive metabolites of furan, a possible human carcinogen," Chicago, IL, January 2013.

Drug Metabolism Gordon Conference, "Bioactivation pathways of furan, a possible human carcinogen," Holderness School, NH, July 2013.

American Chemical Society National Meeting, "Context Matters: Contribution of specific adducts to the genotoxic properties of nitrosamines," San Francisco, CA, August 2014.

Center of Excellence in Environmental Toxicology, University of Pennsylvania, "Context Matters: Contribution of specific adducts to the genotoxic properties of nitrosamines," Philadelphia, PA, October 2014.

Macalester College, Distinguished Alumni Day in Olin Rice Science Center, "Chemical Adventures in Toxicology," St. Paul, MN, October 2014.

Penn State College of Medicine, Biomedical Sciences Seminar Series, "Mechanisms of carcinogenesis by environmental chemicals," Hershey, PA September 2016.

2017 Mesilla Chemistry Workshop on Mass Spectrometry of Nucleic Acids, "Combining mass spectrometry with biochemical studies to define the contribution of specific DNA damage to the carcinogenic properties of tobacco chemicals," Mesilla, New Mexico, February 2017.

INTERNAL SEMINARS:

University of Minnesota

University of Minnesota Cancer Center, "Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in A/J mouse lung." February 1998.

General Environmental Toxicology (PubH 5261), University of Minnesota, "Lung-specific carcinogenicity of nicotine derivatives present in tobacco smoke." November 1998.

Division of Environmental and Occupational Health, School of Public Health, University of Minnesota, "Mechanisms of lung tumor formation in A/J mice by the tobacco-specific nitrosamine, NNK." October 1998.

Department of Medicinal Chemistry, School of Pharmacy, University of Minnesota, "Chemical mechanisms of NNK-induced lung carcinogenesis in A/J mice," September 1999.

Grand Rounds, School of Medicine, University of Minnesota, "Mechanistic studies on the carcinogenic activity of a tobacco-specific nitrosamine," December 1999.

M.D./Ph.D. Program Seminar, School of Medicine, University of Minnesota, "Studies in Chemical Carcinogenesis," April 2000.

Division of Environmental and Occupational Health, School of Public Health, University of Minnesota, "Studies in chemical carcinogenesis, April 2000.

M.D./Ph.D. Program Seminar, School of Medicine, University of Minnesota, "Studies in Chemical Carcinogenesis," October 2001.

Special Topics in Chemistry (Chem 2920), University of Minnesota, "Research at the Cancer Center," February 2003.

Carcinogenesis and Chemoprevention Program, Cancer Center, University of Minnesota, "Chemical mechanisms of furan-induced carcinogenesis," February 2005.

Carcinogenesis and Chemoprevention Program, Cancer Center, University of Minnesota, "Mechanisms of furan toxicity and carcinogenicity," September 2008.

Environmental Health Sciences, University of Minnesota, "Mechanisms of cancer induction by environmental chemicals," September 2009.

M.D./Ph.D. Program Seminar, School of Medicine, University of Minnesota, "Mechanisms of cancer induction by environmental chemicals," February 2010.

Cancer Prevention and Control, Masonic Cancer Center, University of Minnesota, "Furan as an environmental carcinogen," September 2011.

Pathway Driven Pharmacogenomics, University of Minnesota Alliance (PUMA), "Ethnic/racial differences in DNA repair," September 2011.

Institute of Human Genetics, University of Minnesota, "Effect of Tobacco Carcinogens on Gene Expression." November 2011.

Carcinogenesis and Chemoprevention Program, University of Minnesota Masonic Cancer Center, "Update on Furan," September 2014.

Division of Environmental Health Sciences, University of Minnesota, "Individual differences in sensitivity to cytotoxic and genotoxic effects of a tobacco carcinogen," November 2016.

Carcinogenesis and Chemoprevention Data Club, University of Minnesota Masonic Cancer Center, "Interaction between tobacco smoke chemicals in rodent tumor models," November 2016.

American Health Foundation

American Health Foundation, “Investigations of the bioactivation mechanism(s) of NNK in A/J mouse lung.” September 1989.

American Health Foundation, “Mechanistic studies on the carcinogenic activity of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in A/J mouse lung.” February 1991.

American Health Foundation, “Pyridyloxobutyl DNA adducts inhibit the repair of O⁶-methylguanine.” September 1992.

American Health Foundation, “Pyridyloxobutyl DNA adducts inhibit the repair of O⁶-methylguanine.” March 1994.

American Health Foundation, “Investigations into the mechanism of pancreatic carcinogenesis by 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) in the rat.” November 1995.

American Health Foundation, “Characterization of an O⁶-alkylguanine-DNA alkyltransferase substrate adduct in pyridyloxobutylated DNA.” May 1997.

GRANTS, CONTRACTS, AND AWARDS OBTAINED:

External grants

Active:

R01 CA184987 Interactions between tobacco smoke constituents in rodent tumor models, Principal Investigator, 40% effort, National Cancer Institute, 06/15/2014 – 05/31/2019

The goal of this project is to characterize the potential interactions between known human carcinogens (4-methylnitrosamino-1-(3-pyridyl)-1-butanone, *N*-nitrosornicotine, or benzo[*a*]pyrene) and volatile components of tobacco smoke (acetaldehyde, acrolein, and formaldehyde) in established rodent tumor models.

P30 CA077598 Cancer Center Support Grant (PI: Yee, D) Program Leader, Carcinogenesis and Chemoprevention Program, 7.6% effort, National Cancer Institute 02/01/14 – 01/31/19.

The Cancer Center Support Grant provides infrastructure support for broadly based, multidisciplinary cancer research efforts, specifically Masonic Cancer Center leadership and shared resources: Analytical Chemistry and Biomarkers, Biostatistics, Cell Therapy Lab, Mouse Genetics Lab, Peptide Synthesis and Design, Data Collection and Survey, Tissue Procurement Facility, Flow Cytometry and Cancer Protocol Review.

UC2 ES026533 “Minnesota CHEAR Exposure Assessment Hub, co-Principal Investigator and Biological Response Indicator Resource Leader, 15% effort, National Institute for Environmental Health Sciences, 10/01/15 – 9/31/19.

This cooperative agreement funds the measurement of exposure and biological response indicator biomarkers in biological samples from NIH funded children’s health studies.

Administrative Supplement to UC2 ES026533 “Exposure Services for ECHO,” co-Principal Investigator 2.5% effort, National Institute for Environmental Health Sciences, 10/01/16 – 9/31/17.

This supplement will be to augment CHEAR resources to do analytical measurements of exposure in Environmental Influences on Child Health Outcomes grantee samples.

P01 CA138338 Mechanisms of Ethnic/Racial Differences in Lung Cancer Due to Cigarette Smoking (PI: Stephen Hecht, Ph.D), Project 3: Ethnic/racial Differences in Metabolism and DNA Adduct Formation by 1,3-Butadiene (Project Leader: Natalia Tretyakova), co-Investigator 4%, National Cancer Institute, 09/21/16 – 08/31/18.

The goal of Project 3 is to investigate inter-individual and inter-ethnic/racial differences in formation of butadiene induced DNA adducts in smokers, to establish their role in lung cancer risk, and to link inter-individual differences in response to butadiene to specific polymorphisms of carcinogen metabolism and DNA repair genes.

Past:

"Activities to Promote Research Collaboration," Principal Investigator, National Cancer Institute, Collaborative supplement to "Co-Carcinogenic Activity of Nitrosamine Metabolites" RO1-59887, 9/1/99 - 12/31/99

The major goal of this pilot project is to examine the role of protein alkylation in the activation of mitogen activated protein kinases by simple alkylating agents.

R13 CA-CA89593 "Chemical Perspectives on Human Cancer," Principal Investigator, National Cancer Institute, 7/1/00 - 6/3/01

This grant is to cover the travel expenses of invited speakers to the Symposium entitled "Chemical Perspectives on Human Cancer" that will be held at the Pacificchem Congress in Honolulu, Hawaii December 16 and 17, 2000. Lisa Peterson is a co-organizer of this symposium.

ES-10956 "Training Grant in Environmental and Occupational Health," Co-director; Principal Investigator: William Toscano, NIH National Research Service Award, 7/1/01 - 6/30/06

This training grant is to support students pursuing a PhD. degree in Environmental Health.

"Human variation in O^6 -alkylguanine repair" Principal Investigator, 2%, National Cancer Institute University of Minnesota Cancer Center Cancer Etiology, Prevention and Control Award, NIH/NCI/5 P30 CA077598-07 (Pilot Project 17), 07/01/04 – 06/30/06

This grant provides seed funding to explore individual differences in repair of bulky O^6 -alkylguanine adducts in humans.

R01 CA-59887 "Co-carcinogenesis of nitrosamine metabolites," Principal Investigator, 20%, National Cancer Institute, 5/5/93 - 3/31/07, 1 year no cost extension.

This grant will investigate the ability of nitrosamine metabolites to interfere with the repair of O^6 -alkylguanine adducts through mechanisms other than competition for reaction with the repair protein, O^6 -alkylguanine-DNA alkyltransferase.

R01-CA107143 "Predictors of Adult Leukemia" Co-investigator, 4%, National Cancer Institute (PI: Ross, J.) 04/01/05 - 03/3/10

This project will investigate the role of exposure to non-steroidal anti-inflammatory drugs and farming practices and related exposures in gene-environment interactions in the etiology and risk of adult leukemia.

R01-CA115309, "Role of O^6 -alkylguanine in nitrosamine-induced cancers," Principal Investigator, 20%, National Cancer Institute, 4/1/05 - 3/31/10, in no-cost extension period through 2011.

The major goal of this grant is to determine the role of bulky O^6 -alkylguanine DNA adduct formation and repair in the carcinogenic and mutagenic properties of tobacco-specific nitrosamines.

RO1 ES-10557 Summer Student Supplement "Mechanisms of Furan-Induced Carcinogenicity and Toxicity," Principal Investigator, National Institute of Environmental Health Science, 06/01/10 - 08/31/10.

This supplement funds the summer stipend of Mailee Huynh, an undergraduate student at the University of Minnesota.

RO1 ES-10557 Diversity Supplement "Mechanisms of Furan-Induced Carcinogenicity and Toxicity," Principal Investigator, National Institute of Environmental Health Science, 4/01/10 - 3/31/12.

This supplement funded Ashley Terrell's stipend and travel expenses for two years.

RO1 ES-10557 “Mechanisms of Furan-Induced Carcinogenicity and Toxicity,” Principal Investigator, 35%, National Institute of Environmental Health Science, 8/17/00 7/31/04, 8/17/07-3/31/12, in one year no cost extension.

The major goal of this grant is to determine what metabolites are responsible for furan-induced liver carcinogenicity and toxicity in rats and mice.

P01 CA138338 Mechanisms of Ethnic/Racial Differences in Lung Cancer Due to Cigarette Smoking (PI: Stephen Hecht, Ph.D), Project 4: Ethnic/Racial Differences in DNA Repair, Project Leader, 15%, National Cancer Institute, 04/01/10 – 03/31/15.

This program will investigate the hypothesis that ethnic and racial differences in lung cancer caused by cigarette smoking are due to dissimilarities in exposure and response to tobacco smoke carcinogens. Project 4 will explore ethnic/racial differences in the repair and biological consequences of tobacco-carcinogen derived DNA damage.

Institutional Research Grant, Principal Investigator, 0% effort, American Cancer Society, 01/01/13 - 12/31/16.

This grant funds junior faculty seed grants for cancer research. This grant was successfully renewed and Kaylee Schwertfeger took over in March 2017 as the PI.

Pending:

University of Minnesota Internal Grants

Current:

Past:

“Mechanisms of Furan-induced Toxicity and Carcinogenicity” Principal Investigator, Grant-in-Aid of Research, Artistry and Scholarship, University of Minnesota, 05/15/2012 – 11/30/2013.

Bridge funding to study the mechanisms of furan-induced toxicity and carcinogenicity.

“Biomarkers of furan exposure and bioactivation” Principal Investigator, Midwest Center for Occupational Health and Safety Seed Grant, University of Minnesota, 11/01/2012 – 10/31/2013.

The goal of this project was to develop urinary biomarkers for furan exposure in humans.

“Effect of Tobacco Carcinogens on Gene Expression” Principal Investigator, Institute of Human Genetics, University of Minnesota, 07/01/2010 – 06/30/2011.

The major goal of this proposal is to determine if tobacco carcinogen-derived DNA damage induces changes in gene expression in immortalized human lymphocytes.

“Modulation of mitogen-activated protein kinase pathways by genotoxic alkylating agents,” Co-investigator with Elizabeth Wattenberg, Academic Health Center, University of Minnesota, Faculty Seed Grant, 7/1/99-6/31/01

The major goal of this pilot project is to determine the role of DNA alkylation, specifically O⁶-methylguanine, in the activation of mitogen activated protein kinases by four model methylating agents: acetoxymethylmethylnitrosamine, methyl methane-sulfonate, *N*-methyl-*N*-nitrosourea, and *N*-nitroso-*N*-methylurethane.

“Application for an electrochemical detector” Principal Investigator, Minnesota Medical Foundation, 5/15/01-5/14/02

This grant is for the purchase of an electrochemical detector for HPLC.

“A rat cell model to measure toxicity of fine fungal particles” Principal Investigator, University of Minnesota School of Public Health Faculty Seed Grant, Minnesota Medical Foundation, 02/01/04 – 07/31/05

This is a pilot grant to fund preliminary studies to investigate the hypothesis that fine mold particles contain levels of toxicants sufficient to cause human health effects.

“The role of DNA and protein adducts in the action of the chemotherapeutic agent (hydroxymethyl)acylfulvene” Co-Principal Investigator, University of Minnesota Cancer Center Carcinogenesis and Chemoprevention Program, 07/01/04 – 06/30/06

This grant provides funding for a postdoctoral fellow to characterize DNA and protein adducts formed by a novel chemotherapeutic agent.

“Biomarkers to investigate ethnic differences in tobacco carcinogenesis” Co-investigator (PI: S.S. Hecht), Faculty Research Development Grant, Academic Health Center, University of Minnesota, 01/01/2009 – 12/31/2010

The major goal of this proposal is to develop biomarkers to assess risk of tobacco carcinogenesis in humans. My portion is to develop methods to determine ethnic differences in DNA repair of tobacco carcinogen DNA damage in immortalized human lymphocytes from the Hapmap Project.

“Tissue Culture Equipment” Principal Investigator, Grant-in-Aid of Research, Artistry and Scholarship, University of Minnesota, 07/01/2010 – 01/15/2011.

The major goal of this proposal is to purchase tissue culture equipment.

American Health Foundation grants

“Inhibition of O⁶-alkylguanine-DNA alkyltransferase by aldehydes,” Principal Investigator, American Health Foundation Internal Seed Grant, 1/1/92-12/31/92

The major goal of this pilot project was to determine the role of aldehydes in enhancing the carcinogenic effects of nitrosamines.

“Mechanism of pancreatic carcinogenesis by NNAI and NNK in the rat.” Principal Investigator, American Health Foundation Internal Seed Grant, 6/1/94-5/31/95

The major goal of this pilot project was to explore the role of cell proliferation, oxidative damage and alkylation DNA in pancreatic tumors induced by tobacco-specific nitrosamines in the rat pancreas.

COURSES TAUGHT

Organic Chemistry – School of Pharmacy, University of California, San Francisco
Teaching Assistant

Fall 1981 – Spring 1982 : Enrollment: 50

General Chemistry – Department of Science, Marymount College, Tarrytown, NY
Sole Instructor

Spring 1996 : Enrollment 15

Master Thesis (PubH 5250-15)

Advised writing of thesis

Fall 1998 : Enrollment 1

Seminars in Environmental Health (PubH 5159)

Critiqued seminar and helped in coordination of the course which focused on mechanisms of cell death

Spring 1999 : Enrollment 17

Topics in Chemical Toxicology (PubH 5150-04)

Co-taught with E. Wattenberg

Spring 1999 : Enrollment 5

Environmental Health Effects: Toxicology and Epidemiology (PubH 5104)

Gave five lectures

Fall 1999 : Enrollment 33

Independent Study in Toxicology (PubH 5100)

Advised writing of term paper on lead toxicity

Fall 1999 : Enrollment 1

Physiological Disposition of Xenobiotics (PubH 5160)

Sole Instructor

Spring 2000: Enrollment 8
Spring 2001: Enrollment 6
Spring 2002: Enrollment 13
Spring 2003: Enrollment 9
Spring 2004: Enrollment 7

Directed Studies (Chem 2094)

Mentor for undergraduates performing research in Dr. Peterson's lab
Fall 2000 – Spring 2002

Directed Studies (GCD 4994)

Mentor for undergraduates performing research in Dr. Peterson's lab
Fall 2000 – Spring 2002

Environmental Health Effects (PubH 5104)

Gave one lecture

Fall 2000, 2001, 2002, 2004: Enrollment 40

Environmental Health Effects (PubH 3104/6104)

Gave 5 lectures and helped coordinate the class

Fall 2008: Enrollment 56

Gave 1 lecture:

Fall 2009, Summer Institute 2010

Field Experience in Environmental and Occupational Health (PubH 5102)

Coordinator

Fall 2000 : Enrollment 1

Vistas in Medicinal Chemical Research (MedC 5495)

Gave one lecture

Fall 2000, 2001, 2002, 2003, 2004, 2006, 2007, 2008, 2009, 2010: Enrollment ~9

Biology of Cancer (MICa 8004)

Gave two lectures on environmental carcinogenesis

Spring 2001, 2002: Enrollment 25

Chemoprevention and Carcinogenesis (Nutr 8617)

Gave three lectures on DNA adducts, repair and mutagenesis

Spring 2002, 2005: Enrollment ~6

Current Literature in Toxicology (PubH 8100-3/8161)

Coordinator

Spring 2001: Enrollment 13

Spring 2002: Enrollment 7

Fall 2003: Enrollment 3

Fall 2004: Enrollment 4

Fall 2006: Enrollment 4

Fall 2007: Enrollment 6

Fall 2010: Enrollment 3

Fall 2011: Enrollment 6

Fall 2012: Enrollment 7

Fall 2013: Enrollment 2

Fall 2014: Enrollment 3

Fall 2015: Enrollment 5

Fall 2016: Enrollment 4

Metabolomics (PubH 5160, now PubH 6160)

Sole Instructor

Spring 2005: Enrollment 11

Spring 2007: Enrollment 7

Spring 2008: Enrollment 7

Spring 2009: Enrollment 11
 Spring 2011: Enrollment 7
 Spring 2012: Enrollment 11
 Spring 2013: Enrollment 5

Systems Toxicology (PubH 6160)

Sole Instructor

Spring 2014: Enrollment 2
 Spring 2015: Enrollment 4
 Spring 2016: Enrollment 6
 Spring 2017: Enrollment 3

Chemical Aspects of Drug Metabolism and Bioactivation(MedC 8600)

Gave one lecture

Fall 2006: Enrollment 3

General Principals of Medicinal Chemistry (MedC 5700)

Gave 8 lectures

Fall 2007: Enrollment 10
 Fall 2010: Enrollment 9

Advanced Toxicology (PubH 8160)

Fall 2009: Enrollment 5 (co-taught with Elizabeth Wattenberg)
 Fall 2010: Enrollment 3 (co-taught with Elizabeth Wattenberg)
 Fall 2011: Enrollment 2 (co-taught with Elizabeth Wattenberg)
 Fall 2014: Enrollment 3.
 Fall 2015: Enrollment 3 (co-taught with Elizabeth Wattenberg)
 Fall 2016: Enrollment 3 (co-taught with Elizabeth Wattenberg)

Current Topics in Toxicology (PubH 8165)

Spring 2010: Enrollment 4 (Coordinated Student Presentations)
 Fall 2010: Enrollment 1 (Coordinated Guest Presentations)

ADVISING:

Graduate students

Student Name	Degree Sought	Major	Advisor's Role	Date of Degree Completion
Ann Johnson	MS	Environmental Health	Academic/Thesis Advisor	6/99
Jeremy Stuart	MPH	Environmental Health	Academic Advisor	8/00
Angela Preimesberger	MS	Environmental Health	Academic/Thesis Advisor	8/01
Eugenia Kliris	MPH	Environmental Health	Academic Advisor	8/02
Daniel Tranter	MPH	Environmental Health	Academic Advisor	6/02
Dawn Errede	Ph.D.	Environmental Health	Academic/Thesis Advisor	5/11
Michael Byrns	Ph.D.	Environmental Health	Academic/Thesis Advisor	6/05
Renee Mijal	Ph.D.	Environmental Health	Thesis Advisor	6/05
Elizabeth Thompson	MS	Biological Sciences	Advisor/Thesis Advisor	5/03
Marissa Lightbourne	MPH	Environmental Health	Advisor/Thesis Advisor	10/06
Thomas Higgins	MS	Environmental Health	Academic Advisor	9/06
Sing-Wei Ho	MPH	Environmental Health	Academic Advisor	8/06
Stephen LeMaster	MPH	Environmental Health	Academic Advisor	8/08
Anna Urban	MPH	Environmental Health	Academic Advisor	11/09
Anna Urban	PhD	Environmental Health	Academic/Thesis Advisor	1/12
Iman Hassan	MPH	Environmental Health	Thesis Advisor	8/07
Melinda Hexum	MS	Environmental Health	Academic Advisor	5/09

Jeffery Caudill	MS	Environmental Health	Academic Advisor	6/12
Martin Phillips	PhD	Medicinal Chemistry	Thesis Advisor	9/12
Brandy Kreuser	MPH	Environmental Health	Academic Advisor	10/14
Leah Brus	MPH	Environmental Health	Academic Advisor	5/12
Ashley Terrell	PhD	Environmental Health	Thesis Advisor	1/12
Karin Vineretsky	PhD	Environmental Health	Academic Advisor	11/14
Colin Owens	MPH	Environmental Health	Academic Advisor	4/14
Elizabeth Bell	MPH	Environmental Health	Academic Advisor	4/14
Ngozi Njoku	MPH	Environmental Health	Academic Advisor	4/16
Lindsey Spaude	MPH	Environmental Health	Academic Advisor	6/16
Jiahuan (Steve) Sun	MS	Environmental Health	Academic Advisor	12/14
Shaine Hartmann	MPH	Environmental Health	Academic Advisor	
Jianji Chen	MS	Environmental Health	Academic Advisor	5/15
Melissa O'Hehir	MS	Environmental Health	Academic Advisor	6/16
Paxia Her	MPH	Environmental Health	Academic Advisor	12/16
James Meinert	JD/MPH	Environmental Health	Academic Advisor	
Guole Shi	MPH	Environmental Health	Academic Advisor	

Undergraduate students

William Confers, American Health Foundation Summer Student Program, Summer 1989

Brooke Bloom, American Health Foundation Summer Student Program, Summer 1990

Ankur Patel, American Health Foundation Summer Student Program, Summer 1991

Ketaki Patel, American Health Foundation Summer Student Program, Summer 1993

Larry Balter, American Health Foundation Summer Student Program, Summer 1994

Urmi Desai, American Health Foundation Summer Student Program, Summer 1996

Michelle MacDonald, Independent Study, Marymount College, Fall Semester, American Health Foundation, 1995

Tamara Harms, Biology Colloquium, University of Minnesota, Winter Quarter 1998.

Diana Hargreaves, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 1998.

Laura Guengerich, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 1999.

Audra Agnelly, Internship, Macalester College January 1999.

Elizabeth Donaldson, University of Minnesota Chemistry Summer Undergraduate Research Program and Macalester College Honor's thesis advisor, 1999-2000.

Kristan Steffen, Biology Colloquium, University of Minnesota, Spring Semester 2000; UROP Grant 2001; Biochemistry Directed Studies Fall 2001-Spring 2002.

Selina Jaman, Biology Colloquium, University of Minnesota, Spring Semester 2000 and Chemistry Directed Studies, Fall Semester 2000.

Rebecca Krenz, Biochemistry Directed Studies, University of Minnesota, Fall Semester 2000.

Jacqueline Chan, Chemistry Directed Studies, University of Minnesota, Summer 2001 and Biochemistry Directed Studies Fall 2001- Spring 2002.

Katherine Rammer, University of Minnesota, UROP Grant 2002.

Lauren Bergerson, Directed Studies, University of Minnesota, Fall 2003.

Minda Olson, Directed Studies, University of Minnesota, Fall 2003-Spring 2004.

Patrice Kiiru, University of Minnesota Life Science Summer Undergraduate Research Program, Summers 2004, 2005.

Ahmed Uddin, Biology Colloquium, University of Minnesota, Spring Semester, 2007.

Carolyn Fisk, Directed Studies, University of Minnesota, Fall 2007-Spring 2008.

Jaye Gardiner, NorthStar Stem Alliance for Minority Participation, Macalester College, Summer 2009, Fall 2009.

Daniel Ressler, NorthStar Stem Alliance for Minority Participation, Macalester College, Summer 2009.

Jaye Gardiner, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2010.
Mailee Hunyh, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2010.
Sam Gonzalez, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2011.
Mildrede Bonglack, Masonic Cancer Center Health Disparities Internship Program, Summer 2011; UROP grant
Spring 2012.
Justin Peterson, Chemistry Directed Studies, Spring 2013.
Kunlin Wang, Chemistry Directed Studies, Spring 2013.
Thaddeus Schmitt, Biochemistry Directed Studies Spring 2014/ UROP grant summer 2014/Honors thesis.
Nicole Mandel, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2014.
Tia Eskridge, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2015.
Jenna Thomforde, University of Minnesota Life Science Summer Undergraduate Research Program, Summer 2016.
Ebisie Deressa, Masonic Cancer Center CURE Internship Program, April 2016 – August 2017.

M.S./MPH examining committees

Member, MS, Environmental Toxicology, Ann Johnson
Member, MPH, Environmental Toxicology, Jeremy Stuart
Member, MS, Environmental Toxicology, Angela Preimesberger
Member, MS, Environmental Toxicology, Sarah Northrup
Member, MS, Environmental Toxicology, Teresa Fick
Member, MPH, Environmental Health, Eugenia Kliris
Member, MPH, Epidemiology, Waseem Khaliq
Member, MPH, Epidemiology, Bijay Nair
Member, MS, Medicinal Chemistry, Rebecca Zeigel
Member, MS, Biological Sciences, Elizabeth Anderson
Member, MS, Medical Sciences, Yiyang Yang
Member, MPH, Epidemiology, Jeff Anderson
Member, MPH, Environmental Health, Stuart Cameron
Member, MPH, Epidemiology, Lucy Alderich
Member, MPH, Environmental Health, Kelly Lewis
Member, MPH, Environmental Health, Marissa Lightbourne
Member, MPH, Environmental Health, Misato Hirano
Member, MPH, Environmental Health, Iman Hassan
Member, MPH, Environmental Health, Majken Hall
Member, MS, Environmental Health, Melinda Hexum
Member, MS, Medicinal Chemistry, Lei Meng
Member, MS, Medicinal Chemistry, Katherine Pietsch
Member, MPH, Environmental Health, Ania Urban
Member, MS, Environmental Health, Brad Bagley.
Member, MPH, Environmental Health, Julia Well.
Member, MS, Environmental Health, Jeff Caudill.
Member, MPH, Environmental Health, Leah Gates.
Member, MS, Environmental Health, David Bell.
Member, MS, Environmental Health, David Dassenko.
Chair, MS, Environmental Health, Colin Owens.

Member, MPH, Environmental Health, Elizabeth Bell.
Member, MPH, Environmental Health, Natasha Cardinez-Singh.
Member, MPH, Environmental Health, Elizabeth Vold.
Member, MS, Masters of Biological Sciences, Tesha Alston.
Member, MPH, Environmental Health, Brandy Kreuser Fischer

Ph.D. examining committees

Hongliang Cai, Chemistry Department, Wake Forest University, April 24, 1998.
Shunan Li, Department of Environmental and Occupational Health, School of Public Health, University of Minnesota, 1998-1999.
Linda Von Weyarn, Department of Biochemistry, Molecular Biology, & Biophysics, University of Minnesota, 1999-2002.
Janel Warmka, Department of Environmental Health Sciences, University of Minnesota, 2000-2004.
Natarajan Kalyanaraman, Department of Medicinal Chemistry, University of Minnesota, 2002-2003.
Michael Byrns, Division of Environmental Health Sciences, University of Minnesota, 2003-2005
Renée Mijal, Division of Environmental Health Sciences, University of Minnesota, 2003-2005.
Dawn Errede, Division of Environmental Health Sciences, University of Minnesota, 2003-2011.
Nicholette Zeliadt, Division of Environmental Health Sciences, University of Minnesota, 2006-2010.
Sarah Gilpin, Division of Environmental Health Sciences, University of Minnesota, 2007-2010.
Ania Urban, Division of Environmental Health Sciences, University of Minnesota, 2007-2012.
Aaron Teitelbaum, Department of Medicinal Chemistry, University of Minnesota, 2009.
Martin Phillips, Department of Medicinal Chemistry, University of Minnesota, 2010-2012.
Ashley Terrell, Division of Environmental Health Sciences, University of Minnesota, 2010-2012.
Sarah Oppeneer, Division of Epidemiology, University of Minnesota, 2012-2014.
Manoj Chiney, Experimental and Clinical Pharmacology, University of Minnesota, 2012-2013.
Val Kramlinger, Department of Biochemistry, Molecular Biology and Biophysics, University of Minnesota, 2013.
Erik Carlson, Department of Pharmacology, University of Minnesota, 2015-present

Ph.D. Theses

Michael Byrns. Determination of the role of DNA alkylation by *cis*-2-butene-1,4-dial in furan-induced carcinogenesis. University of Minnesota, June 2005.
Renée Mijal. Gene-Environment Interactions: Is the repair of pyridyloxobutylguanine adducts modified by AGT genotype. University of Minnesota, June 2005.
Dawn Errede. Distribution of mycotoxins in fungal structures. University of Minnesota, May 2011.
Ashley Terrell. The mutagenic potential of furan and its metabolite *cis*-2-butene-1,4-dial. University of Minnesota, January 2012.
Anna Urban. Formation and repair of pyridyloxobutyl DNA adducts and their relationship to tumor yield in A/J mice. University of Minnesota, January 2012.
Martin Phillips. Characterization of the chemical properties of intermediates in furan metabolism. University of Minnesota, September 2012.

NATIONAL/INTERNATIONAL ACTIVITIES:

Editorial Activities:

Manuscript Reviewer for *Biochemistry*, *Bioorganic Chemistry*, *Cancer Letters*, *Cancer Research*, *Chemico-Biological Interactions*, *Drug Metabolism and Disposition*, *Chemical Research in Toxicology*, *Cancer Epidemiology*, *Biomarkers & Prevention*, *Environmental Toxicology*, *European Journal of Medicinal Chemistry*, *Free Radical Biology and Medicine*, *Journal of Medicinal Chemistry*, *International Journal of Cancer*, *Molecular Carcinogenesis*,

Mutation Research, Proceedings of the National Academy, USA, Pharmacogenetics and Genomics, Oncogene, Toxicology and Applied Pharmacology and Toxicological Sciences.

Member, Editorial Board, *Chemical Research in Toxicology*, 2002-2008.

Associate Editor, *Chemical Research in Toxicology*, 2013-present

Review Panels and Study Sections:

Member, Special Emphasis Panel for Grant Review, MEP Study Section, National Institutes of Health, August 1998.

Member, Special Emphasis Panel for Review of RFA 99-007, "Carcinogenicity of Drinking Water Disinfection By-Products," National Institute of Environmental Health Sciences, December 1999.

Reviewed faculty seed grant proposals for the Center in Molecular Toxicology, Vanderbilt University, February 2001.

Member, Special Review Committee, Pathology B Study Section, National Institute of Health, July 2001.

Member, Special Emphasis Panel, Pathology C Study Section, National Institutes of Health, October 2001.

Member, Special Review Committee, Study Section, National Institutes of Health, April 2002.

Member, Special Review Committee, Study Section, National Institutes of Health, July 2002

Ad Hoc member, Chemical Pathology Study Section, National Institutes of Health, October 2002.

Reviewer, U.S. Civilian Research and Development Foundation Cooperative Grants Program, 2003.

Ad hoc member, Cancer Etiology Study Section, National Institutes of Health, October 2003.

Reviewer, Alberta Heritage Foundation for Medical Research, Heritage Medical or Health Scientist Award Applications, Alberta, Canada, January 2005.

Ad hoc member, Cancer Etiology Study Section, National Institutes of Health, June 2005.

Member, Cancer Etiology Study Section, National Institutes of Health, 2005-2008.

Member, External Peer Review Panel, The toxicological review for the tetrahydrofuran human health assessment, Environmental Protection Agency, November 2007.

Member, Expert Panel, National Toxicology Program Review of Formaldehyde, National Institutes of Environmental Health Sciences, November 2009.

Member, Member Conflict: Carcinogenesis and Tumorigenesis Panel, National Institutes of Health, January 2010.

Member, Special Emphasis Panel, Oncology I - Basic Translational (OBT) Integrated Review Group, National Institutes of Health, August 2010.

Member, Superfund Basic Sciences Research Program Grants Review Committee, National Institutes of Environmental Health Sciences, October 2010.

Member, Biomarkers Grant Review Committee, National Institutes of Environmental Health Sciences, March 2011.

Member, Peer Review Committee, National Toxicology Program, National Institutes of Environmental Health Sciences, February 2012.

Chair, National Toxicology Program Board of Scientific Counselors, 2013-2016.

Member, Tobacco Control Grant Review Committee, National Institutes of Health, 2014.

Member, Tobacco Control Grant Review Committee, National Institutes of Health, 2016.

Scientific Organizations:

Committee Positions:

Chair, Bylaws Committee, Division of Chemical Toxicology (probationary), American Chemical Society, 1997-1998.

Member, Executive Committee, Division of Chemical Toxicology, American Chemical Society, 1997-1998.

Member and ACS Pacifichem 2000 liaison, Program Committee, Division of Chemical Toxicology, American Chemical Society, 1997-2000

Treasurer-elect, International Society for the Study of Xenobiotics, 2002-2003.

Councillor, Division of Chemical Toxicology, American Chemical Society, 2002-2004.

Treasurer, International Society for the Study of Xenobiotics, 2004-2005.

Chair, Finance Committee, International Society for the Study of Xenobiotics, 2006-2007.

Chair, Young Chemist Committee, Chemistry in Cancer Research, American Association for Cancer Research, 2006-2007.

Member, Young Chemist Committee, Chemistry in Cancer Research, American Association for Cancer Research, 2007-2008.

Chair, Nominations Committee, Division of Chemical Toxicology, American Chemical Society, 2007.

Member, Meeting Organizing Committee, 15th North American Meeting of the International Society for the Study of Xenobiotics, San Diego, CA, 2008.

Chair-elect, Division of Chemical Toxicology, American Chemical Society, 2008.

Chair, Division of Chemical Toxicology, American Chemical Society, 2009-2010.

Immediate Past Chair, Division of Chemical Toxicology, American Chemical Society, 2011-2012.

Member, Nominations Committee, Division of Chemical Toxicology, American Chemical Society, 2014-2015.

Chair, Nominations Committee, Division of Chemical Toxicology, American Chemical Society, 2016.

Meetings:

Session Chair, Division of Chemical Toxicology (probationary), American Chemical Society National Meeting, Orlando, FL., 1996.

Session Chair, Division of Chemical Toxicology (probationary), American Chemical Society National Meeting, Las Vegas, NV, 1997.

Session Chair, Division of Chemical Toxicology, American Chemical Society National Meeting, Boston, MA, 1998.

Poster judge at the 9th North American International Society for the Study of Xenobiotics Meeting, Oct 24-28, 1999, Nashville, TN.

Corresponding symposium co-organizer, "Chemical Perspectives on Human Cancer," Pacifichem 2000 Congress, Honolulu, Hawaii, December 2000

Poster judge for the Division of Chemical Toxicology at the American Chemical Society Meeting in Chicago, IL, August 2001.

Poster judge for the Division of Chemical Toxicology at the American Chemical Society Meeting in Boston, MA August 2002.

Member, Program Committee, Chemistry Subsection, American Association for Cancer Research, Washington DC, July 2003.

Co-Chair, Poster Discussion Session, "DNA adducts: Structures and consequences" American Association for Cancer Research, Toronto, Washington DC, July 2003.

Poster judge for the Division of Chemical Toxicology at the American Chemical Society Meeting in New York, NY August 2003.

Symposium co-organizer, "A systems biology approach to hormone active agents in the environment," Fall American Chemical Society Meeting, Philadelphia, PA, August 2004.

Judge, Young Investigator Awards, Division of Chemical Toxicology at the American Chemical Society Meeting in Boston, MA, August 2007.

Judge, Young Investigator Awards, Division of Chemical Toxicology at the American Chemical Society Meeting in Philadelphia, PA, August 2008.

Judge, Young Investigator Awards, Division of Chemical Toxicology at the American Chemical Society Meeting in Washington DC, August 2009.

Judge, Poster Awards, Division of Chemical Toxicology at the American Chemical Society Meeting in Denver CO, August 2011.

Discussion Leader, Carcinogen Metabolism and Bioactivation, Drug Metabolism Gordon Conference, Holderness School, Holderness, NH, July 2013.

CITY/STATE ACTIVITIES:

Collaborator, Science Education Partnership Award Grant, "Tissues of Life," Science Museum of Minnesota.
Conducted DNA spooling experiments, Cancer Center Research Fair as part of The March, Coming Together To Conquer Cancer, Mall of America, September 26, 1998.
Spoke to the Brooklyn Park Rotary Club about Cancer Prevention, July 19, 1999.
Spoke to high school students on Cancer Center field trip, October 11, 1999. Members of my laboratory conducted DNA spooling experiments for several groups touring the Cancer Center since 1999.
Participated in "Cancer and the Human Body" at the Science Museum of Minnesota on March 4, 2000 and March 16, 2001.
Participated in the "State of Minnesota Earth Day" at Olson Middle School, April 19, 2001 and at Earth Day 2002, Henry High School, Minneapolis, MN.
Organized DNA spooling experiment at Cancer Center Day at the Minnesota State Fair, 2000-2005.
Organized DNA spooling demonstration at School of Public Health Day at the Minnesota State Fair, 2001-2007.

UNIVERSITY ACTIVITIES:

General Activities:

Spoke with undergraduate summer students about the Division of EOH and public health careers, August 1998.
Spoke with students in the Biology Colloquium about my research and public health careers, November 3 and 9, 1998.
Participate in the Cancer Center Open House by running DNA spooling experiment, 1998-2003.
Spoke to Biology Sciences Student Association about the Division of Environmental and Occupational Health and public health careers, February 8, 1999.
Spoke to Biology Colloquium Students about research, October 12, 1999.
Participant, 2001-2002 Bush Early Career Teaching Program.

Committees:

Member, Teaching Committee, Division of Environmental and Occupational Health, 1998-1999.
Reviewer, Cancer Center Seed Grants, September 1998.
Member, Search Committee, Professor of Toxicology Position, Division of Environmental and Occupational Health, 1998-1999.
Member, Search Committee, Assistant Professor, Department of Medicinal Chemistry and Cancer Center, 1999.
Member, Search Committee, Assistant/Associate Professor, Industrial Health, Division of Environmental and Occupational Health, 1999.
Member, Student Committee, Division of Environmental and Occupational Health, 1999-2000.
Mentor for John Yick, President's Distinguished Faculty Mentor Program, 2000-2001.
Member, Awards Committee, Division of Environmental and Occupational Health, 2000-2002.
Chair, Laboratory Committee, Division of Environmental and Occupational Health, 2000-2010.
Member, Search Committee, Assistant Professor, Human Exposure, Division of Environmental and Occupational Health, 2000-2001.
Member, Faculty Advisory Committee, Division of Environmental and Occupational Health, 2000-2001.
Chair, Awards Committee, Division of Environmental Health Sciences, 2002-2005, 2007-2008.
Member, Research Committee, School of Public Health, 2001-2004, 2007-2010, 2010-2013. Chair, 2004, 2009.
Member, Public Health Informatics, School of Public Health, 2001-2003.
Member, Appointments, Tenure and Promotion Committee, School of Public Health, 2002-2004.
Member, Medicinal Chemistry Assistant Professor Search Committee, University of Minnesota, Fall 2002.
Member, TTURC Smoking Reduction Data and Safety Monitoring Board, University of Minnesota, 2003-2004.

Reviewer, TTURC pilot grants, University of Minnesota, June 2005.

Reviewer, Cancer Center Etiology / Prevention / Control Grant Proposals, Cancer Center, University of Minnesota, June 2005.

Member, School of Public Health, Recognition, Awards and Honors Committee, 2006-2008.

Interim Director of Graduate Studies, Division of Environmental Health Sciences, University of Minnesota, Fall 2008.

Member, Masonic Cancer Center, Science Council, 2009-present. Symposium subcommittee, Spring 2010.

Member, Faculty Research Development Grant Review Panel, University of Minnesota, November 2009.

Member, Minnesota Futures Grant Review Panel, University of Minnesota, May 2010.

Member, Carcinogenesis and Chemoprevention Seed Grant Review Committee, Masonic Cancer Center, University of Minnesota, November 2010.

Member, Search Committee, Assistant Professor, Division of Environmental Health Sciences and Masonic Cancer Center, 2011.

Member, Minnesota Futures Grant Review Panel, University of Minnesota, May 2011.

Member, Written Exam Committee, Department of Medicinal Chemistry, 2012-2015.

Reviewer, University of Minnesota Medical School Grant-writing course for junior faculty, January 2012.

Member, Strategic Planning Team, Division of Environmental Health Sciences, 2012-2013

Chair, American Cancer Society Institutional Research Grant Seed Grant Review Committee, University of Minnesota, 2012 – 2016.

Member, Junior Faculty Mentoring Team, Masonic Cancer Center, 2013-

Chair, Search Committee, Assistant Professor, Division of Environmental Health Sciences and Masonic Cancer Center, 2014.

Reviewer, University of Minnesota Undergraduate Research Opportunities Program Grants, 2014.

Reviewer, University of Minnesota Masonic Cancer Center Internal Grants, 2014.

Member, Appointments, Tenure and Promotion Committee, School of Public Health, 2014-2015.

Chair, Appointments, Tenure and Promotion Committee, School of Public Health, 2016.

ACTIVITIES AT OTHER ORGANIZATIONS:

Member, Graduate Instructional and Research Committee, University of California, San Francisco, 1982-1984.

Member, Radiation Safety Committee, American Health Foundation, 1990-1997.

Member, Treetops Day Care Center Steering Committee, American Health Foundation, 1991-1992.

Member, Biological and Chemical Safety Committee, American Health Foundation, 1993-1997.

Member, Seminar Committee, American Health Foundation, 1996-1997.