

# Roger A. Coulombe, Jr.

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## Personal

Born: June 12, 1954, Boston, MA Citizenship: USA

Family: Wife - Rebecca Lallman (Elementary School teacher); Sons - Roger 27, Evan 25, Alexander 21

## Professional Experience

Director, Graduate Program in Toxicology; 1995-present  
Professor, Utah State University, Logan, UT: 1993-present.  
Associate Professor, Utah State University, Logan, UT 1988-1993;  
Assistant Professor, Utah State University, Logan, UT 1984-1988;

Visiting Professor, School of Veterinary Medicine, Murdoch University, Perth, Western Australia, 1994-1995.

National Institutes of Health NRSA Postdoctoral Fellow in Biochemistry, Department of Internal Medicine, University of California, Davis, CA. 1982-1984.

## Education

Ph.D. Food Science/Toxicology (1982); NIH NRSA Predoctoral Awardee. Toxicology Section, Department of Food Science and Toxicology, Oregon State University, Corvallis. (George Bailey, advisor)

M.S. Microbiology (1979). Department of Bacteriology and Biochemistry, University of Idaho, Moscow. (Dick Heimsch, advisor)

B.S. Microbiology (1977). University of Idaho, Moscow.

## Refereed Publications

Guarisco, J.A., Hall, J.O., and R.A. Coulombe, Jr. (2008) Butylated hydroxytoluene chemoprevention of aflatoxicosis - effects on aflatoxin B<sub>1</sub> bioavailability, hepatic DNA adduct formation, and biliary excretion. *Food and Chemical Toxicology* 46: 3727-3731. (DOI: 10.1016/j.fct.2008.09.050)

Rawal, S., K.M. Mendoza Reed, K.M. and R.A. Coulombe, Jr. (2008). Structure, function, and genetic mapping of the Cytochrome P450A37 gene in the turkey (*Meleagris gallopavo*). *Cytogenetics and Genome Research* (in press)

Guarisco, J.A., Hall, J.O., and R.A. Coulombe, Jr. (2008) Mechanisms of butylated hydroxytoluene chemoprevention of aflatoxicosis - inhibition of aflatoxin B<sub>1</sub> metabolism. *Toxicology and Applied Pharmacology* 227: 339-346 (DOI:10.1016/j.taap.2007.11.017).

Watterson, T.L., Sorenson, J., Martin, R., and R.A. Coulombe, Jr. (2007). Effects of PM<sub>2.5</sub> Collected from Cache Valley Utah on Genes Associated with the Inflammatory Response in Human Lung Cells. *Journal of Toxicology and Environmental Health* 70:1731-1734 (DOI: 10.1080/15287390701457746).

Reed, K.M., Mendoza, K.M. and R. A. Coulombe, Jr. (2007). Structure and genetic mapping of the Cytochrome P450A5 gene in the turkey (*Meleagris gallopavo*). *Cytogenetics and Genome Research* 116: 104-109 (DOI:10.1159/000097426).

Guarisco, J.A., Hall, J.O., and R.A. Coulombe, Jr. (2007) Butylated hydroxytoluene reduces aflatoxin B<sub>1</sub> bioavailability and hepatic adduct formation in turkeys. In *Poisonous Plants: Global Research and Solutions* (K. Panter, T. Wierenga, J. Phister, eds.) CAB International, London. pp. 197-202.

Coulombe, R.A. and S.M. Yip. (2007) Heterologous expression of a cytochrome P450 from turkey liver that activates aflatoxin B<sub>1</sub>. In *Poisonous Plants: Global Research and Solutions* (K. Panter, T. Wierenga, J. Phister, eds.) CAB International, London. pp. 82-88

Yip, S.S.M. and R.A. Coulombe, Jr. (2006) Molecular cloning and expression of a novel cytochrome P450 from turkey liver with aflatoxin B<sub>1</sub> metabolizing activity. *Chemical Research in Toxicology* 19:30-37. [\[PDF\]](#)

Van Vleet, T.R., Watterson, T.L., Klein, P.J., and R.A. Coulombe, Jr. (2006). Aflatoxin B<sub>1</sub> alters the expression of p53 in cytochrome P450-expressing human lung cells. *Toxicological Sciences*. 89 (2), 399-407. [\[PDF\]](#)

Coulombe, R.A., Guarisco, J.A., Klein, P.J. and J.O. Hall (2005) Chemoprevention of aflatoxicosis in poultry by dietary butylated hydroxytoluene. *Animal Feed Science and Technology* 121: 217-225. [\[PDF\]](#)

Rieben, W.K., and Coulombe, R.A. (2004). DNA cross-linking by dehydromonocrotaline lacks apparent base sequence preference. *Toxicological Sciences* 82, 497-503. [\[PDF\]](#)

Coulombe, R.A. (2003) Pyrrolizidine alkaloids in foods. *Advances in Food and Nutrition Research* (S.L. Taylor, Ed.). Elsevier Science Ltd., Oxford, U.K. Volume 45, pp. 61-99. [\[PDF\]](#)

Coulombe, R.A., Klein, P.J. and J.O. Hall (2003). Butylated hydroxytoluene chemoprotection: Response to Williams. *Toxicology and Applied Pharmacology* 189:152. [\[PDF\]](#)

Klein, P.J. Van Vleet, T.R., Hall, J.O. and R. A. Coulombe, Jr. (2003). Effect of dietary butylated hydroxytoluene on aflatoxin B<sub>1</sub>-relevant metabolic enzymes in turkeys. *Food and Chemical Toxicology* 41:671-678. [\[PDF\]](#)

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Coulombe, R.A., and W. K. Rieben (2003). Lack of Apparent Base Sequence Preference of Activated Pyrrolizidine Alkaloid Cross-Links with DNA, in *Poisonous Plants and Related Toxins*, (T. Acamovic, C.S. Stewart and T.W. Pennycott eds.) CAB International, London. pp. 26-31.

Van Vleet, T R, Macé, K and R. A. Coulombe, Jr. (2002). Comparative Aflatoxin B<sub>1</sub> Activation and Cytotoxicity in Human Bronchial Cells Expressing Human CYPs 1A2 and 3A4. *Cancer Research* 62, 105-112. [\[PDF\]](#)

Van Vleet, T.R., Klein, P.J. and R. A. Coulombe, Jr. (2002). Metabolism and cytotoxicity of aflatoxin B<sub>1</sub> in cytochrome P-450-expressing human lung cells. *Journal of Toxicology and Environmental Health, Part A* 65: 853-67. [\[PDF\]](#)

Klein, P.J., Van Vleet, T.R., Hall, J.O. and R. A. Coulombe, Jr. (2002). Dietary butylated hydroxytoluene protects against aflatoxicosis in turkeys. *Toxicology and Applied Pharmacology* 182, 11-19. [\[PDF\]](#)

Klein, P.J., Van Vleet, T.R., Hall, J.O. and R. A. Coulombe, Jr. (2002). Biochemical factors underlying the age-related sensitivity of turkeys to aflatoxin B<sub>1</sub>. *Comparative Biochemistry and Physiology* 132, 193-201. [\[PDF\]](#)

Van Vleet, T.R., Bombick, D.W., and R.A. Coulombe, Jr. (2001) Inhibition of Human Cytochrome P450 2E1 Activity by Nicotine, Cotinine, and Aqueous Cigarette Tar Extract in vitro. *Toxicological Sciences* 64, 185-191. [\[PDF\]](#)

Van Vleet, T.R., Klein, P.J., and R.A. Coulombe, Jr. (2001). Metabolism of Aflatoxin B<sub>1</sub> by Normal Human Bronchial Epithelial Cells. *J. Toxicology and Environmental Health*, Part A, 63: 525-40. [\[PDF\]](#)

Coulombe, R.A. (2001) Antioxidants protect turkeys against toxicity of aflatoxin. *NRI Research Highlights*, National Research Initiative Competitive Grants Program, United States Department of Agriculture, Cooperative State Research, Education and Extension Service. No. 6. [\[PDF\]](#)

Klein, P.K., Kelly, J.N., Buckner, R., and R.A. Coulombe, Jr. (2000). Biochemical basis for the extreme sensitivity of poultry to aflatoxin B<sub>1</sub>. *Toxicology and Applied Pharmacology*. 165:45-62. [\[PDF\]](#)

Coulombe, R.A., Jr. (2000) Natural Toxins and Chemopreventives in Plants, In B. Helferich and C. Winter (eds.) *Food Toxicology*. CRC Press, Inc., Boca Raton, Fl. pp. 137-161. [\[PDF\]](#)

Coulombe, R.A. Jr., Drew, G.L., and F.R. Stermitz (1999). Pyrrolizidine alkaloids cross-link DNA with actin. *Toxicology and Applied Pharmacology* 154: 198-202. **"1999 Highlight Article."** [\[PDF\]](#)

Stegelmeier, B.L., Edgar, J.A., Colegate, S.M., Gardner, D.L., Schoch, T.K., Coulombe, R.A., Jr. and Molyneux, R.J. (1999). Pyrrolizidine alkaloids plants, metabolism and toxicity. *Journal of Natural Toxins* 8:95-116. [\[PDF\]](#)

Kim, H.Y., Stermitz, F.R., Li, J.K. and R.A. Coulombe, Jr. (1999). Comparative DNA cross-linking by activated pyrrolizidine alkaloids. *Food and Chemical Toxicology*. 37: 619-625. [\[PDF\]](#)

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Kelly, J.D., Guengerich, F.P., Eaton, D.L. and R.A. Coulombe, Jr. (1997) Activation of aflatoxin B<sub>1</sub> by human lung. *Toxicology and Applied Pharmacology*. 144:88-95. [\[PDF\]](#)

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Sharma, R.P. and R.A. Coulombe, Jr. (1996). Pharmacokinetics in risk assessment, (Chapter 7) In A.M. Fan and L.W. Chang (eds.) *Toxicology Risk Assessment*. Marcel Dekker, Inc., New York. pp. 81-99.

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Coulombe, R.A., Jr. (1994). "Non-Hepatic Effects and Biotransformations of Aflatoxin B<sub>1</sub>," in D.L. Eaton, and J.D. Groopman (eds.) *The Toxicology of Aflatoxins: Human Health, Veterinary and Agricultural Significance*. Academic Press, Orlando, FL. [\[PDF\]](#)

Coulombe, R.A., Jr. (1993). Biological Action of Mycotoxins. *J. Dairy Sci.* 76:880-891. [\[PDF\]](#)

Coulombe, R.A., Jr., J.M. Huie, R.P. Sharma and J.W. Huggins (1993). Pharmacokinetics of the antiviral agent carbocyclic 3-deazaadenosine. *Drug Metab. Dispos.* 21:555-559. [\[PDF\]](#)

Kim, H.Y., Stermitz, F.R., Wilson, D.W., Taylor, D. and R.A. Coulombe, Jr. (1993). Structural influences on pyrrolizidine alkaloid induced cytopathology. *Toxicol. Appl. Pharmacol.* 122: 61-69. [\[PDF\]](#)

Hsieh, G.C., R.P. Sharma, R.D. Parker and R.A. Coulombe, Jr. (1992). Immunological and neurobiochemical alterations induced by repeated oral exposure of phenol in mice. *Eur. J. Pharmacol.* 228:107-114. [\[PDF\]](#)

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Coulombe, R.A., J.M. Huie, R.W. Ball, R.P. Sharma and D.W. Wilson. (1991). Pharmacokinetics of Intratracheally-Administered Aflatoxin B<sub>1</sub>. *Toxicol. Appl. Pharmacol.* 109:196-206. [[PDF](#)]

Hincks, J.R., H.Y. Kim, H.J. Segall, R.J. Molyneaux, F.R. Stermitz and R.A. Coulombe, Jr. (1991). DNA cross-linking in mammalian cells by pyrrolizidine alkaloids: structure-activity relationships *Toxicol. Appl. Pharmacol.* 111:90-98. [[PDF](#)]

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Hsieh, G.C. R.P., Sharma, R.D. Parker and R.A. Coulombe, Jr. (1990). Evaluation of toluene exposure via drinking water levels of regional brain biogenic amines and their metabolites in CD-1 mice. *Ecotoxicol. Environ. Safety* 20:175-184. [[PDF](#)]

Coulombe, R.A., D.W. Reif, R.J. Keller, D.P. Briskin, S.D. Aust, W.R. Thornley, and R.P. Sharma. Vanadate stimulation of pyridine nucleotide oxidation in mammalian liver microsomal membranes in Simic, M.G., K.A. Taylor, J.F. Ward and C. von Sontag, (eds.) *Oxygen Radicals in Biology and Medicine*, Plenum Publishing Corporation, New York, 1989.

Keller, R.J., R.A. Coulombe, R.P. Sharma, T.A. Grover and L.H. Piette (1989). Importance of hydroxyl radical in the vanadium-stimulated oxidation of NADH. *Free Rad. Biol. Med.* 6:15-22. [[PDF](#)]

Reif, D.W., R.A. Coulombe and S.D. Aust (1989). Vanadate dependent NAD(P)H oxidation by microsomal enzymes. *Arch. Biochem. Biophys.* 270:137-143. [[PDF](#)]

Keller, R.J., R.A. Coulombe, R.P. Sharma, T.A. Grover and L.H. Piette (1989). Oxidation of NADH by vanadium in the presence of thiols. *Arch. Biochem. Biophys.* 271: 40-48. [[PDF](#)]

Hincks, J.R. and R.A. Coulombe (1989). Rapid analysis of DNA-DNA and DNA protein cross-links by gravity-flow alkaline elution. *Environ. Molec. Mutagen.* 13:211-217. [[PDF](#)]

Flora, S.J., R.A. Coulombe, R.P. Sharma and S.K. Tandon (1989). Influence of dietary protein deficiency on lead-copper interaction in rats. *Ecotox. Environ. Safety* 18: 75-82. [[PDF](#)]

Huie, J.M., R.P. Sharma and R.A. Coulombe. (1989). Diurnal alterations in regional brain catecholamines and indoleamines in the CD-1 mouse. *Comp. Biochem. Physiol.* 94C: 575-579.



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Bailey, G.S., D.E. Williams, J.S. Wicox, J.S., P.M. Loveland, R.A. Coulombe and J.D. Hendricks (1988). Aflatoxin B<sub>1</sub> carcinogenesis and its relationship to DNA adduct formation and adduct persistence in sensitive and resistant salmonid fish. *Carcinogenesis* 9:1919-1926.

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Jayasekara, S., D.B. Drown, R.A. Coulombe and R.P. Sharma (1988). Alteration of biogenic amines in mouse brain regions by alkylating agents I. Effects of aflatoxin B<sub>1</sub> (AFB<sub>1</sub>) on brain concentrations of monoamines and activities of metabolizing enzymes. *Arch. Environ. Contam. Toxicol.* 18:396-403. [\[PDF\]](#)

Margaretten, N.C., J.H. Hincks, R.P. Warren and R.A. Coulombe, Jr. (1987). Effects of phenytoin and carbamazepine in human natural killer cell activity and genotoxicity *in vitro*. *Toxicol. Appl. Pharmacol.* 87:10-17. [\[PDF\]](#)

Coulombe, R.A., D.P. Briskin, R.J. Keller, W.R. Thornley and R.P. Sharma (1987). Vanadate-dependent oxidation of pyridine nucleotides in rat liver microsomal membranes. *Archives Biochem. Biophys.* 255:267-273. [\[PDF\]](#)

Sharma, R.P., and R.A. Coulombe, Jr. (1987). Effects of repeated doses of aspartame on serotonin and its metabolite in various mouse brain regions. *Food Chem. Toxicol.* 25:565-568.

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Coulombe, R.A., G.S. Bailey, and J.E. Nixon (1984). Comparative activation of aflatoxin B<sub>1</sub> to mutagens by isolated hepatocytes from rainbow trout (*Salmo gairdneri*) and coho salmon (*Oncorhynchus kisutch*). *Carcinogenesis* 5:29-33. [\[PDF\]](#)

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Loveland, P.M., R.A. Coulombe, L.M. Libbey, N.E. Pawlowski, R.O. Sinnhuber and J.E. Nixon (1983). Identification and mutagenicity of aflatoxin M<sub>1</sub> produced by metabolism of aflatoxin B<sub>1</sub> and aflatoxinol by liver fractions from rainbow trout (*Salmo gairdneri*). *Food Chem. Toxicol.* 21:557-562. [\[PDF\]](#)

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Pollock, G.A., C.E. DiSabotino, R.C. Heimsch and R.A. Coulombe, Jr. (1982). Distribution, elimination and metabolism of <sup>14</sup>C-alternariol monomethylether in the rat. *J. Environ. Sci. Health B* 17:109-124. [\[PDF\]](#)



## Scientific Presentations

Rawal, S., and R. A. Coulombe, Jr. "Cloning, Expression, and Partial Characterization of Cytochrome P450 3A37 from Turkey Liver that Oxidizes Aflatoxin B<sub>1</sub>." Presented at the 45<sup>th</sup> annual meeting of the Society of Toxicology, Seattle, WA, March 2008.

Watterson, T.L., Hamilton, B., Martin, R.S. and R. A. Coulombe, Jr. "Urban Particulate Matter Activates Calpain and Triggers the Unfolded Protein Response" Presented at the 45<sup>th</sup> annual meeting of the Society of Toxicology, Seattle, WA, March 2008.

Coulombe, R.A., Rawal, S., and K.M. Reed. Genes Associated with Aflatoxin B<sub>1</sub> Sensitivity. Presented at the 11<sup>th</sup> International Congress of Toxicology, Montreal, Quebec, July 2007.

Coulombe, R.A., Reed, K.M., Genetic Map of the Cytochrome P450 Gene Associated with Aflatoxin B<sub>1</sub> Hypersensitivity in the Turkey (*Meleagris gallopavo*). Presented at the 46<sup>th</sup> Annual Meeting of the Society of Toxicology, Charlotte, NC, March 2007.

Reed, K.M. and R.A. Coulombe, Jr. The Cytochrome P4501A5 gene in the turkey (*Meleagris gallopavo*). Presented at the International Society for Animal Genetics conference, Porto Seguro, Brazil, August, 2006.

Coulombe, R.A. and S.M. Yip. "Cloning, Expression and Partial Characterization of a Novel Cytochrome P450 from Turkey Liver that Catalyzes Epoxidation of Aflatoxin B<sub>1</sub>." Presented at the 45<sup>th</sup> annual meeting of the Society of Toxicology, San Diego, CA, March 2006.

Guarisco, J.A., Hall, J.O., and R.A. Coulombe, Jr. "Butylated hydroxytoluene chemoprevention of aflatoxicosis in turkeys is dose-related" Presented at the 45<sup>th</sup> annual meeting of the Society of Toxicology, San Diego, CA, March 2006.

Watterson, T.L., Sorenson, J., Martin, R.S. and R. A. Coulombe, Jr. "Effects of PM2.5 Collected from Cache Valley Utah in Human Bronchial Epithelial Cells." Presented at the 44<sup>th</sup> annual meeting of the Society of Toxicology, San Diego, CA, March 2006.

Guarisco, J.A., Hall, J.O. and R. A. Coulombe, Jr. "Inhibition of AFB<sub>1</sub> activation and AFB<sub>1</sub>-DNA adduct formation by dietary butylated hydroxytoluene. Presented at the 43<sup>rd</sup> annual meeting of the Society of Toxicology, New Orleans, March 2005.

Watterson, T., Van Vleet, T.R. and R. A. Coulombe, Jr. "Effects of AFB<sub>1</sub> on expression of P53 and MDM2 and on apoptosis in human lung cells." Presented at the 43<sup>rd</sup> annual meeting of the Society of Toxicology, New Orleans, March 2005.

Guarisco, J.A., Hall, J.O., and R. A. Coulombe, Jr. "Butylated hydroxytoluene reduces aflatoxin B<sub>1</sub> bioavailability and hepatic DNA adduct formation in turkeys." Presented at the 7<sup>th</sup> International Symposium on Poisonous Plants. Logan, UT, June 2005.

Coulombe, R.A. and Yip, S.S.M. "Heterologous Expression of a cytochrome P450 from turkey liver that activates aflatoxin B<sub>1</sub>." Presented at the 7<sup>th</sup> International Symposium on Poisonous Plants. Logan, UT, June 2005.

"Chemoprevention by dietary butylated hydroxytoluene: inhibition of AFB<sub>1</sub> activation and AFB<sub>1</sub>-DNA adducts. International Congress of Toxicology, Tampere, Finland, August 2004.

"Paracelsus Goes To School: Toxicology Research." Society of Toxicology Annual Meeting, Salt Lake City, UT, March 11, 2003.

Van Vleet, T. R. and R. A. Coulombe, Jr. Aflatoxin B<sub>1</sub> alters expression of p53 and MDM2 in CYP 1A2 and 3A4-expressing human lung cells. Presented at the annual meeting of the American Association for Cancer Research, San Francisco, CA, April, 2002.

Guarisco, J.A., Klein, P.J. and R.A. Coulombe. Butylated hydroxytoluene inhibits aflatoxin B<sub>1</sub> activation and related metabolizing enzymes in turkey liver. Presented at the annual meeting of the Society of Toxicology, Nashville, TN, March 2002.

Coulombe, R.A., Klein, P.J. and J.O. Hall. Butylated hydroxytoluene protects against aflatoxicosis in turkeys. Presented at the 6<sup>th</sup> International Symposium of Poisonous Plants, Glasgow, Scotland, August, 2001.

Coulombe, R.A. and Rieben, W.K. Lack of apparent base sequence preference of activated pyrrolizidine alkaloid cross-links with DNA. Presented at the 6<sup>th</sup> International Symposium of Poisonous Plants, Glasgow, Scotland, August, 2001.

Van Vleet, T.R., Macé, K. and R. A. Coulombe, Jr. Aflatoxin B<sub>1</sub> activation in human bronchial cells expressing human CYP 1A2 and 3A4. Presented at the annual meeting of the Society of Toxicology, San Francisco, CA, March 2001

Klein, P.J. Hall, J.O. and R. A. Coulombe, Jr. Dietary butylated hydroxytoluene protects against aflatoxin B<sub>1</sub> toxicity in turkeys *in vivo*. Presented at the annual meeting of the Society of Toxicology, San Francisco, CA, March 2001.

Klein, P.J. Hall, J.O. and R. A. Coulombe, Jr Dietary butylated hydroxytoluene decreases the deleterious effects of aflatoxin b<sub>1</sub> in turkeys. Presented at the Mountain West Society of Toxicology Conference, Snowbird UT, September 14-15, 2000.

Van Vleet, T.R. Bombick, D. and R.A. Coulombe, Jr. Cytochrome P450 2E1 inhibition by nicotine, cotinine, and aqueous cigarette tar extract *in vitro*. Presented at the Mountain West Society of Toxicology Conference, Snowbird UT, September 14-15, 2000.

Klein, P.J., R.E. Buckner, and R.A. Coulombe, Jr. Modulation of glutathione S-transferases by dietary butylated hydroxytoluene in turkeys. Presented at the annual meeting of the Society of Toxicology, Philadelphia, March, 2000.

VanVleet, T.R., D.W. Bombick, and R.A. Coulombe, Jr. Inhibition of cytochrome P 450 2E1 activity by nicotine, cotinine and aqueous cigarette tar extract *in vitro*. Presented at the annual meeting of the Society of Toxicology, Philadelphia, March, 2000.

Klein, P.J., R.E. Buckner, and R.A. Coulombe, Jr. Biochemical factors involved in age-related sensitivity to aflatoxin B<sub>1</sub> in poultry. Presented at the annual meeting of the Society of Toxicology, New Orleans, March, 1999.

VanVleet, T.R., K. Mace, and R.A. Coulombe, Jr. Alterations in cytochrome P-450 expressing human lung cells after aflatoxin B<sub>1</sub> exposure. Presented at the annual meeting of the Society of Toxicology, New Orleans, March, 1999.

Rieben, W. K., and Coulombe, R.A. Lack of apparent base preference by activated pyrrolizidine alkaloid cross-links with DNA. Presented at the annual meeting of the American Association for Cancer Research, New Orleans, April, 1998.

VanVleet, T.R., K. Mace, and R.A. Coulombe, Jr. Metabolism and cytotoxicity of aflatoxin B<sub>1</sub> in genetically engineered human lung cells. Presented at the annual meeting of the Society of Toxicology, Seattle, March, 1998.

Klein, P.J., R.E. Buckner, M.R. Franklin, and R.A. Coulombe, Jr. Modulation of phase II enzymes through the addition of dietary antioxidants in poultry. Presented at the annual meeting of the Society of Toxicology, Seattle, March, 1998.

Smith, P.A., Bowerbank, C.R., Savage, P.B., Gardner, D.R., Drown, D.B., Lee, M.L., Alexander, W., Jederberg, W.W., Still, K.R., and R. A. Coulombe, Jr. Haptenation of oxidized resin acids. Presented at the annual meeting of the Society of Toxicology, Seattle, March, 1998.

Coulombe, R.A., Drew, G.L. and F.R. Stermitz. Molecular interactions of pyrrolizidine alkaloids with critical cellular targets. Presented at the fifth International Symposium on Poisonous Plants, San Angelo, TX, May, 1997.

Drew, G.L., Stermitz, F.R. and R.A. Coulombe, Jr. Activated pyrroles cross-link DNA with actin in mammalian cells. Presented at the annual meeting of the American Association for Cancer Research, San Diego, April, 1997.

Klein, P.J., J Kelly, R Buckner, and R. A. Coulombe, Jr. Metabolic factor underlying the extreme sensitivity of poultry to aflatoxin B<sub>1</sub>. Presented at the Society of Toxicology Annual Meeting, Cincinnati, March 1997.

VanVleet, T.R. and R.A. Coulombe, Jr. Carcinogen metabolism in normal human Bronchial epithelial (NHBE) cells with respect to aflatoxin B<sub>1</sub>. Presented at the Society of Toxicology Annual Meeting, Cincinnati, March 1997.

Klein, P.J., R Buckner, and R. A. Coulombe, Jr. Biochemical basis for the sensitivity of poultry to aflatoxin B<sub>1</sub>. Presented at Mountain West Society of Toxicology, Snowbird, UT, October 1996.

VanVleet, T.R. and R.A. Coulombe, Jr. Metabolism of aflatoxin B<sub>1</sub> by normal human bronchial epithelial cells. Presented at Mountain West Society of Toxicology, Snowbird, UT, October 1996.

Coulombe, R.A. Role of cytochromes P450 and glutathione S-transferases in chemical carcinogenesis. Presented at the annual meeting of the Australian Society for Biochemistry and Molecular Biology, Mundaring Weir, Western Australia. April, 1995

Kelly, J.D. and R.A. Coulombe Aflatoxin B<sub>1</sub> activation by human lung. Presented at the annual meeting of the American Association for Cancer Research, San Francisco, April, 1994.

Coulombe, R.A. , Kim, H.Y. and Stermitz, F.R. Structure-activity of pyrrolizidine alkaloid DNA cross-links. Presented at the 4th International Symposium on Poisonous Plants, Perth, Western Australia. September, 1993.

Kim, H.Y., Stermitz, F.R. and R.A. Coulombe, Jr. Pyrrolizidine alkaloid induced DNA cross-linking. Presented at the annual meeting of the Society of Toxicology, New Orleans, March, 1993, 13:348.

Coulombe, R.A. Pharmacokinetics of adenosine analogue antiviral agents. Presented at the U.S. Army Medical Research Institute of Infectious Diseases, Frederick MD. June 1993.

Coulombe, R.A., Sharma, R.P. and J.W. Huggins. Pharmacokinetics of the antiviral agent 3-deazaadenosine. Presented at the annual meeting of the Society of Toxicology, Seattle, February, 1992, 12: 551.

Kim, H.Y., Stermitz, F.R. and R.A. Coulombe, Jr. Characterization of cytopathology and DNA cross-linking by pyrrolizidine alkalooids. Presented at the annual meeting of the Society of Toxicology, Seattle, February, 1992, 12: 663.

Wilson, D.W., Harris, R.A. and R.A. Coulombe, Jr. Lung and liver lesions induced by multiple intratracheal instillations of aflatoxin B<sub>1</sub>. Presented at the annual meeting of the Society of Toxicology, Seattle, February, 1992, 12: 761.

Harris, R.A. Wilson, D.W. and R.A. Coulombe, Jr. Lung and liver cancer induced by intratracheal aflatoxin B<sub>1</sub>. Presented at the annual meeting of the American Association for Cancer Research, San Diego, May, 1992.

Kim, H.Y., Stermitz, F.R. and R.A. Coulombe, Jr. Characterization of pyrrolizidine alkaloid-induced DNA cross-linking in cellular and plasmid DNA. Presented at the 10th annual meeting of the Mountain-West Society of Toxicology, Logan, September 1992.

Azuka, C.E., Huie, J.M., Wilson, D.W. and R.A. Coulombe, Jr. Comparative action of intratracheal aflatoxin B<sub>1</sub> in two mammalian species. Presented at the Society of Toxicology Annual Meeting, Dallas, February, 1991, 11:966.

Coulombe, R.A., Azuka, C.E., Huie, J.M., Ball, R.W. and D.W. Wilson. Biotransformation and action of aflatoxin B<sub>1</sub> in mammalian airways. Presented at the annual meeting of the American Association for Cancer Research, Houston, May, 1991.

Ball, R.W., Huie, J.M. and R.A. Coulombe, Jr. Metabolic capabilities and aflatoxin B<sub>1</sub> metabolism in mammalian tracheal microsomal preparations. Presented at the Society of Toxicology Annual Meeting, Miami, 1990, 10:1037.

Wilson, D.W., Kelly, M. and R.A. Coulombe, Jr. Species comparison of the *in vivo* response of the bronchial epithelium to a single dose of aflatoxin B<sub>1</sub>. Presented at the Annual Meeting of the American College of Veterinary Pathologists, Phoenix, December 1990.

Ball, R.W., Wilson, D.W. and R.A. Coulombe. Comparative Action, DNA Binding and DNA Adduct Repair of Aflatoxin B<sub>1</sub> in Tracheal Explants From Four Mammalian Species. Presented at the Society of Toxicology Annual Meeting, Atlanta, GA, March, 1989, 9:866.

Kim, H.Y., Hincks, J.R., Huie, J.M., Yost, G.Y. and R.A. Coulombe, Jr. Deuterated 3-methylindole is less genotoxic than 3-methylindole. Presented at the Society of Toxicology Annual Meeting, Atlanta, GA, March, 1989, 9:616.

Coulombe, R.A., Hincks, J.R., Kim, H.-Y., Segall, H.J., Stermitz, F.R. and R.J. Molyneaux. Comparative DNA crosslinking abilities of a series of pyrrolizidine alkaloids in cultured bovine kidney cells. Presented at the 3rd International Symposium on Poisonous Plants, Logan, UT., July 1989.

Hincks, J.R., Kim, H.Y., Segall, H.J. and R.A. Coulombe. Structure-activity relationships of pyrrolizidine alkaloid-induced genotoxicity. Presented at the Society of Toxicology Annual Meeting, Dallas, TX, February, 1988.

Huie, J.M., Sharma, R.P. and R.A. Coulombe. Pharmacokinetic distribution of intratracheally administered microcrystalline and grain-particle-adsorbed aflatoxin B<sub>1</sub> in the rat. Presented at the Society of Toxicology Annual Meeting, Dallas, TX, February, 1988.

Sharma, R.P. and R.A. Coulombe. Regional brain amines influenced by continuous ethanol ingestion in mice. Presented at the Federation of American Societies for Experimental Biology Annual Meeting, May 1988.

Ball, R.W., Wilson, D.W. and R.A. Coulombe. Comparative Metabolism, DNA Binding and DNA adduct repair of aflatoxin B<sub>1</sub> in tracheal explants from three mammalian species. Presented at the Mountain West Society of Toxicology Annual Meeting, September, 1988.

Coulombe, R.A., Sharma, R.P. and J.M. Huie. Comparative pharmacokinetics of intratracheally and orally administered aflatoxin B<sub>1</sub> in the rat. Annual Meeting of the Society of Toxicology, Washington, D.C. 7:951, 1987.

Hincks, J.R. and R.A. Coulombe. Detection of DNA cross-linking by gravity-flow alkaline elution. Annual Meeting of the Society of Toxicology, Washington, D.C. 7:66, 1987.

Hincks, J.R., Coulombe, R.A., Stermitz, F.R., and R. Molyneux. Genotoxicity of pyrrolizidine and larkspur alkaloids detected by alkaline elution. Annual Meeting of the Society of Toxicology, Washington, D.C. 7:132, 1987.

Hsieh, G.C., Parker, R.D., Coulombe, R.A. and R.P. Sharma. Immunological and neurological evaluations of toluene toxicity in CD-1 mice. Annual Meeting of the Society of Toxicology, Washington, D.C. 7:990, 1987.

Coulombe, R.A., Reif, D.W., Keller, R.J., Briskin, D.P., Aust, S.D., Thornley, W.R., and R.P. Sharma. Vanadate stimulation of pyrimidine nucleotide oxidation in mammalian liver microsomal membranes. Proceedings of the Fourth International Congress on Oxygen Radicals, San Diego, CA. June 1987.

Coulombe, R.A., Reif, D.W., Aust, S.D., and R.P. Sharma. Studies on the vanadate-stimulated oxidation of pyridine nucleotides in rat liver microsomal membranes and purified microsomal reductases. presented at the Mountain-West Society of Toxicology annual meeting, Boulder, CO. October, 1987.

Hincks, J.R., Kim, H.Y. and R.A. Coulombe. Further characterization of the genotoxicity of a variety of pyrrolizidine alkaloids. presented at the Mountain-West Society of Toxicology annual meeting, Boulder, CO. October, 1987.



Coulombe, R.A., Sharma, R.P. and J.M. Huie. Alterations in regional brain neurotransmitter concentrations induced by aspartame--a time study. Annual Meeting of the Society of Toxicology, New Orleans, 1986, 6:81.

Margaretten, N.C., Hincks, J.R., Warren, R.P. and R.A. Coulombe. Phenytoin suppresses immune functions and causes damage to DNA in vitro and in vivo. Annual Meeting of the Society of Toxicology, New Orleans, 6:498, 1986.

Huie, J.M., Coulombe, R.A., and R.P. Sharma. Cyclic alterations of biogenic amines and metabolites in specific brain regions in mice. Annual Meeting of the Society of Toxicology, New Orleans, 6:788, 1986.

Keller, R.J., Briskin, D.P., Coulombe, R.A. and R.P. Sharma. Vanadate compounds stimulate NADH oxidation in the presence of thiols. Annual Meeting of the Society of Toxicology, New Orleans, 6:1068, 1986.

Hincks, J.R., and R.A. Coulombe. Comparison of ultraviolet-induced DNA damage and repair by sunlight and germicidal lamp. Annual Meeting of the Society of Toxicology, New Orleans, 6:1115, 1986.

Coulombe, R.A. Carcinogen metabolism in the pulmonary tract. Annual Meeting of the Mountain West Society of Toxicology, Logan, UT 1985.

Coulombe, R.A. and R.P. Sharma. Pharmacokinetic disposition of intratracheally and orally administered aflatoxin B<sub>1</sub> in the rat. Annual Meeting of the Society of Toxicology, San Diego, 1985, 5:979.

Yoneyama, M. Coulombe, R.A. and R.P. Sharma. Differential uptake, binding and metabolism of aflatoxin B<sub>1</sub> in primary fetal bovine kidney cells and Madin-Darby bovine kidney cells. Annual Meeting of the Society of Toxicology, San Diego, 1985, 5:838.

Hincks, J.R., and R.A. Coulombe. Gravity-flow alkaline elution: a rapid method to detect carcinogen-induced DNA strand breaks. Annual Meeting of the Society of Toxicology, San Diego, 1985, 5:892.

Coulombe, R.A., Briskin, D.P., Keller, R.J. and R.P. Sharma. Vanadate-dependent NAD(P)H oxidation in rat liver microsomal membranes. Presented at the Annual Meeting of the Federation of the American Societies for Experimental Biology, Anaheim, 1985, 44:1349

Sharma, R.P., and R.A. Coulombe. Aflatoxin-induced decline in regional catecholamine and indoleamine neurotransmitters in rat brain. Presented at the Annual Meeting of the Federation of the American Societies for Experimental Biology, Anaheim, 1985, 44:9076.

Coulombe, R.A., and R.P. Sharma. Perturbations of regional brain neurotransmitter levels by the artificial sweetener aspartame. Presented at the American Society of Pharmacology and Experimental Therapeutics, Boston, 1985, 27:931.

Coulombe, R.A., Wilson, D.W. and D.P.H. Hsieh. Action of aflatoxin B<sub>1</sub> in tracheal explants from Syrian hamster. Annual Meeting of the Society of Toxicology, Atlanta, 1984, 4:569.

Coulombe, R.A., Bailey, G.S. and J.E. Nixon. Activation of aflatoxin B<sub>1</sub> to mutagens by isolated hepatocytes from rainbow trout (*Salmo gairdneri*) and coho salmon (*Oncorhynchus kisutch*). Annual Meeting of the Society of Toxicology, 1983, Las Vegas 3:145.

Shelton, D.W., Coulombe, R.A. and J.E. Nixon. Effect of dose on the inhibition of carcinogenesis/mutagenesis by Aroclor 1254 in rainbow trout fed aflatoxin B<sub>1</sub>. Annual Meeting of the Society of Toxicology, 1983, Las Vegas, 3:585.

Coulombe, R.A. and R.C. Heimsch. Alternariol and alternariol monomethyl ether from *Alternaria solani* and related fungi. Presented at the Annual Meeting of the Federation of American Societies for Experimental Biology, Anaheim, March 1980, 39:621.

### **Invited-Sponsored Presentations**

“Expression of Genes Associated with the Inflammatory Response in Human Lung Cells Exposed to Cache Valley Particulate Matter.” Invited Presentation to the Utah Environmental Health Association, September, 2008.

“Food and Nutritional Toxicology Lecture Series: Food Safety from Farm to Fork.” Invited lecturer for 10-day short course to be held at University of Kuopio and University of Turku Finland, June 2008.

Genotyping Carcinogen Metabolism as a Predictor of Susceptibility: A Bird’s-Eye View. Presentation to Environmental Toxicology Program, University of Queensland, Brisbane Australia. July 4, 2008

“Urban Fine Particulate Matter Alters Expression of Genes Associated with the Inflammatory Response in Human Lung Cells.” Invited presentation to the Genes-to-Geosciences Program, MacQuarie University, Sydney, Australia. July 7, 2008.

“Turkey in the Straw: Genomic Approaches to Identify Markers for the Hypersensitivity of Poultry to Aflatoxin B<sub>1</sub>.” Invited presentation to the Molecular Cell Biology and Biotechnology Seminar Series, Virginia Bioinformatics Institute, Virginia Tech, Blacksburg, VA. February 1, 2008.

“Genomics to Increase Aflatoxin Resistance in Turkeys” presented at the USDA-NRI Animal Genome Principal Investigators Conference, January 11, 2008. San Diego, CA.

"A Genomic Approach to Increasing Aflatoxin B<sub>1</sub> Resistance in Turkeys" 56<sup>th</sup> Annual National Breeders Roundtable, Poultry Breeders of America. St. Louis, MO. May 3, 2007.

"Fine Particulate Matter Alters Expression of Genes Associated with the Inflammatory Response in Human Lung Cells" KTL - National Public Health Institute, Kuopio Finland. April 2, 2007.

"Characterizing Genes Associated with Aflatoxin B<sub>1</sub> Hypersensitivity And Chemoprevention In Turkeys" Invited symposium presentation, Plant and Animal Genomes Conference -XV. San Diego, January, 2007.

"Effects of Cache Valley PM<sub>2.5</sub> on Regulation of Genes Associated with the Inflammatory Response in Human Lung Cells." Affymetrix Gene Chip Symposium, Center for Integrated Biosystems, Utah State University, August 21, 2006.

"Molecular Mechanisms of Aflatoxin B<sub>1</sub> Hypersensitivity and Chemoprotection in Poultry," Invited seminar, Program in Molecular Biosciences, College of Veterinary Medicine, University of Minnesota. February 1, 2006.

"Food and Cancer: Molecular mechanisms, biomarkers and prevention." Invited lecturer for week-long short course, Department of Clinical Nutrition and Food & Health Research Centre, University of Kuopio, Kuopio Finland. August-September 2005.

"Modulation of Aflatoxin Toxicity with Antioxidants" Gordon Research Conference, Waterville, Maine, June 2005.

"Neutraceuticals as Double-Edged Swords: Weighing Benefits and Risks of Dietary Chemicals to Human Health," Society of Toxicology Annual Meeting, Baltimore, MD, March 2004.

"Toxicity and Chemoprevention of Aflatoxin B<sub>1</sub>" Mountain West Society of Toxicology Meeting, Breckenridge, CO, September, 2003.

"Dietary Cancer Chemoprevention," CSIRO Livestock Industries, Australian Animal Health Laboratory, Geelong, Victoria, Australia, August 2003.

"Transformed human cells for Environmental Cancer Risk Assessment," National Institute for Water and Atmospheric Research (NIWA), Hamilton, New Zealand, August 2003.

"Molecular Biomarkers for Environmental Carcinogens." Invited presentation, Interdisciplinary Program in Toxicology, Department of Physiology and Pharmacology, College of Veterinary Medicine, University of Georgia, May 2003.

Socrates Award Honorary Lecture. University of Idaho. December 2002.

"Molecular action of Dietary Carcinogens and Anticarcinogens." Invited seminar, Department of Molecular Biology and Biochemistry, University of Idaho. December 2002.

"Toxic compounds in Traditional Southwest Medicines," Montezuma Creek Community Health Center, Montezuma Creek, UT. October 2002.

"Clinical Relevance of Hepatotoxic Navajo Folk Medicines," Navajo Area Indian Health Service, Kayenta, AZ. October 2002.

"Pulmonary toxicology of aflatoxin B<sub>1</sub>." Invited presentation at the Mountain West Society of Toxicology Conference, Snowbird UT, September, 2000.

"Reducing Mycotoxin Risk in Food Supplies" Invited speaker at Biological Modeling Symposium, Cargill Inc.; Elk River, MN, January, 2000.

"Molecular Biomarkers for Exposure to DNA Cross-linking Agents," seminar to Division of Food Safety and Health, CSIRO, Geelong, Victoria, Australia, November 1999.

"Molecular mechanisms of DNA cross-linking compounds" seminar to Department of Chemistry, University of Montana, October 1998.

"Safety of Dietary Supplements" Annual Meeting of The Gerontological Society, Salt Lake City, UT, September 1997.

"Molecular interactions of activated pyrroles with nuclear DNA" To Institute of Animal Production and Processing, Division of Animal Health, CSIRO. Parkville, Victoria, Australia. September, 1995.

"Chemical carcinogenesis and anti-carcinogenesis." Invited presentation to the Department of Internal Medicine, School of Medicine, University of Western Australia, Perth, Western Australia. September, 1995.

"Biophysical studies on the cross-linking of activated pyrroles with nuclear DNA." Department of Biochemistry, University of Western Australia, Perth, Western Australia. July, 1995.

"Role of cytochromes P450 and glutathione S-transferases in chemical carcinogenesis." Invited plenary presentation at the annual meeting of the Australian Society for Biochemistry and Molecular Biology. Mundaring Weir, Western Australia. April, 1995.

"Pyrrolizidine alkaloid induced poisonings in livestock" Invited presentation to the School of Veterinary Studies, Murdoch University, Perth, Western Australia. April, 1995.

"Molecular Toxicology of Pyrrolizidine Alkaloids" Invited presentation to the Interdepartmental Program in Toxicology, University of California, Davis. January, 1994.

"Tracheal explant cultures as a model for lung carcinogenesis studies" Invited presentation at the 1992 World Congress on Cell and Tissue Culture, Washington D.C. June, 1992.

"Action of aflatoxin B<sub>1</sub> in lung airway cultures" Invited presentation at the 1992 World Congress on Cell and Tissue Culture, Washington D.C. June, 1992.

"Aflatoxins" Invited presentation at the Society of Toxicology-sponsored Symposium on Natural Toxins, Dallas, TX, February 25, 1991.

"Biological Action of Mycotoxins," Invited presentation at the Annual Meeting of the American Dairy Science Association, Logan, UT. August, 1991.

"Mechanisms of Cancer," Invited presentation to Industrial Toxicology course at the University of Utah, May, 1990.

"Natural Toxins in Food," Presentation at USU for 1990 Land Grant Days. September 1990.

"Genetic Toxicology," Invited presentation to Industrial Toxicology Short Course, University of Utah, Salt Lake City, UT. May 1987, 1988.

"Aflatoxin Biochemistry in Respiratory Tissues," Invited Presentation to the School of Medicine, Duke University, August, 1988.

"In Vitro Pulmonary Carcinogenesis Studies," Invited Workshop presentation at Battelle Pacific Northwest Laboratories, Richland, WA, September, 1988.

"Pulmonary Carcinogenesis Studies of Aflatoxin B<sub>1</sub>," Invited presentation to the Department of Bacteriology and Biochemistry, University of Idaho, September, 1988.

"An *In Vitro* Model of Pulmonary Carcinogenesis," Invited presentation at the AMC Cancer Research Center, Denver, CO, November, 1988.

"Mechanisms of Cancer," Invited presentation to Industrial Toxicology course at the University of Utah, May, 1989.

"Aspartame and Neurotransmitter Biochemistry," Honor Lecture, Sigma Xi Scientific Society. January 1986, Logan, UT.

Testimony on Food Safety Issues, Committee for Labor and Human Resources, United States Senate, Washington, D.C. February, 1986.

"Neurobiochemical Effects of Aspartame," Invited presentation to the US Food and Drug Administration, Washington, D.C. February, 1986.

"Studies on Aspartame," Annual Conference on Current Concerns on Toxicity, July 1985, San Francisco.

"Pulmonary Metabolism of Carcinogens," Presentation to the Departments of Biochemical Pharmacology and Toxicology, University of Utah, May 1985.

"Frontiers in Research," Presentation to students in the USU honors program, November, 1985.

### **Grants, Contracts and Awards**

National Research Initiative, Competitive Grant, USDA (Principal Investigator) "Genomics to Increase Aflatoxin Resistance in Turkeys" 2006-04819 \$449,302, 1/07 - 12/10.

Marriner S. Eccles Charitable Foundation (Principal Investigator) "For a Healthier Utah - Determining Health Risks Associated with Particulate Air Pollution," \$15,000, 07/08 - 06/09.

Marriner S. Eccles Charitable Foundation (Principal Investigator) "For a Healthier Utah - Determining Health Risks Associated with Particulate Air Pollution," \$18,000, 07/07 - 06/08.

Community/University Research Initiative (Principal Investigator). "Improving health through probiotic *Lactobacillus*." \$15,068. 05/07- 06/08.

Utah Agricultural Experiment Station Grant (Principal Investigator) "Reducing the Impacts of Agricultural Toxins." UTA 126; \$15,000/year, 7/07-6/12.

USDA-CSREES Multi-State Regional Project W-2122 (Co-Investigator) "Beneficial and Adverse Effects of Food-Borne Bioactive Compounds on Human Health and Food Safety." 10/07 - 09/12

Marriner S. Eccles Charitable Foundation (Principal Investigator) "For a Healthier Utah - Determining Health Risks Associated with Particulate Air Pollution," \$18,000, 07/06 - 06/07.

Center for Integrated Biosystems, Utah State University. Bioinformatic Profiling of Responses to Urban Air—A Multi-disciplinary Study (Principal Investigator). \$24,975, 07/06 - 06/07.



Marriner S. Eccles Charitable Foundation (Principal Investigator) "For a Healthier Utah – Determining Health Risks Associated with Particulate Air Pollution," \$18,000, 07/05 – 06/07.

National Research Initiative, Competitive Grant, USDA (Principal Investigator) "Chemoprotection of aflatoxicosis by dietary antioxidants," 02-35204-12294; \$293,750, 09/02- 09/07.

Marriner S. Eccles Charitable Foundation (Principal Investigator) "For a Healthier Utah – Determining Health Risks Associated with Particulate Air Pollution," \$55,000, 07/04 – 06/05.

Community/USU Research Initiative Grant, (Principal Investigator) "Improving Poultry Health by Developing Chemopreventive Feed Additives," \$18,500, 07/04 -06/05.

Center for Integrated Biosystems, Graduate Student Fellowship Award. \$16,000; 11/04-10/05.

Center for Integrated Biosystems, Affymetrix Chip Competitive Award. \$5,575; 11/04

National Research Initiative, Competitive Grant, USDA (Principal Investigator) "Preventing mycotoxin disease in poultry by dietary induction of glutathione S-transferases," 970-3081; \$168,500, 10/97-12/01.

W.G. Swanson Foundation: (Principal Investigator). "Toxins and Medicines from Utah Plants." \$20,000. 11/99-10/02.

Utah Agricultural Experiment Station Grant (Principal Investigator) "Mechanisms of Action of Toxicants and Chemoprotectants," UTA 126; \$15,000/year, 7/02-6/07.

National Research Initiative, Competitive Grant , USDA (Principal Investigator). Increasing detoxification in poultry by dietary modification." 98-3754. \$29,925, 10/98-9/99.

National Research Initiative, Competitive Grant, USDA (Principal Investigator). "Immunological Detection of Pyrrolizidine Alkaloids in Animal Products. AS79. \$4,950, 10/99-9/00.

Willard L. Eccles Charitable Foundation Grant: (Principal Investigator) "Protecting Utah's Environment." Student fellowship. \$92,100. 4/99-4/04.

Willard L. Eccles Charitable Foundation Grant: (Principal Investigator) "Improve Native American Health Through Identification and Control of Natural Toxins." \$104,000. 12/00-present.

Higher Education Technology Initiative, State of Utah. "Web-based multimedia learning modules for molecular biology. \$10,000. 6/97-5/98

Pacific Egg and Poultry Association. "Improving Health of Poultry through Dietary Interventions." \$2,500. 8/97-7/98.

RJR Nabisco Student Fellowship in Toxicology. \$12,000/year (for student training).

Western Alliance to Expand Student Opportunities (WEASO). Summer toxicology fellowship. \$2,000. 6/98-9/98.

Utah Higher Education Technology Initiative. \$10,000. 2/97.

American Lung Association Grant (Co-Investigator: P.I. Dennis Wilson) "Glutathione S-transferases in the lung," \$50,000; 5/92-5/94.

Utah Turkey Marketing Board. "Increasing resistance of turkeys to aflatoxins through dietary interventions." \$5,000/ year. 6/96-5/98.

U.S. Public Health Service Grant, National Institutes of Health, NIEHS (Principal Investigator) "Pulmonary Toxicology of Aflatoxin B<sub>1</sub>," RO1 ES04813; \$449,591, 9/90-3/96.

U.S. Public Health Service Grant, National Institutes of Health, NIEHS (Principal Investigator) "Pulmonary Toxicology of Aflatoxin B<sub>1</sub>," RO1 ES03591; \$30,000, 4/84 -10/86.

Utah State University/Mineral Lease Fund. "Engineering Mycotoxin-Resistant Poultry" \$14,300. 1994-1995.

U.S. Department of Defense, U.S. Army Medical Research Institute of Infectious Diseases (Principal Investigator) "Preclinical Pharmacology of Antiviral Agents," DAMD17-90-C-0108, \$548,910, 7/90-12/93.

U.S. Public Health Service (National Institutes of Health): Biomedical Research Support Grant. (Principal Investigator). 1991 (\$17,091).

U.S. Public Health Service (National Institutes of Health): Biomedical Research Support Grant. (Principal Investigator). 1990 (\$12,890);

U.S. Public Health Service (National Institutes of Health): Biomedical Research Support Grant. (Principal Investigator). 1990 (\$7,900).

U.S. Public Health Service (National Institutes of Health): Biomedical Research Support Grant. (Principal Investigator.) 1989 (\$18,000).

U.S. Public Health Service (National Institutes of Health): Biomedical Research Support Grant. (Principal Investigator.) 1986 (\$21,000).

Center for Biotechnology, Utah State University. "Characterization of Pyrrolizidine Alkaloid-Induced DNA Cross-Links," (Principal Investigator) \$14,950 10/89-9/90.

Center for Biotechnology, Utah State University. "Sequence-Specificity of Aflatoxins in Cellular Oncogenes," (Principal Investigator) \$14,298, 10/87-9/88.

American Heart Association. "Interactions of Aspartame and Antidepressant Drugs," (Principal Investigator) \$11,500, 7/86-10/88.

University Faculty Research Grant, Utah State University, (Principal Investigator); \$16,000, 6/85-7/87.

Utah Turkey Marketing Board (Co-P.I.): "Immunosuppression in Turkey Poults by Aflatoxin B<sub>1</sub>"; \$9,000, 5/87-6/88.

U.S. Public Health Service, National Institutes of Health, NIHLB. National Research Service Award (Postdoctoral Fellowship). Pulmonary Section, Department of Internal Medicine, University of California, Davis School of Medicine, 1982-1984.

U.S. Public Health Service, National Institutes of Health. NIEHS Predoctoral training fellowship; Toxicology section, Oregon State University, 1979-1982.

### **Professional Activities, Honors and Recognition**

Faculty Library Award, Utah State University, October 2007.

External Departmental Review Committee, USDA-CSREES, Department of Environmental and Molecular Toxicology, Oregon State University, September, 2002.

USDA-CSREES Food Safety Technical and Advisory Committee: *Beneficial and Adverse Effects of Foodborne Bioactive Compounds on Human Health and Food Safety* 1985-present

Socrates Honorary Award. University of Idaho. December 2002.

Faculty member, Western Alliance to Expand Student Opportunities (WAESO).

Member, Society of Toxicology

Member, American Association for Cancer Research

Member, Food Safety Specialty Section, Society of Toxicology.

Member, International Congress of Toxicology

1999 Highlight Paper: Coulombe, R.A. Jr., Drew, G.L., and F.R. Stermitz--Pyrrolizidine alkaloids cross-link DNA with actin. *Toxicology and Applied Pharmacology* 154: 198-202.

Symposium Organizer: "Tissue Culture Methods for Lung Toxicity" at the 1992 World Congress on Cell and Tissue Culture, Washington, D.C. June, 1992.

Molecular Biology/Toxicology Grant Review Committee, NCI, National Institutes of Health, 1993, 1997, 2000.

Special Study Section, Toxicology Grant Review Committee, NIEHS. National Institutes of Health. 1991.

Special Study Section, Pharmacology Grant Review Committee, NIAID, National Institutes of Health. 1991.

Regular reviewer for National Institutes of Health SBIR grant program.

Regular reviewer for USDA NRI-Competitive and USDA-SBIR Grants program, 1996-present

Regular reviewer for USDA Wheat and Barley Scab Initiative Grants program, 2005-present

Co-authored paper awarded "**Best Presentation**," (Metals subsection) 25th Annual Meeting of the Society of Toxicology, New Orleans, March, 1986.

National Research Service Award, National Institutes of Health. Postdoctoral Fellowship. Department of Internal Medicine, University of California, Davis. 1982-1984

National Research Service Award, National Institutes of Health. Pre-Doctoral Fellowship. Oregon State University, Corvallis. 1979-1982.

**Editorial Activities:** Regular reviewer for these journals

*Carcinogenesis*  
*Toxicology and Applied Pharmacology*  
*Antiviral Chemistry and Chemotherapy*  
*Cell Biology and Toxicology*  
*Environmental Health Perspectives*

*Biochemical Pharmacology*  
*Journal of Natural Toxins*  
*Food and Chemical Toxicology*  
*Biochemical Toxicology*  
*American Journal of Physiology*

*Chemical Research in Toxicology*  
*Journal of Agricultural and Food Chemistry*  
*Chemico-Biological Interactions*

*Toxicology*  
*Toxicological Sciences*  
*Journal of Nutrition*

### **Other Professional Activities**

Consultant in Environmental Toxicology, Risk Assessment, Environmental Risk Assessment, Cancer Epidemiology, Agricultural Toxicology, Food Safety and Food Microbiology. *Pro bono* environmental consulting for the Sierra Club.

### **Administrative Experience**

Director, Interdepartmental Graduate Program in Toxicology (1995-present). Roles include: planning and overseeing student recruitment, faculty recruitment, curriculum coordination, program development, facilitating development of new courses, strategic planning, tracking applications to the program, and tracking student progress.

## Graduate Students Mentored

Todd Watterson, PhD Toxicology; completion March 2008  
John Guarisco, PhD Toxicology, 2007  
Sumit Rawal, PhD Candidate in Toxicology  
Shalini Minocha, MS Candidate in Toxicology  
Patrick Klein, PhD Toxicology /Molecular Biology, 2002  
Terry VanVleet, PhD Toxicology/Molecular Biology, 2001  
J. Michael Eichelberger, PhD Toxicology/Molecular Biology, 1998  
Gail Drew, MS Toxicology/Molecular Biology, 1997  
Hea-Young Kim, PhD Toxicology, 1994  
R. Wayne Ball, PhD Toxicology, 1989  
Jeffrey R. Hincks, PhD Toxicology, 1987

## Current Community Activities

Reading and literacy tutor - Cache Valley Literacy.

## Personal Interests and Activities

Guitar, swimming, skiing, reading, bicycling, gardening, gourmet cooking, wines.

## REFERENCES

<b>George S. Bailey, Ph.D., Distinguished Professor</b>	<b>Leonard F. Bjeldanes, Professor</b>
Department of Environmental and Molecular Toxicology Oregon State University Corvallis, OR 97331 <a href="mailto:george.bailey@orst.edu">george.bailey@orst.edu</a> 541.737.3164	Department of Nutritional Sciences University of California Berkeley, CA 94720 <a href="mailto:lfb@nature.berkeley.edu">lfb@nature.berkeley.edu</a> 510. 642.1610

<b>Steven D. Aust, Ph.D., University Professor</b>	<b>Jim Pestka, Ph.D. Professor</b>
Department of Chemistry and Biochemistry Utah State University Logan, UT 84322-4705 <a href="mailto:sdaust@cc.usu.edu">sdaust@cc.usu.edu</a> 435.797.2730	Department of Food Science & Human Nutrition 234A Trout Food Science Bldg. Michigan State University East Lansing, MI 48824-1224 <a href="mailto:pestka@msu.edu">pestka@msu.edu</a> 517.353.1709



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