

CIRRICULUM VITAE

William J. Breslin

EDUCATION

- Ph.D. Michigan State University, 1984. Dual degree in Environmental Toxicology (College of Veterinary Medicine) and Animal Science (College of Agriculture and Natural Resources).
- M.S. Michigan State University, 1982. Major: Poultry Science/Toxicology.
- B.S. Michigan State University, 1980. Major: Wildlife Management.

EMPLOYMENT

- 1993- Present **Research Associate.** Toxicology Research Laboratory, The Dow Chemical Company, 1803 Building, Midland, MI 48674. (517) 636-1311. Toxicology Consultant: Responsibilities include providing toxicology expertise to the product departments and representing the company as a toxicology expert on various intra-company, industry-wide and government panels. Technical leader: Reproductive and Developmental Toxicology. Responsible for overall design, conduct and interpretation of reproductive and developmental toxicity studies, managing and auditing studies placed in contract laboratories and mentorship of less senior doctoral and non-doctoral staff.
- 1989- 1993 **Research Leader.** Toxicology Research Laboratory, The Dow Chemical Company. Manager: Reproductive and Developmental Toxicology. Primary responsibilities included managing/supervising all group personnel and research activities. The Reproductive and Developmental Toxicology group is responsible for providing specialized testing, research services and technical expertise for the manufacturing divisions, product departments and research facilities of the Company. Professional staff (B.S., M.S., Ph.D.) of nine full-time and one half-time employees. Research budget \$2.0-2.5 million. Primary Investigator/Study Director: Design, conduct, interpret, and report developmental, reproductive and subchronic toxicity studies; independent and cooperative investigative research; monitoring contract research and cooperation with product departments in developing testing strategies.
- 1987- 1989 **Project Leader.** Toxicology Research Laboratory, The Dow Chemical Company. Primary Investigator/Study Director.

EMPLOYMENT (Continued)

- 1986-1987 **Senior Research Biologist.** Toxicology Research Laboratory, The Dow Chemical Company. Primary Investigator/Study Director.
- 1984-1986 **Post-doctoral Fellow.** Toxicology Research Laboratory, Reproductive and Developmental Toxicology, The Dow Chemical Company. Evaluation of a neonatal neurobehavioral test battery; chemical effects on the endocrine system and associated toxicity; acute organophosphate toxicity and therapeutic treatment in mice; hemolytic investigations in rabbits and rats; 2-generation inhalation and dietary reproduction studies in rats; developmental toxicity studies in rats and rabbits.
- 1984-1980 **Graduate Research Assistant.** Department of Animal Science, Michigan State University, East Lansing, MI 48824. Conducted subacute avian toxicity tests, chronic avian reproductive toxicity tests, placental and mammary transfer and excretion of ¹⁴C-labeled compounds in the European ferret, and distribution and excretion of ¹⁴C-labeled compounds in bobwhite quail. Additional experience in single generation mammalian reproductive toxicity assays, radioimmunoassays for hormones and assays for the induction of hepatic microsomal mixed function oxidases.
- 1979-1980 **Research Assistant.** Department of Poultry Science, Michigan State University, East Lansing, MI 48824. Conducted subacute and reproductive avian toxicity studies.

PUBLICATIONS

Scientific Journals

Carney, E.W., Liberacki, A. Bartels, M. and Breslin, W. J. (1996). Identification of proximate toxicant for ethylene glycol developmental toxicity using rat whole embryo culture. *Teratology*. (Accepted)

Breslin W.J., Dittenber D.A. and Quast J.F. (1996). Evaluation of the developmental and reproductive toxicity of chlorpyrifos in the rat. *Fundam. Appl. Toxicol.* (Accepted)

Breslin W.J., Ciezlak F.S. Zablotny C.L. Corley R.A., Verschuuren H.G. and Yano, B.L. (1996). Evaluation of the developmental toxicity of inhaled dipropylene glycol monomethyl ether in rabbits and rats. *Occupational Hygiene*. (Accepted)

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PUBLICATIONS (Continued)

Scientific Journals

Kirk, H. D., Berdasco, N. M., Breslin, W. J. and Hanley, T. R. (1995). Developmental Toxicity of 1,2-dichloropropane (PDC) in rats and rabbits following oral gavage. *Fundam. Appl. Toxicol.* 28, 18-26

Liberacki, A. B., Neeper-Bradley, T., Breslin, W. J. and Zielke, G. J. (1995). Teratologic evaluation of dermally applied monoethanolamine in rats and rabbits. *Fundam. Appl. Toxicol.* (Accepted)

Daston G.P., Gooch J.W., Breslin W.J., Shuey D.L., Nikiforov A.L., Fico T.A. and Gorsuch J. (1995). Environmental estrogens and reproductive health: a review of the human and environmental data. *Reproductive Toxicology*. (In preparation)

Carney, E.W., Breslin, W.J., Pottenger, L.H., Johnson, K.A. and Corley, R.A., 1995. Comparative developmental toxicity of the ethylene glycol ether metabolite, methoxyacetic acid, and the propylene glycol ether metabolite, methoxypropionic acid, in New Zealand White rabbits. (In preparation)

Breslin, W. J., Phillips, J. E., Lomax, L. G., Bartels, M. J., Dittenber, D. A., Calhoun, L. L. and Miller, R. R. (1991). Hemolytic activity of ethylene glycol phenyl ether (EGPE) in rabbits. *Fundam. Appl. Toxicol.* 17, 466-481.

Breslin, W. J., Kirk, H. D. and Zimmer, M. A. (1989). Teratogenic evaluation of a polybrominated diphenyl oxide (PBDPO) mixture in New Zealand white rabbits following oral exposure. *Fundam. Appl. Toxicol.* 12, 151-157.

Breslin, W. J., Kirk, H. D., Streeter, C. M., Quast, J. F. and Szabo, J. R. (1989). 1,3-dichloropropene (DCPT): two-generation inhalation reproduction study in Fischer 344 rats. *Fundam. Appl. Toxicol.* 12, 129-143.

Albee, R. R., Mattsson, J. L., Kirk, H. D., Johnson, K. A. and Breslin, W. J. (1989). Neurological consequences of congenital hypothyroidism in Fischer 344 rats. *Neurotox. Teratol.* 11, 171-183.

Breslin, W. J., Kirk, H. D. and Johnson, K. A. (1988). Teratogenic evaluation of diglycidyl ether of bisphenol A (DGEBA) in New Zealand white rabbits following dermal exposure. *Fundam. Appl. Toxicol.* 10, 736-743.

Rao, K. S., Breslin W. J. and Waechter, J. M. (1987). Letter to the editor. *Toxicol. Appl. Pharmacol.* 83, 153-155.

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BFG 00781

PUBLICATIONS (Continued)

Scientific Journals

Aulerich, R. J., Bursian, S. J., Breslin, W. J., Olson, B. A. and Ringer, R. K. (1985). Toxicological manifestations of 2,4,5,2',4',5'-, 2,3,6,2',3',6'-, and 3,4,5,3',4',5'-hexachlorobiphenyl and Aroclor 1254 in mink. *J. Toxicol. Environ. Health*. 15, 63-79.

Bleavins, M. R., Breslin, W. J., Aulerich, R. J. and Ringer, R. K. (1984). Placental and mammary transfer of a polychlorinated biphenyl mixture (Aroclor 1254) in the European ferret (Mustela putorius furo). *J Environ. Toxicol. Chem.* 3, 637-644.

Breslin, W. J., Bleavins, M. R. and Ringer, R. K. (1983). Distribution and excretion of hexachlorobenzene in bobwhite (Colinus virginianus). *J. Toxicol. Environ. Health* 11, 885-896.

Bleavins, M. R., Breslin, W. J., Aulerich, R. J. and Ringer, R. K. (1982). Excretion and placental and mammary transfer of hexachlorobenzene in the European ferret (Mustela putorius furo). *J. Toxicol. Environ. Health* 10, 929-940.

Abstracts

Breslin W. and Billington R. (1995). Evaluation of the developmental toxicology of triclopyr TEA and triclopyr BEE in rabbits. *The International Toxicologist*, 74-P-5.

Carney, E.W., Schroeder, R. and Breslin, W.J., 1995. Developmental toxicity study in rats with fluroxypyr methylheptyl ester. *Teratology* 51:P12.

Carney, E.W., Schroeder, R. and Breslin, W.J., 1995. Developmental toxicity study in rats with nitrapyrin. *Teratology* 51:P13.

Carney E., Liberacki A., Bartels M and Breslin W. (1995). Identification of proximate toxicant for ethylene glycol developmental toxicity using rat whole embryo Culture. *The Toxicologist*. Vol. 15, No. 1, 866.

Breslin, W. J., Vedula, U., Zablotny, C. L. and Stebbins, K. E. (1994). Developmental toxicity studies with picloram triisopropanolamine salt and picloram 2-ethylhexyl ester in the rabbit. *The Toxicologist* 14, 162. Abstract No. 579.

Liberacki, A. B., Zablotny, C. L., Yano, B. L. and Breslin, W. J. (1994). Developmental toxicity studies on a series of 2,4-D salts and esters in rabbits. *The Toxicologist* 14, 162. Abstract No. 580.

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PUBLICATIONS (Continued)

Abstracts

Maurissen, J. P. J., Shankan, M. R., Zielke, G. J., Spencer, P. J., Breslin, W. J., Crissman, J. W. and Kirk, H. D. (1994). Lack of developmental cognitive and other neurobehavioral effects following maternal exposure to 1,1,1-trichloroethane in rats. *The Toxicologist* 14, 162. Abstract No. 584.

Breslin, W. J., Liberacki, A. B., Kirk, H. D., Bradley, G. J. and Crissman, J. W. (1993). Sulfuryl Fluoride: two-generation reproduction study in Sprague-Dawley rats. *The Toxicologist* 13, 368. Abstract No. 1439.

Quast, J. F., Liberacki, A. B. and Breslin, W. J. (1993). Chlorpyrifos insecticide: two-generation dietary reproduction study in Sprague-Dawley rats. *The Toxicologist* 13, 372. Abstract No. 1454.

Zielke, G. J., Yano, B. L. and Breslin, W. J. (1993). 2,3,5,6-Tetrachloropyridine: combined repeat-dose and reproductive/developmental toxicity screen in Sprague-Dawley rats. *The Toxicologist* 13, 77. Abstract No. 200.

Breslin, W. J., Zielke, G. J., and Stebbins, K. L. (1992). Developmental toxicity of monoethanolamine (MEA) in rats following dermal exposure. *The Toxicologist* 12, 102. Abstract No. 323.

Zablotny, C. L., Breslin, W. J. and Kociba, R. J. (1992). Developmental toxicity of orthophenylphenol (OPP) in New Zealand White rabbits. *The Toxicologist* 12, 103. Abstracts No. 327.

Kociba, R. J., Zielke, G. J., and Breslin, W. J. (1992). Picloram Herbicide: Two-generation dietary reproduction study in Sprague-Dawley rats. *The Toxicologist* 12, 120. Abstract No. 393.

Hanley, T. R., Kirk, H. D., Johnson, K. A., Bond, D. M., Stebbins, K. E. and Breslin, W. J. (1992). Propylene Dichloride (PDC): A two-generation reproduction toxicity and dominant lethal mutation study in rats. *The Toxicologist* 12, 200. Abstract No. 734.

Corley, R. A., Cieszlak, F. S., Breslin, W. J., Lomax, L. G. and Stack, C. R. (1992). The subchronic toxicity of triethylene glycol monomethyl ether (TGME) in dermally exposed Sprague-Dawley rats. *The Toxicologist* 12, 233. Abstract No. 868.

Kirk, H. D., Yano, B. L., Haut, K. T., Verschuuren, H. G. and Breslin, W. J. (1992). Tripropylene glycol N-butyl ether 13-week drinking water toxicity study in Fischer 344 rats. *The Toxicologist* 12, 233. Abstract No. 865.

BFG 00783

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PUBLICATIONS (Continued)

Abstracts

Breslin, W. J., Schroeder, R. E., and Hanley, T. R. (1991). Developmental toxicity of Picloram potassium (K) and triisopropanolamine (TIPA) salts in the rat. The Toxicologist 11, 74. Abstract No. 200.

Hanley, T. R., Schroeder, R. E., and Breslin, W. J. (1991). Developmental studies on a series of 2,4-D salts and esters in the rat. The Toxicologist 11, 72. Abstract No. 190.

Jersey, G. C., Breslin, W. J., and Zielke, G. J. (1991). Subchronic toxicity of 1,3-dichloro-2-propanol in the rat. The Toxicologist 11, Abstract No. 1387.

Breslin, W. J., Ciezlak, F. S., Zablotny, C. L., Corlev, R. A., Yano, B. L. and Verschuuren, H. G. (1990). Developmental toxicity of inhaled dipropylene glycol monomethyl ether (DPGME) in rabbits and rats. The Toxicologist 10, 38. Abstract No. 154.

Breslin, W. J., Kirk, H. D., Streeter, C. M., Quast, J. F. and Szabo, J. R. (1988). TELONE® II soil fumigant: two-generation inhalation reproduction study in Fischer 344 rats. The Toxicologist 8, 239. Abstract No. 951.

Albee, R. R., Mattsson, J. L., Kirk, H.D., Johnson, K. A. and Breslin, W. J. (1988). Neurophysiological effects of perinatal methimazole administration: a positive control study. The Toxicologist 8, 227. Abstract No, 906.

Breslin, W. J., Phillips, J.E., Lomax, L. G., Calhoun, L.L., Dittenber, D. A., Bartels, M. J. and Miller, R. R. (1987). Ethylene glycol phenyl ether (EGPE): toxicological effects in rabbits and rats. The Toxicologist 7, 246. Abstract No. 906.

Bleavins, M. R., Breslin, W. J., Aulerich, R. J. and Ringer, R. K. (1984). Excretion and placental and mammary transfer of hexachlorobenzene in the European ferret (Mustela putorius furo). Scientifur 8, 115.

Research Reports: >75 Industry or Government Research Reports

PROFESSIONAL SOCIETIES

Teratology Society

Society of Toxicology (National and Michigan Chapter)

American Association for Laboratory Animal Science

Society of Environmental Toxicology and Chemistry (Central Great Lakes Regional Chapter)

TEACHING EXPERIENCE

Avian Physiology, Laboratory, Michigan State University, 1981-1984.
Avian Physiology, Lecture, Michigan State University, 1984.
Poultry Science and Practice, Laboratory, Michigan State University, 1981.

ORGANIZATIONS AND HONORS

Council of Graduate Students, Representative, M.S.U., 1980-1982.
Poultry Science Graduate Student Association, 1980-1984; Secretary, 1982-1984.
Fisheries and Wildlife Club, M.S.U., 1978-1984.
FarmHouse Fraternity, M.S.U., 1979-1982.
Board of Regents Scholarship, 1975-1977.
Varsity Track and Field, E.M.U., 1975-1977.

SYMPOSIUM PRESENTATIONS

Co-Chair, Poster Discussion Session: Reproductive System. International Congress of Toxicology-VII. July 2-6, 1995. Seattle, Washington, USA.

Breslin W. and Billington R. (1995). Evaluation of the developmental toxicology of triclopyr TEA and triclopyr BEE in rabbits. International Congress of Toxicology-VII. July 5, 1995. Seattle, Washington, USA.

W. J. Breslin. (1995). Dow strategy for hazard assessment of potential estrogenic chemicals. 1995 Spring Science and Technology Meeting. Midland, MI. May 17, 1995.

Breslin, W. J., Vedula, U., Zablotny, C. L. and Stebbins. (1994). Developmental toxicity studies with picloram triisopropanolamine salt and picloram 2-ethylhexyl ester in the rabbit. Society of Toxicology, 33rd Annual Meeting, Dallas, TX. March 13-18, 1994.

Liberacki, A. B., Zablotny, C. L., Yano, B. L., and Breslin, W. J. (1994). Developmental toxicity studies on a series of 2,4-D salts and esters in rabbits. Society of Toxicology, 33rd Annual Meeting, Dallas, TX. March 13-18, 1994.

Maurissen, J. P. J., Shankan, M. R., Zielke, G. J., Spencer, P. J., Breslin, W. J., Crissman, J. W., and Kirk, H. D. (1994). Lack of developmental cognitive and other neurobehavioral effects following maternal exposure to 1,1,1-trichloroethane in rats. Society of Toxicology, 33rd Annual Meeting, Dallas, TX. March 13-18, 1994.

2,3,5,6-Tetrachloropyridine: Combined Repeat-dose and Reproductive/ Developmental Toxicity Screen in Sprague-Dawley Rats. Society of Toxicology, 32th Annual Meeting, New Orleans, LA. March 14-18, 1993.

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SYMPOSIUM PRESENTATIONS (Continued)

Chlorpyrifos Insecticide: Two-generation Dietary Reproduction Study in Sprague-Dawley rats. Society of Toxicology, 32th Annual Meeting, New Orleans, LA. March 14-18, 1993.

Sulfuryl Fluoride: Two-generation Reproduction Study in Sprague-Dawley Rats. Society of Toxicology, 32th Annual Meeting, New Orleans, LA. March 14-18, 1993.

Developmental Toxicity of Monoethanolamine (MEA) in Rats Following Dermal Exposure. Society of Toxicology, 31th Annual Meeting, Seattle, Washington. Feb. 23-27, 1992.

Picloram Herbicide: Two-Generation Dietary Reproduction Study in Sprague-Dawley Rats. Society of Toxicology, 31th Annual Meeting, Seattle, Washington. Feb. 23-27, 1992.

Propylene Dichloride (PDC): A Two-Generation Reproduction Toxicity and Dominant Lethal Mutation Study in Rats. Society of Toxicology, 31th Annual Meeting, Seattle, Washington. Feb. 23-27, 1992.

Developmental toxicity of Picloram potassium (K) and triisopropanolamine (TIPA) salts in the rat. Society of Toxicology, 30th Annual Meeting, Dallas, Texas. Feb. 25-March 1, 1991.

Subchronic toxicity of 1,3-dichloro-2-propanol in the rat. Society of Toxicology, 30th Annual Meeting, Dallas, Texas. Feb. 25-Mar. 1, 1991.

Developmental toxicity of inhaled dipropylene glycol monomethyl ether (DPGME) in rabbits and rats. Society of Toxicology, 29th Annual Meeting, Miami Beach, Florida. Feb. 12-16, 1990.

TELONE® II soil fumigant: two-generation inhalation reproduction study in Fischer 344 rats. Society of Toxicology, 27th Annual Meeting, Dallas, Tx. Feb. 15-19, 1988.

Ethylene Glycol Phenyl Ether (EGPE): Toxicological effects in rabbits and rats. Society of Toxicology, 26th Annual Meeting, Washington D. C., Feb. 23-27, 1987.

Methylene chloride: effects on estrous cycling and serum prolactin in Sprague-Dawley rats. Michigan Regional Chapter of The Society of Toxicology. Symposium on "In Vitro Approaches for Studing Toxic Cell Injury". Western Michigan University, Kalamazoo, MI. May 23, 1986.

SYMPOSIUM PRESENTATIONS (Continued)

Methylene chloride: effects on estrous cycling and serum prolactin in Sprague-Dawley rats. 42nd Fall Scientific Meeting of the American Chemical Society. Symposium on Methylene Chloride: Carcinogenicity Risk Assessment and Regulatory Impact. Midland, MI, Nov. 8, 1986.

Toxicological manifestations of 2,4,5,2',4',5'-, 2,3,6,2',3',6'-, and 3,4,5,3',4',5'-hexachlorobiphenyl and Aroclor 1254 in mink. Michigan Regional Chapter of The Society of Toxicology. Symposium on "Mechanism of Lung Metabolism and Toxicity". General Motors Research Laboratory, Warren, MI. May 11, 1984.

SYMPOSIUMS (Participant/Attendant)

Co-Chair, Poster Discussion Session: Reproductive System. International Congress of Toxicology-VII. July 5, 1995. Seattle, Washington, USA.

International Congress of Toxicology-VII. July 2-6, 1995. Seattle, Washington, USA.

U.S. Environmental Protection Agency Health Effects Research Laboratory, Endocrine Disruptor Research Needs Workshop. Raleigh, NC. April 10-13, 1995.

Society of Toxicology. 34th Annual Meeting. Baltimore, MD. March 5-9, 1995

Michigan Regional Chapter of the Society of Toxicology, in conjunction with the Midwest Teratology Association. Symposium on Environmental Estrogens. Park-Davis Pharmaceutical Research, Ann Arbor, MI. Oct. 21, 1994.

Preventing Child Exposures to Environmental Hazards: Research and Policy Issues. The Childrens Environmental Health Network. National Symposium. Washington, D.C., March 18-19, 1994.

Society of Toxicology. 33rd Annual Meeting. Dallas, TX. March 13-17, 1994.

Sperm Quantity and Quality Measures in Male Reproductive Toxicity: EPA Human and Rodent Studies. United States Environmental Protection Agency, Washington, D.C., Crystal Mall 2, Rm. 1126. Dec. 13, 1993.

American College of Toxicology. 14th Annual Meeting, New Orleans, LA. October 3-6, 1993.

Society of Toxicology, 32nd Annual Meeting, New Orleans, LA. March 14-18, 1993.

Female Reproductive and Developmental Toxicology. Michigan Regional Chapter of the Society of Toxicology. Lansing, MI. October 23, 1992.

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SYMPOSIUMS (Participant/Attendant) (Continued)

The Teratology Society, 32 Annual Meeting, Boca Raton, Florida. June 28 - July 2, 1992.

Safety Assessment for Non-cancer Endpoints: The Benchmark Dose and Other Possible Approaches. Cal/EPA, USEPA and ATSDR Workshop. Tiburon, California. May 11-12, 1992.

Society of Environmental Toxicology and Chemistry, Central Great Lakes Chapter, Biomarkers as Indicators of Contaminant Effects and Fate in Fish, Wildlife and Humans. Ann Arbor, Michigan. April 30th, 1992.

Society of Toxicology, 31st Annual Meeting, Seattle, Washington. Feb. 23-27, 1992.

The Teratology Society, 31st Annual Meeting, Boca Raton, Florida. June 22-27, 1992.

Society of Toxicology, 30th Annual Meeting, Dallas, Texas. Feb. 25-March 1, 1991.

Society of Toxicology, 29th Annual Meeting. Miami Beach, Florida. Feb. 12-16, 1990.

Gordon Research Conference. Mammalian Gametogenesis and Emrgyogenesis. Plymouth State College - North. Plymouth, NH., July 18-22, 1988.

Society of Toxicology. 27th Annual Meeting. Dallas, TX., Feb. 15-19, 1988.

Michigan Regional Chapter of the Society of Toxicology. Endocrine Toxicology. Kellogg Center, East Lansing, MI., May 20, 1988.

Gordon Research Conference. Hormonal Carcinogeneses. New Hampton School. New Hampton, NH., Aug. 3-7, 1987.

Society of Toxicology. 26th Annual Meeting. Washington, D. C., Feb. 23-27, 1987.

Michigan Regional Chapter of the Society of Toxicology. Toxicology of Blood and Blood Forming Organs. University of Michigan. Ann Arbor, MI., Oct. 16, 1987.

42nd Fall Scientific Meeting of the American Chemical Society. Midland, MI., Nov. 8, 1986.

Banbury Center Conference. Mechanistic Approaches to Developmental Toxicity. Banbury Center. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY., Oct. 19-22, 1986.

Michigan Regional Chapter of the Society of Toxicology. In Virto Approaches for Studying Toxic Cell Injury. Kalamazoo, MI., May 23, 1986.

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SYMPOSIUMS (Participant/Attendant) (Continued)

The Eighth CIIT Conference on Toxicology. Approaches to Elucidate Mechanisms in Teratogenesis. Raleigh, N.C., April 1, 1986.

Society of Toxicology. 24th Annual Meeting. San Diego, CA., March 18-22, 1985.

Society of Toxicology. 23th Annual Meeting. Atlanta, GA., March 12-16, 1984.

Michigan Regional Chapter of the Society of Toxicology. Mechanism of Lung Metabolism and Toxicity. General Motors Research Laboratory, Warren, MI., May 11, 1984.

International Symposium on PCBs in the Great Lakes. Michigan State University Center for Environmental Toxicology. East Lansing, MI., March, 1982.

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CURRICULUM VITAE

Edward W. Carney

EDUCATION & POSITIONS HELD

1994-present PROJECT LEADER, REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY, THE DOW CHEMICAL COMPANY, Midland, MI

Responsibilities: (1) Conduct mechanistic research on ethylene glycol and glycol ether developmental toxicity, (2) Lead an *in vitro* teratogenicity testing program for early stage screening and for follow-up mechanistic studies (3) Serve as thesis advisor for a University of Michigan Ph.D. student conducting thesis research at Dow on the relationship between maternal and developmental toxicity, (4) Provide technical oversight and laboratory support for regulatory testing studies in developmental and reproductive toxicology (5) Act as a Dow technical consultant for issues in developmental and reproductive toxicology.

1992- 1994 SENIOR RESEARCH TOXICOLOGIST, REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY, THE DOW CHEMICAL COMPANY, Midland, MI

1990-1992 POST-DOCTORAL RESEARCH FELLOW, MOUNT SINAI HOSPITAL RESEARCH INSTITUTE, Toronto, Ontario, Canada.

Supervisors: Drs. Janet Rossant, Stephen Lye and Knox Ritchie

Research projects: (1) expression of trophoblast-specific genes during placental development: use of mRNA markers to study regulation of differentiation and analysis of cell lineage *in vivo* and *in vitro* (2) expression of angiogenic growth factors in normal and growth restricted human placentae (3) reproductive/developmental analysis of mutant mice lacking a functional colony stimulating factor-one gene.

1986-1990 Ph.D., CORNELL UNIVERSITY, Ithaca, New York.
Major: Reproductive physiology
Minors: Biochemistry and Cellular Biology

Major professor: Dr. Robert H. Foote

Thesis title: "Co-culture of rabbit preimplantation embryos with rabbit oviduct epithelial cells"

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- 1984-1986 M.S., UNIVERSITY OF WISCONSIN, Madison, Wisconsin.
Major: Reproductive Biology
Major professor: Dr. Barry D. Bavister
- Thesis title: "Requirements for in vitro development of the preimplantation golden hamster embryo"
- 1982-1984 EXPERIMENT SUPERVISOR, STERLING-WINTHROP RESEARCH INSTITUTE, Rensselaer, New York.
- Duties: Supervised a staff of four technicians engaged in teratology, male and female fertility, and other GLP reproductive and developmental toxicology evaluations of experimental pharmaceuticals in rabbits and rodents
- 1981-1982 VETERINARY ASSISTANT, FAIRMOUNT ANIMAL HOSPITAL, Syracuse, New York.
- 1979-1981 B.S., CORNELL UNIVERSITY, Ithaca, New York.
Major: Animal Science
- 1977-1979 A.A.S., STATE UNIVERSITY OF NEW YORK, AGRICULTURAL AND TECHNICAL COLLEGE, Cobleskill, New York.
Major: Animal Science

HONORS

- Special Recognition Award, The Dow Chemical Company, 1993
- Gamma Sigma Delta National Academic Honor Society
- Cornell University Field of Physiology Symposium Award for Best Poster Presentation, 1988 and 1989
- Field of Physiology, Graduate Student Representative to the Faculty
- Phi Theta Kappa National Academic Honor Society
- Cobleskill College Alumni Scholarship Award for Academic Excellence and Service
- New York State Regent's Scholarship

AFFILIATIONS

- Teratology Society
- Midwest Teratology Association
- Mid-Atlantic Reproduction and Teratology Association
- Industrial In Vitro Toxicology Group

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BFG 00791

PUBLICATIONS

1. Kane, M.T., Carney, E.W. and Bavister, B.D., 1986. Vitamins and amino acids stimulate hamster blastocysts to hatch *in vitro*. *J. Exp. Zool.* 239: 429-432.
2. Carney, E.W. and Bavister, B.D., 1987. Stimulatory and inhibitory effects of amino acids on development of hamster 8-cell embryos *in vitro*. *J. In Vitro Fert. Emb. Transfer* 4: 162-167.
3. Carney, E.W. and Bavister, B.D., 1987. Regulation of hamster embryo development *in vitro* by carbon dioxide. *Biol. Reprod.* 36: 1155-1163.
4. Foote, R.H. and Carney, E.W., 1988. Factors affecting reproductive efficiency of selected laboratory animals. *Ann. N.Y. Acad. Sci.* 541: 683-696.
5. Ellington, J.E., Carney, E.W., Farrell, P.B., Simkin, M. and Foote, R.H., 1990. Bovine 1-2-cell embryo development using a simple medium in three oviduct epithelial cell coculture systems. *Biol. Reprod.* 43:97-104.
6. Carney, E.W. and Foote, R.H., 1990. Effects of superovulation, embryo recovery, culture system and embryo transfer on development of rabbit embryos *in vivo* and *in vitro*. *J. Reprod. Fert.* 89:543-551.
7. Carney, E.W., Tobback, C., and Foote, R.H., 1990. Co-culture of rabbit one-cell embryos with rabbit oviduct epithelial cells. *J. in Vitro Cell. Dev. Biol.* 26:629-635.
8. Carney, E.W., Tobback, C., Ellington, J.E., and Foote, R.H., 1990. Co-culture of rabbit 2-cell embryos with rabbit oviduct epithelial or other somatic cells. *Molec. Reprod. Dev.* 27:209-215.
9. Carney, E.W. and Foote, R.H., 1991. Improved development of rabbit one-cell embryos to the hatching blastocyst stage in a defined, protein-free culture medium. *J. Reprod. Fert.* 91:113-123.
10. Hallden, K., Li, J., Carney, E.W. and Foote, R.H., 1992. Increasing carbon dioxide from five to ten percent improves rabbit blastocyst development from cultured zygotes. *Molec. Reprod. Dev.* 33:276-280.
11. Carney, E.W., Lye, S.J. and Ritchie, J.W.K., 1992. Cellular localization of basic fibroblast growth factor within human placenta throughout gestation. *Society for Gynecological Investigation*, 39th Annual Meeting, p. 375.
12. Ellington, J.E., Farrell, E.W., Carney, E.W., Simkin, M.S., and Foote, R.H., 1992. *In vitro* developmental potential of bovine zygotes in oviduct epithelial cell co-culture systems. *Theriogenology*

13. Kane, M.T., Carney, E.W. and Ellington, J.E., 1992. The role of nutrients, peptide growth factors and co-culture cells in development of preimplantation embryos *in vitro*. *Theriogenology* August.
14. Carney, E.W., Prideaux, V., Lye, S.J. and Rossant, J., 1993. Progressive expression of trophoblast-specific genes during formation of mouse trophectoderm giant cells *in vitro*. *Molec. Reprod. Devel.* 34:357-368.
15. Carney, E.W., 1994. An integrated perspective on the developmental toxicity of ethylene glycol. *Reproductive Toxicology* 8:99-113.
16. Jackson, M.R., Carney, E.W., Lye, S.J. and Ritchie, J.W.K., 1994. Immunolocalisation of two angiogenic factors (PDECGF and VEGF) in human placentae throughout gestation. *Placenta* 15: 341-353.
17. Kamrin, M.A., Carney, E.W., Chou, K., Cummings, A., Dostal, L.A., Harris, C., Henck, J.W., Loch-Caruso, R., and Miller, R.K., 1994. Female reproductive and developmental toxicology: overview and current approaches. *Toxicology Letters* 74:99-119.
18. Carney, E.W., Schroeder, R. and Breslin, W.J., 1995. Developmental toxicity study in rats with fluroxypyr methylheptyl ester. *Teratology* 51:P12.
19. Carney, E.W., Schroeder, R. and Breslin, W.J., 1995. Developmental toxicity study in rats with nitrapyrin. *Teratology* 51:P13.
20. Carney, E.W., Liberacki, A. Bartels, M. and Breslin, W.J. Identification of proximate toxicant for ethylene glycol developmental toxicity using rat whole embryo culture. *Teratology* (in press)..
21. Carney, E.W. Maternal physiological disruption. In: *Handbook of Experimental Pharmacology: Drug Toxicity in Embryonic Development*. Daston, G. and R. Kavlock, eds. Springer-Verlag (in press).
22. Carney, E.W. Preimplantation Embryogenesis. In: *Comprehensive Toxicology*. Sipes, I.G., McQueen, C.A. and Gandolfi, A.J., eds. Pergamon, Oxford (in press).
23. Carney, E.W., Breslin, W.J., Pottenger, L.H., Johnson, K.A. and Corley, R.A., 1995. Comparative developmental toxicity of the ethylene glycol ether metabolite, methoxyacetic acid, and the propylene glycol ether metabolite, methoxypropionic acid, in New Zealand White rabbits. (In preparation)

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WORKSHOPS/SYMPOSIA

Member of Expert Panel for Ethylene Glycol: Institute for the Evaluation of Health Risks (IEHR) Pilot Evaluative Process for Assessing Human Developmental and Reproductive Toxicity of Agents. January, 1993, Williamsburg, VA. Published in: Reprod. Toxicol 9: 61-95 (1995); Reprod. Toxicol. 9: 175-210 (1995).

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