

PERSONAL DATA

June 2007

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EDUCATION

Graduate Program in Pharmacology and Toxicology 1979-1982
Department of Pharmacology
College of Medicine
University of Arizona Health Sciences Center
Tucson AZ 85724
Coadvisors: Drs. Thomas F. Burks and Paul R. Marques
Doctor of Philosophy Degree (Pharmacology) awarded August 1982

Addiction Studies Program 1977-1979
School of Health Related Professions
University of Arizona
Tucson AZ 85724
Advisor: Dr. Cleamond D. Eskelson
Master of Science Degree (Addiction Studies) awarded Dec 1980

College of Liberal Arts 1966-1970
University of Arizona
Tucson AZ 85724
Bachelor of Science Degree (Zoology/Chemistry) awarded May 1970

EMPLOYMENT HISTORY

Professor and Director of Toxicology Research Department of Pharmacology and Toxicology Boonshoft School of Medicine Wright State University 45435	2001-present
Senior Scientist III/Dept. Manager Geo-Centers Inc. Operational Toxicology Branch Wright Patterson AFB, OH 45433	1995-2001
Director of Research Deputy Director Toxicology Division Armstrong Laboratory Wright Patterson AFB, OH 45433	1993-1995 1989-1993
Director of Aerospace Research Chief of Life Sciences/Human Systems European Office of Aerospace Research & Development Air Force Office of Scientific Research, FPO NY 09510	1987-1989 1986-1989
Research Pharmacologist, Biomedical Science Corps Armstrong Aerospace Medical Research Laboratory Wright-Patterson AFB OH 45433-6573	1982-1986
Aircraft Maintenance Officer Arizona Air National Guard P.O. Box 11037 Tucson AZ 85743	1977-1982
Instructor Weapons Systems Officer F4-E Fighter Aircraft U.S. Air Force	1971-1977

HONORS, AWARDS AND FELLOWSHIPS

Fulbright Senior Specialists candidate J. William Fulbright Foreign Scholarship Board	2007
Research Travel Grant Award Wright State University International Symposium on Systems Biology, Yokohama, Japan 6-13 October	2006

Poster award Biological Modeling Specialty Section Society of Toxicology (The Toxicologist p. 434, 2006)	2006
Member, TLV [®] Chemical Substances Committee American Congress of Governmental Industrial Hygienists	2005
Member, Committee on Toxicology, National Research Council	2004
Certificate of Appreciation Board on Environmental Studies and Toxicology The National Academies	2000
Fellow, Academy of Toxicological Sciences	1999
First Place Poster Annual Science Presentation Day Tri-Service Toxicology (The Toxicologist 36(1):187, 1997)	1997
Excellence Award for Science & Technology Achievement Toxicology Division Air Force Research Laboratory	1995
Second Place Poster Annual Science Presentation Day Tri-Service Toxicology (The Toxicologist 14:40, 1994)	1994
Directors Award Innovative Management Team in the Triservice Arena Armstrong Laboratory	1994
Paper of the Year Midland Chapter <i>Sigma Xi</i> , The Scientific Research Society of North America (<i>Toxicol. Appl. Pharmacol.</i> 95:185-199, 1988)	1988
USAF Patent Award	1986
Paper of the Year Inhalation Specialty Section Society of Toxicology (<i>Toxicol. Appl. Pharmacol.</i> 79:150-158, 1985)	1985

PEER-REVIEWED ARTICLES

- McDougal, J.N., P.R. Marques and T.F. Burks: Age-Related Changes in Body Temperature Responses to Morphine in Rats. *Life Sci.* 27:2679-2685 (1980).
- McDougal, J.N., P.R. Marques and T.F. Burks: Reduced Tolerance to Morphine Thermoregulatory Effects in Senescent Rats. *Life Sci.* 28:137-145 (1981).
- Pedigo, N.W., J. Schoemaker, M. Morelli, J.N. McDougal, J.B. Malick, T.F. Burks and H.I. Yamamura: Benzodiazepine Receptor Binding in Young, Mature and Senescent Rat Brain and Kidney. *Neurobiology of Aging* 2:83-88 (1981).
- DiRenzo, A.B., A.J. Gandolfi, I.G. Sipes and J.N. McDougal: Effects of Senescence on the Bioactivation of Aliphatic Halides. *Res. Comm. Chem. Path. Pharm.* 36:493-502 (1982).
- McDougal, J.N., P.R. Marques and T.F. Burks: Restraint Alters the Thermic Responses to Morphine by Postural Interference. *Pharmacol. Biochem. Behav.* 18:495-499 (1983).
- Marques, P.R., R.L. Spencer, T.F. Burks and J.N. McDougal: Behavioral Thermoregulation, Core Temperature, and Motor Activity: Simultaneous Quantitative Assessment in Rats after Dopamine and Prostaglandin E1. *Behavioral Neuroscience* 98(5):858-867 (1984).
- McDougal, J.N., M.S. Miller, T.F. Burks and D.L. Kruegen: Age-Related Changes in Colonic Function in Rats. *Am. J. Physiol.* 247:G542-G546 (1984).
- McDougal, J.N., G.W. Jepson, H.J. Clewell III and M.E. Andersen: Dermal Absorption of Dihalomethane Vapors. *Toxicol. Appl. Pharmacol.* 79:150-158 (1985).
- McDougal, J.N., G.W. Jepson, H.J. Clewell III, M.G. MacNaughton and M.E. Andersen: A Physiological Pharmacokinetic Model for Dermal Absorption of Vapors in the Rat. *Toxicol. Appl. Pharmacol.* 85:286-294 (1986).
- Reitz, H.R., J.N. McDougal, M.W. Himmelstein, R.J. Nolan, and A.M. Schumann: Physiologically-Based Pharmacokinetic Modeling with Methylchloroform: Implications for Interspecies, High Dose/Low Dose, and Dose Route Extrapolations. *Toxicol. Appl. Pharmacol.* 95:185-199 (1988).
- McDougal, J.N., G.W. Jepson, H.J. Clewell III, M.L. Gargas, and M.E. Andersen: Dermal Absorption of Organic Chemical Vapors in Rats and Humans. *Fund. App. Tox.* 14:299-308 (1990).

Morgan, D.L., S.W. Cooper, D.L. Carlock, J.J. Sykora, B. Sutton, D.R. Mattie and J.N. McDougal: Dermal Absorption of Neat and Aqueous Volatile Organic Chemicals in the Fischer 344 Rat. *Environ. Res.* 55:51-63 (1991).

McDougal, J.N. and D.E. Dodd: Air Force Approach to Risk Assessment for Halon Replacements. *Toxicology Lett.*, 68:31-35 (1993).

Liron, Z., R.W. Wright, and J.N. McDougal: Water Diffusivity in Porcine Stratum Corneum Measured by a Thermal Gravimetric Analysis (TGA) Technique. *J. Pharm. Sci.*, 83(4):457-462 (1994).

Liron, Z., H.J. Clewell, and J.N. McDougal: Kinetics of Water Vapor Sorption in the Porcine Stratum Corneum. *J. Pharm. Sci.*, 83(5):692-698 (1994).

Mattie, D.R., G.D. Bates, Jr, G.W. Jepson, J.W. Fisher, and J.N. McDougal: Determination of Skin:air Partition Coefficients for Volatile Chemicals: Experimental Method and Applications. *Fundam. Appl. Toxicol.*, 22:51-57 (1994).

A.M. Jarabek, J.W. Fisher, R. Rubenstein, J.C. Lipscomb, R.J. Williams, A. Vinegar, and J.N. McDougal: Mechanistic Insights Aid in the Search for CFC Substitutes: Risk Assessment of HCFC-123 as an Example. *Risk Anal.*, 14:231-250 (1994).

D.R. Mattie, J.H. Grabau, and J.N. McDougal: Significance of the Dermal Route of Exposure to Risk Assessment. *Risk Anal.*, 14:277-284 (1994).

Vinegar, A., R.J. Williams, J.W. Fisher, and J.N. McDougal: Dose Dependent Metabolism of 2,2-Dichloro-1,1,1-Trifluoroethane (HCFC-123): A Physiologically Based Pharmacokinetic Model in Male Fischer 344 Rat. *Toxicol. Appl. Pharmacol.*, 129:103-113 (1994).

Islam, M.S., L. Zhao, J.N. McDougal, and G.L. Flynn: Uptake of Chloroform by Skin during Short Exposures to Contaminated Water. *Risk Anal.*, 15(3):343-352 (1995).

Bookout Jr., R.L., C.R. McDaniel, D.W. Quinn, and J.N. McDougal: Multilayered Dermal Subcompartments for Modeling Chemical Absorption, *SAR and QSAR in Environmental Research*, 5:133-150 (1996).

Williams, R.J., A. Vinegar, J.N. McDougal, A.M. Jarabek, and J.W. Fisher: Rat to Human Extrapolation of 2,2-Dichloro-1,1,1-Trifluoroethane (HCFC-123) Kinetics: A Corollary Approach to Physiologically Based Pharmacokinetic Modeling. *Fund. Appl. Toxicol.*, 30:55-66 (1996).

Islam, M.S., L. Zhao, Z. Zhou, L. Dong, J. N. McDougal and G.L. Flynn. Systemic Uptake and Clearance of Chloroform by Hairless Rats Following Dermal Exposure: I. Brief Exposure to Aqueous Solutions. *Risk Anal.* 16(3):349-357 (1996).

- McDougal, J.N., J.H. Grabau, L. Dong, D.R. Mattie, and G.W. Jepson. Inflammatory Damage to Skin by Prolonged Contact with 1,2-Dichlorobenzene and Chloropentafluorobenzene. *Microscopy Res. and Technique*, 37:214-220 (1997).
- Jepson, G.W., and J.N. McDougal. Physiologically Based Modeling of Nonsteady State Dermal Absorption of Halogenated Methanes from an Aqueous Solution. *Toxicol. Appl. Pharmacol.*, 144:315-324 (1997).
- Bookout, R.L., D.W. Quinn and J.N. McDougal. Parallel Dermal Subcompartments for Modeling Chemical Absorption. *SAR and QSAR in Environmental Research*, 7:259-279 (1997).
- Jepson, G.W. and J.N. McDougal: Predicting Vehicle Effects on the Dermal Absorption of Halogenated Methanes Using Physiologically Based Modeling. *Toxicological Sciences*, 48(2):180-188 (1999).
- Islam, M.S., L. Zhao, J.N. McDougal and G.L. Flynn. Uptake of Chloroform by Skin on Brief Exposures to the Neat Liquid. *Am. Ind. Hyg. Assoc. J.* 60(1):5-15 (1999).
- Islam, MS., L. Zhao, J. Zhou, L. Dong, J.N. McDougal, and G.L. Flynn. Systemic Uptake and Clearance of Chloroform by Hairless Rats Following Dermal Exposure: II. Absorption of the Neat Solvent. *Am. Ind. Hyg. Assoc. J.* 60(1):438-433 (1999).
- McDougal, J.N., D.L. Pollard, W.H. Weisman, C.M. Garrett, and T.E. Miller. Assessment of Skin Absorption and Penetration of JP-8 Jet Fuel and its Components. *Toxicological Sciences* 55:247-255 (2000).
- Rogers, J.V., P.G. Gunasekar, C.M. Garrett, and J.N. McDougal. Dermal Exposure to m-Xylene Leads to Increasing Oxidative Species and Low Molecular Weight DNA in Rat Skin. *Journal Biochemical and Molecular Toxicology*, 15:228-230 (2001).
- McDougal, J.N. and J.M. Jurgens. Short Term Dermal Absorption and Penetration of Chemicals from Aqueous solutions: Theory and Experiment. *Risk Analysis*, 21(4):719-726 (2001).
- Rogers, J.V., P.G. Gunasekar, C.M. Garrett, M.B. Kabbur and J.N. McDougal. Detection of Oxidative species and Low Molecular Weight DNA in Skin following Dermal Exposures with JP-8 Jet Fuel. *J. Applied Tox.*, 21:521-525 (2001).
- Kabbur, M.B., J.V. Rogers, P.G. Gunasekar, C.M. Garrett, K.T. Geiss, W.W. Brinkley and J.N. McDougal. Effect of JP-8 Jet Fuel on Molecular and Histological Parameters Related to Acute Skin Irritation. *Toxicology and Applied Pharmacology*, 175:83-88 (2001).

- McDougal, J.N. and P.J. Robinson. Assessment of Dermal Absorption and Penetration of Components of a Jet Fuel Mixture (JP-8). *The Science of the Total Environment*, 288:23-30 (2002).
- Poet, T.S. and J.N. McDougal. Skin Absorption and Human Risk Assessment. *Chemico-Biological Interactions*, 140:19-34 (2002).
- McDougal, J.N. and M.F. Boeniger. Methods for Assessing Risks of Dermal Exposures in the Workplace. *Critical Reviews in Toxicology*, 32(4):291-327 (2002).
- Rogers, J.V. and J.N. McDougal. Improved Method for *in vitro* Assessment of Dermal Toxicity for Volatile Organic Chemicals. *Toxicology Letters*, 135:125-135 (2002).
- Coleman, C.A., B.E. Hull, J.N. McDougal and J.V. Rogers. The effect of m-xylene on cytotoxicity and cellular antioxidant status in rat dermal equivalents. *Toxicology Letters*, 142:133-142 (2003).
- Gunasekar, P.G., J.V. Rogers, M.H. Kabbur, C.M. Garrett, W.W. Brinkley and J.N. McDougal. Molecular and Histological Responses Related to Acute Skin Irritation from Exposure to m-Xylene. *Journal Biochemical and Molecular Toxicology*, 17(2):92-94 (2003).
- Rogers, J.V., C.M. Garrett and J.N. McDougal. Gene Expression in Rat Skin Induced by Irritating Chemicals. *Journal Biochemical and Molecular Toxicology*, 17(3):123-137 (2003).
- Rogers, J.V., G.L. Seigel, D.L. Pollard, A.D. Rooney and J.N. McDougal. The Cytotoxicity of JP-8 volatile jet fuel components in keratinocytes. *Toxicology*, 197(2):113-121 (2004).
- McDougal, J.N. and J.V. Rogers. Local and Systemic Toxicity of JP-8 from Cutaneous Exposures. *Toxicology Letters*, 149(1-3):301-308 (2004).
- Arfsten, Darryl P., Carol M. Garrett, Warren W. Jederberg, Erin R. Wilfong and James N. McDougal. Characterization of the skin penetration of a hydrocarbon-based weapons maintenance oil. *Journal of Occupational and Environmental Hygiene*, 3(9):457-64 (2006).
- McDougal, James N., Carol M. Garrett, Carol M. Amato and Steven J. Berberich. Effects of brief cutaneous JP-8 jet fuel exposures on time-course of gene expression in the epidermis. *Toxicological Sciences*, 95(2):495-510 (2007).
- Frasch, H. Frederick., Ana M. Barbero, Houda Alachkar, and James N. McDougal. Skin penetration and lag times of neat and aqueous diethyl phthalate, 1,2-dichloroethane and naphthalene. *Cutaneous and Ocular Toxicology*, 26:1-14 (2007).

McDougal, J.N. and C.M. Garrett. Gene Expression and Target Tissue Dose in the Rat Epidermis after brief JP-8 and JP-8 Aromatic and Aliphatic Component Exposures, *Toxicological Sciences*, 97(2):569-581 (2007).

McDougal, James N., Edward A. Council III and Brett S. Powers. Systemic Toxicity from Skin Exposures (Or what happens when you don't decontaminate). *J. Chemical Health and Safety*, accepted.

CHAPTERS AND PROCEEDINGS

McDougal, J.N., P.R. Marques and T.F. Burks: Thermic Responses to Morphine in Old and Young Rats. *Proc. West. Pharmacol. Soc.* 23:235-238 (1980).

McDougal, J.N., J.A. Butler and T.F. Burks: Morphine Distribution after Oral and Subcutaneous Administration. *Proc. West Pharmacol. Soc.* 24:331-334 (1981).

McDougal, J.N. and T.F. Burks: Effects of Morphine Tolerance on Acetylcholine-Induced Hypothermia in Young, Mature and Senescent Rats. *Proc. West. Pharmacol. Soc.* 25:313-315 (1982).

Burks, T.F., T.P. Davis and J.N. McDougal: Metabolism and Thermopharmacology of Opioid Peptides in Rat Brain. *Environment, Drugs and Thermoregulation. 5th Int. Symp. Pharmacol. Pharmacology of Thermoregulation*, Karger, Basel, 94-97 (1983).

McDougal, J.N., G.W. Jepson, H.J. Clewell III and M.E. Andersen: Percutaneous Absorption of Chemical Vapors. *Proc. 15th Conference on Environmental Toxicology, AFAMRL-TR-84-002*, 314-321 (1984).

McDougal, J.N., M.E. George, H.J. Clewell III, M.E. Andersen and D.L. Pollard: Dermal Absorption of Hydrazine Vapors. 1985 JANNAF Safety and Environmental Protection Subcommittee Meeting, *CPIA Publication 436*, 299-305 (1985).

McDougal, J.N., G.W. Jepson, H.J. Clewell III and M.E. Andersen: Pharmacokinetics of Organic Vapor Absorption. in *Pharmacology and the Skin*, Vol I, B. Schroot and H. Schaefer (EDS), Karger, Basel, 245-251 (1987).

Clewell, H.J., J.N. McDougal, M.E. George and M.E. Andersen: Occupational Safety Considerations with Hydrazine. in *The Third Conference on Environmental Chemistry of Hydrazine Fuels*, D.A. Stone and F.L. Wiseman (EDS), *ESL-TR-87-74*, 300-308 (1987).

Clewell, H.J., T.S. Haddad, T.E. Fazekas, J.N. McDougal and M.E. Andersen: Dermal Absorption of 1,1-dimethylhydrazine (UDMH) Vapor. 1988 JANNAF Safety and Environmental Protection Subcommittee Meeting, *CPIA Publication 485*, May 1988, 461-465 (1988).

McDougal, J.N., H.J. Clewell III, M.E. Andersen and G.W. Jepson: Physiologically Based Pharmacokinetic Modelling of Skin Penetration, in Prediction of Percutaneous Penetration, R.C. Scott, R.H. Guy and J. Hadgraft (EDS), IBC Technical Services, London, 263-272 (1990).

Mattie, D.R. and J.N. McDougal: Use of Lanthanum to Detect Changes in the Permeability Barrier of Rat Skin, in Prediction of Percutaneous Penetration, R.C. Scott, R.H. Guy and J. Hadgraft (EDS), IBC Technical Services, London, 367-371 (1990).

McDougal, J.N. and H.J. Clewell III: Dermal to Inhalation Extrapolation for Organic Chemicals, in Principles of Route-to-Route Extrapolation for Risk Assessment, T.R. Gerrity and C.J. Henry (EDS), Elsevier Science Publishing Co., Inc., New York, 313-317 (1990).

McDougal, J.N.: Physiologically-based Pharmacokinetic Modeling, in Dermatotoxicology, F.N. Marzulli and H.I. Maibach (EDS), 4th edition, Hemisphere Publishing Corporation, Washington DC, 37-60 (1991).

Jepson, G.W., J.N. McDougal and H.J. Clewell III: Comparison of Dermal and Inhalation Routes of Entry for Organic Chemicals, Proceedings of '91 Space Operations, Applications, and Research (SOAR) Symposium, NASA Conference Publication 3127, Vol I (1991).

Clewell, HJ; McDougal, JN; George, M.E; Anderson, M.E. Occupational Safety Considerations with Hydrazine. NASA 5th Annual Workshop on Space Operations Applications and Research (1992).

Garrity, B.L., Jepson, G.W. and J.N. McDougal: The Utility of Partition Coefficients in Dermal Model Development for Rat and Guinea Pig. AL/OE-TR-1995-0024.

Vinegar, A., D.E. Dodd, D.L. Pollard, R.J. Williams, and J.N. McDougal: Pharmacokinetics of HCFC-123 in Dogs. AL/OE-TR-1995-0025.

Dong, L., J.H. Grabau, J.N. McDougal, G.W. Jepson, D.R. Mattie, B.L. Garrity and C. Seckel: Dermal Absorption Kinetics of Liquid Chloropentafluorobenzene (CPF₅) and 1,2-Dichlorobenzene (DCB) in rats and guinea pigs. AL/OE-TR-1995-0057.

Grabau, J.H., L. Dong, D.R. Mattie, G.W. Jepson and J.N. McDougal. Comparison of Anatomical Characteristics of the Skin for Several Laboratory Animals. AL/OE-TR-1995-0066.

Creech, J.R., R.K. Black, B.L. Garrity, R.J. Williams, J.N. McDougal, G.W. Jepson, R. Abbas, L. Dong, and A. Vinegar: Inhalation Uptake and Metabolism of Iodohalogenated Compounds, CF₃I, C₆F₁₃I, and C₃F₇I. AL/OE-TR-1995-0089.

McDougal, J.N.: Physiologically-based Pharmacokinetic Modeling, in Dermatotoxicology, F.N. Marzulli and H.I. Maibach (EDS), 5th edition, Hemisphere Publishing Corporation, Washington DC, 353-370 (1996).

Walker, J.D., C. Whittaker and J.N. McDougal: Role of the TSCA Interagency Testing Committee in Meeting the U.S. Government's Data Needs: Designating Chemicals for Percutaneous Absorption Testing, in Dermatotoxicology, F.N. Marzulli and H.I. Maibach (EDS), 5th edition, Hemisphere Publishing Corporation, Washington DC, 371-381 (1996).

McDougal J.N., K.Y. Yu, D.T. Tsui, H. Zhang, D.L. Pollard, and G.W. Jepson: Dermal Absorption of MACS Propellants. 1997 JANNAF Safety and Environmental Protection Subcommittee Meeting, CPIA Publication 643, March 1997.

Mattie, D.R. and J.N. McDougal: Skin Partitions as a Screen for Dermal Permeability. in Advances in Animal Alternatives for Safety and Efficacy Testing, Harry Salem & Sidney Katz (EDS), Taylor & Francis, Washington DC, 375-380 (1997).

McDougal, J.N.: Methods in Physiologically-based Pharmacokinetic Modeling, in Dermatotoxicology Methods: The Laboratory Worker's *vade mecum*, F.N. Marzulli and H.I. Maibach (EDS), Taylor and Francis, Washington DC, 51-69 (1998).

McDougal, J.N., K.O. Yu, D.T. Tsui, H. Zhang, D.L. Pollard and G.W. Jepson: Dermal Absorption of Modular Artillery Charge (XM232). Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-1998-0051 January 1998.

McDougal, J.N., K.O. Yu, D.T. Tsui, H. Zhang, D.L. Pollard and G.W. Jepson: Dermal Absorption of Modular Artillery Charge (XM231). Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-1998-0052 February 1998.

McDougal, J.N.: Prediction - Physiological Models. In: Dermal Absorption and Toxicity Assessment, M.S. Roberts and K.A. Walters (EDS), Marcel Dekker, New York, 189-202 (1998).

Bunge, A.L. and J.N. McDougal: Dermal Uptake. In Exposure to Contaminants in Drinking Water: Estimating Uptake through the Skin and by Inhalation, S.S. Olin (ED.), CRC Press, Boca Raton FL, 135-178 (1998).

Baker, W., J. English, D. Dodd, J. McDougal, and T. Miller. Repeated Dose Skin Irritation Study on Jet Fuels - Preliminary Dose Range Finding Study, AFRL-HE-WP-TR-1999-0008 (1999).

McDougal, J. N., D. L. Pollard, C. M. Garrett, R. M. Davis, and T. E. Miller. Dermal Absorption of JP-8 Jet Fuel and its Components, Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-1999-0021 (1999).

Baker, W., D. Dodd, J. McDougal, and T. Miller. Repeated Dose Skin Irritation Study on Jet Fuels – A Histopathology Study, Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-1999-0022 (1999).

McDougal, J.N. and G.W. Jepson. Assessment of the Dermal Absorption Potential of Modified M1 Propellants, WC-732 and PAP-7993. Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-1999-161 (1999).

Jepson, G.W., D.L. Pollard, H. Zhang, L. Narayanan, J.N. McDougal, J.R. O’Lear, D.T. Tsui and T. Miller: Analysis of XM231 Combustion Residues. Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-2000-044 (2000).

Robinson, P.J. and J.N. McDougal. Effect of JP-8 vehicle on Dermal Penetration of Hydrocarbon Components from Jet Fuels. Air Force Research Laboratory Technical Report, AFRL-HE-WP-TR-2000-045 (2000).

Subcommittee on Flame-Retardant Chemicals, Committee on Toxicology, Toxicological Risks of Selected Flame-Retardant Chemicals. National Academy Press, Wash DC. (2000) (Dr. McDougal was subcommittee member).

Kabbur, M.B, J.V. Rogers, P.G. Gunasekar, C.M. Garrett, K.T. Geiss, W.W. Brinkley and J.N. McDougal. Effect of JP-8 on Molecular and Histological Parameters related to Acute Skin Irritation. AFRL-HE-WP-TR-2000-117 (2000).

McDougal, J.N., D.L. Pollard, R.M. Davis and D.E. Dodd. Dermal Absorption of Comp B and CBR-12 in Isolated Rat Skin. AFRL-HE-WP-TR-2001-0058 (2001).

Gunasekar, P.G., Rogers, J.V., Kabbur, M.B., Garrett, C.M., Brinkley, W.W., McDougal, J.N. Comparative Study of Molecular Mechanisms of Skin Irritation after Acute Exposure to *m*-Xylene in Rats and Guinea Pigs. AFRL-HE-WP-TR-2001-0090 (2001).

Dodd, D.E. and J.N. McDougal. Health Hazard Assessment of PAX-21. AFRL-HE-TR-2001-0103 (2001).

Robinson, P.J. and J.N. McDougal. Approaches for Predicting Health Risks Associated with Complex Chemical Mixtures. ECO-INFORMA papers (2001).

Geiss, K.T., C.M. Garrett, J.V. Rogers and J.N. McDougal. Improved Method for Obtaining RNA from Rodent Skin. AFRL-HE-TR-2001-0150 (2001).

Rogers, J.V. J.D. McCafferty and J.N. McDougal. Improved method for in vitro assessment of volatile organic chemical exposure using living dermal equivalents. AFRL-HE-TR-2002-0009 (2002).

McDougal, J.N.: Physiologically-based Pharmacokinetic Modeling, in Dermatotoxicology, H. Zhai and H.I. Maibach (EDS), 6th edition, CRC Press, Boca Raton FL, 591-619 (2004).

McDougal, J.N. Zheng, Y, Zhang, Q. and Conolly, R. Biologically Based Pharmacokinetic and Pharmacodynamic Models of the Skin, in Dermal Absorption Models in Toxicology and Pharmacology, J.E. Riviere (ed), Taylor and Francis, London UK, 89-112 (2005).

McDougal, J.N.: Physiologically-based Pharmacokinetic Modeling, in Dermatotoxicology, H. Zhai and H.I. Maibach (EDS), 7th edition, CRC Press, Boca Raton FL, in press.

McDougal, J.N.: Estimation of Subsequent Systemic Exposure - Physiological Models. In: Dermal Absorption in Toxicity Assessment, M.S. Roberts and K.A. Walters (EDS), 2nd edition, Taylor and Francis, New York, in press.

COMMITTEES AND CONSULTATIONS

Technical Evaluation Committee, "Transdermal Estrogen Delivery Device", National Institute of Human Health and Child Development. 1985.

Technical Evaluation Committee, "Transdermal Delivery of Pyridostigmine", USA Medical Material Development Command. 1986.

Consultant to the Air Force Surgeon General on Toxicology, 1990 – 1994.

Air Force Technical Representative to Committee on Toxicology, Board on Environmental Studies and Toxicology, National Research Council, 1990 – 1995.

Air Force representative to Hydrazine Coalition (Air Force, Navy, NASA, Chemical Manufacturers Association research coalition to provide research information to the ACGIH TLV committee), 1991 – 1993.

National Research Council, Research Associate Program Advisor, 1991 – 1995.

National Fire Protection Association Technical Committee on Alternative Protection Options to Halons, Toxicity Task Group, 1992.

Armstrong Laboratory Animal Research Team, 1992 – 1994.

Department of Defense Alternate Representative to Toxic Substances Control Act, Interagency Testing Committee, 1993 – 1995.

Interagency Testing Committee Subcommittee on Dermal Absorption, 1993 – 1995.

ACGIH Ad Hoc Committee for Establishing Community Air Quality Standards, 1994.

Steering Committee for Decision Support Methodologies for Human Health Risk Assessment of Toxic Substances, Agency for Toxic Substances and Disease Registry, 1994 – 1998.

Expert Panel Monitoring the Development of Advanced Streaming Agents for Military Use, New Mexico Engineering Research Institute 1994.

NIH special study section for General Medicine A-1, June 1994.

Research Committee, Wright State University, College of Medicine, 1994 – 1995.

National Toxicology Program's Interagency Committee for Chemical Evaluation and Coordination, 1994 – 1995.

Consultation to Calgon Vestal Corp. involving modeling of dermal absorption, 1995–1996.

International Life Sciences Risk Science Institute Working Group on Estimation of Dermal and Inhalational Exposures to Contaminants in Drinking Water, 1995 – 1997.

Consultation to Exxon Biomedical Sciences Inc. involving dermal absorption and mathematical models, 1996 – 1997.

Member, Integument Content Group, Curriculum Committee, Wright State University College of Medicine, 1997 – 1998.

Chairman, Human Exposure Peer Review Committee, Human Exposure and Atmospheric Sciences Division, National Exposure Research Laboratory, US EPA, October 29-31, 1997.

Reviewer for USEPA's Dermal Risk Assessment Guidance for Superfund, February 1998.

Participant in USEPA Risk Assessment Forum: "Workshop on the Relationship between Exposure Duration and Toxicity", August 5-6, 1998.

International Life Sciences Risk Science Institute Working Group on Total Exposure Assessment for Drinking Water Contaminants, 1998 – 1999.

Participant in USEPA "Mode of Action motivated Dosimetry" project. 1998 – 2000.

Consultant to Agency for Toxic Substances and Disease Registry for development of Dermal Minimum Risk Levels. Oct 1998 – present.

Reviewer for USEPA National Center for Environmental Assessment Intramural Research Grants. April 1999.

Consultant to Chemical Manufacturers Association Human Health Exposure Assessment Technical Implementation Panel. May 1999 – 2001.

Member NRC Subcommittee on Risk Assessment of Flame-Retardant Chemicals, Commission on Life Sciences, National Research Council. July 1999 – Mar 2000.

Consultant to Toxicology Excellence in Risk Assessment on “Review of Lifetime Cancer Risk from use of Coal Tar-containing Shampoo”. June 2000.

Chair, Regulatory/Policy Committee of the Dermal Toxicology Specialty Section of the Society of Toxicology. May 2000 – 2004.

Reviewer for USEPA National Center for Environmental Assessment STAR Grants (Children’s vulnerability to toxic substances in the environment). June 2002.

Consultant to General Electric Environmental Toxicology Laboratory on Dermal Absorption of PCBs. Feb 2002.

Consultant to Southwest Research Institute on Dermal Absorption of Organophosphates. Jan 2002 - July 2004.

Member NRC Subcommittee on Assessing Toxicological Risks to Deployed Personnel, Commission on Life Sciences, National Research Council. Sept 2003 – Aug 2004.

Member FIFRA Scientific Advisory Panel on “Pharmacokinetic/Pharmacodynamic Modeling”. November 2003 – December 2004.

Member, TLV committee for chemical substances of the American Congress of Governmental Industrial Hygienists (ACGIH). 2003 – present.

Consultant to EBI Medical on contamination of gel electrodes. 2004 – 2005.

Member, NRC Subcommittee on Toxicologic and Radiologic Effects from Exposures to Depleted Uranium During and After Combat. 2004 – 2008

Member, Committee on Toxicology, National Research Council. 2004 – present

Science Reviewer for DoD Joint Science and Technology Office for Chemical and Biological Defense. Mar 2005.

Science Reviewer for DoD Joint Science and Technology Office and Defense Threat Reduction Agency Biological Defense Program, Physiological Response and Computational Chemistry Areas, March 2007.