



INDIANA UNIVERSITY

BORKENSTEIN  
COURSE

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*of* Law in Action

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Curriculum Vitae  
of  
James G. Wigmore

**James G. Wigmore**  
**Forensic Alcohol Toxicologist**

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Derome Award Recipient- 2005 \*

**STATEMENT OF QUALIFICATIONS**

**FULL NAME**

James Gregory WIGMORE

**EMPLOYMENT STATUS**

1976 –2005

Senior Forensic Scientist, Ministry of the Solicitor General,  
Centre of Forensic Sciences Toxicology Section

2004-

Faculty member at the University of Indiana, Bloomington of  
the Center for Law in Action, R.F. Borkenstein course on  
Alcohol and Highway Safety: Testing, Research and  
Litigation.

2005-

Private practice

\* The Derome Award is the most prestigious of the Canadian Society of Forensic Science and is presented in recognition of outstanding contributions to the field of forensic science. It has only been awarded three times since 1996.

## **TRAINING AND EXPERIENCE**

Analyst - Section 254(1) C.C. for Ontario and New Brunswick  
Senior course instructor - Breathalyzer and Intoxilyzer 5000C Technician Training Program  
Presented a scientific workshop on the "Forensic Alcohol Toxicology of Drinking Drivers" at a Joint International Forensic Science Meeting, Orlando Florida, September 2004  
Presented at a scientific Alcohol Workshop at the joint meeting of the Canadian Society of Forensic Science and Canadian Identification Society, University of Windsor, 2006  
Internal training in the Toxicology Section of the Centre of Forensic Sciences  
Backup Centre Receiving Officer  
Abstracted, reviewed, categorized and computerized approximately 6,200 references in forensic alcohol toxicology including blood and breath alcohol testing.  
Analysed over 2,000 biological specimens for alcohol and other drugs in Coroner's investigations, impaired driving and related cases, sexual assault cases and homicide cases.  
Lectured and/or demonstrated in various areas of forensic toxicology to: High Schools, Insurance Adjusters Association of Ontario, Medico-Legal Society, Canadian Bar Association, Criminal Lawyers Association, Law Society of Upper Canada, Metro Toronto Public Complaints Commission, Crown Attorneys Meetings and Educational Courses, Toronto Society for Clinical Chemistry, University of Toronto, American Academy of Forensic Science, International Association for Chemical Testing, Provincial Judges (Family Division), Provincial Judges (Criminal Division) Association, and the Select Justice Committee of the Ontario Legislature.  
Testified on breath alcohol analysis, impairment of driving ability by alcohol and alcohol pharmacokinetics in a Military Court Martial in Lahr, Germany.  
Testified in various areas of forensic toxicology in Alcohol and Gaming Commission hearings, civil cases, Coroner's Inquests, New Brunswick criminal court, and in all levels of criminal court in Ontario (Ontario Court of Justice and Superior Court of Justice).

## **ACADEMIC QUALIFICATIONS**

B.Sc. - University of Toronto, Faculty of Arts and Science, 1980

## **OTHER COURSES**

Biological Principles of Pharmacology and Toxicology, University of Toronto, 1981-1982  
Interdisciplinary Toxicology, University of Toronto, 1982-1983  
Pharmacokinetics and Drug Interpretation, RCMP, Ottawa, 1984  
GC/Mass Spectrometry Course, Finnigan-MAT Institute, 1984  
Regional Coroner's Course, Ontario Fire College, 1985  
Supervision of Breath Tests for Intoxication Program, by Professor Borkenstein, University of Indiana, Bloomington, 1986  
Pharmacology and Toxicology of Opioids, Modern Practice of Forensic Toxicology: Current Status and Future Trends. Workshops at American Academy of Forensic Science, Cincinnati, Ohio, February 1990  
Pulmonary Function Testing in Industry, School of Continuing Studies, University of Toronto, May 1990  
Intoxilyzer 5000 Breath Alcohol Analysis Instrument Operation, Maintenance and Calibration, CMI Inc., Owensboro, Kentucky, September 1992  
Intoxilyzer 5000 Breath Test Operator Training Course, Bureau of Criminal Apprehension Laboratory, Minneapolis, Minnesota, December 1992  
Alcotest 7410 PA3 Level II Training Course, Draeger Canada, Mississauga, February 1994  
Educational Course for Coroners. Toronto, 1983, 1998, 1999

## **PUBLICATIONS**

### **REPORTS**

- WIGMORE, J.G.**, and HANADA, A., "An Evaluation of the ToxTrap and SM-8 Silica Gel Containers" A report submitted to the Alcohol Test Committee of the Canadian Society of Forensic Science, 1984
- WIGMORE, J.G.**, "The Effect of Temperature on Breath Alcohol Concentration: A Review of the Literature and a Report to the Chairman of the Alcohol Test Committee of the Canadian Society of Forensic Science, 14pp, 1992
- WIGMORE, J.G.**, "Short Evaluation of the Alcotest 7410 GLC", A report submitted to the Alcohol Test Committee of the Canadian Society of Forensic Science, 11pp, 1995
- WIGMORE, J.G.**, "Evaluation of the Alco-Sensor IV RBT IV (Evidential Instrument)", A report submitted to the Alcohol Test Committee of the Canadian Society of Forensic Science, 11pp, 1995
- WIGMORE, J.G.**, "Evaluation of the Alco-Sensor IV Screener (PWF and DigiWarn Models)", A report submitted to the Alcohol Test Committee of the Canadian Society of Forensic Science, 14pp, 1995
- WIGMORE, J.G.**, "Aspects of Ethanol in Forensic Toxicology", Medical, Scientific and Legal Aspects of Ethanol in Forensic Casework, American Academy of Forensic Sciences, (Workshop) San Francisco, California, 25pp, 1998

### **ARTICLES**

- WIGMORE, J.G.**, "Salting-Out of Volatiles Analysed by Headspace Gas Chromatography", *Toxi-Logic*, 9(2), 1984
- CHARLEBOIS, R.C., and **WIGMORE, J.G.**, "An Unusually High Postmortem Blood Alcohol Concentration", *Toxi-Logic* 9(3): 1-3, 1984
- WIGMORE, J.G.**, and MOFTAH, I., "A Case of Methanol Ingestion Detected by the Breathalyzer", *Toxi-Logic* 9(4): 10-12, 1984
- WIGMORE, J.G.**, "Elevated Acetone Concentrations and Trauma, Some Case Reports", *Toxi-Logic* 10(3): 18-22, 1985
- WIGMORE, J.G.**, "Preliminary Testing of the AT-5 AlcoholTest", *Toxi-Logic*, 10(3): 26-28, 1985
- WIGMORE, J.G.**, "The Variability of the Urine-Blood Alcohol Ratio", *Toxi-Logic* 10(4): 15-17, 1985
- WIGMORE, J.G.** and WARD, M.J., "The Incidence of Ethanol and Acetone in the Blood and Urine of Victims of Sexual Assault", *Can. Soc. Forensic Sci. J.*, 19(1): 49-58, 1986
- WARD, M.J., and **WIGMORE, J.G.**, "Elevated Acetone Concentrations in Hypothermia Deaths", *Toxi-Logic*, 11(2): 4-7, 1986
- WIGMORE, J.G.**, and BELL, A.A.H., "Analysis of Potassium Dichromate Breath Test Solution After Sixteen Years Storage", *Toxi-Logic* 11(2): 13-14, 1986
- WIGMORE, J.G.**, "The Effect of Ventolin and Isuprel on the Breathalyzer Result", *Toxi-Logic* 11(3): 13-14, 1986
- WIGMORE, J.G.**, and WARD, M.J., "Some Toxicologic Findings on Suspected Hypothermia Victims", [Abstract], *Can. Soc. Forensic Sci. J.* 19(4): 284, 1986
- MAYER, J.M., **WIGMORE, J.G.**, WARD, M.J. and HALLETT, R.A., "An Analysis of the Apparent Blood: Breath Alcohol Ratios for Ethanol in Human Subjects", [Abstract], *Can. Soc. Forensic Sci. J.* 19(4): 283-284, 1986
- MCAULEY, F. and **WIGMORE, J.G.**, "Case Report: An Unusual Case of Carbon Monoxide Poisoning", *Can. Soc. Forensic Sci. J.* 20(2): 83-86, 1987
- WARD, M.J., **WIGMORE, J.G.**, and McMEnamin, P.J. "A Headspace Gas Chromatographic Method for the Determination of Total Ketone Body Concentrations in Blood: Analysis of Samples Collected From Victims of Sexual Assault. *Can. Soc. Forensic Sci. J.* 20: 107-117, 1986.
- WIGMORE, J.G.**, WARD, M.J. and MCAULEY, F., "Two Suspected Cases of Carbon Monoxide Poisoning", *Toxi-Logic* 12(3): 68-70, 1987
- WIGMORE, J.G.**, "An Unusually High Blood Acetone Concentration in a Solvent Abuser", *Toxi-Logic* 13(1): 19-20, 1988
- WIGMORE, J.G.**, MCAULEY, F., and WARD, M.J., "Carboxyhemoglobin and Ethanol

Concentrations in the Blood of Victims of Fire and Carbon-Monoxide Related Non Fire Deaths", [Abstract], Can. Soc. Forensic Sci. J. 21(4): 195, 1988

**WIGMORE, J.G.**, WARD, M.J., and WELLS, J., "Assessing Breath Test Estimation of Blood Alcohol Concentration", [Letter], J. Analytical Toxicology, 13(4): 244-245, 1989

LUCAS, D.M., and **WIGMORE, J.G.**, "The Broken Telephone Effect", Can. Soc. Forensic Sci. J., 22(2): 225-226, 1989

**WIGMORE, J.G.**, "Current Scientific Issues in Drinking and Driving", in Breathalyzer Returns, Toronto Department of Education, The Law Society of Upper Canada, J1-J5, 1989 published in J. Motor Vehicle Law, 2(2): 195-222, 1990

**WIGMORE, J.G.**, "A Bibliography of Blood Alcohol Concentration as Measured by Breath Alcohol Testing Instruments and Impairment of Skills Related to Driving", Toxi-Logic 14(2, 3): 30-36, 1989

**WIGMORE, J.G.**, and LUCAS, D.M., "The Scientific Validity of the Decision in R v Phillips", J. Motor Vehicle Law, 2(1): 43-57, 1990

**WIGMORE, J.G.**, "The Effect of Ventolin® on the Breathalyzer® Result of an Asthmatic Subject", Toxi-Logic 15(1): 5-7, 1990

**WIGMORE, J.G.**, and ROBINSON, D.W., "Incorrect Reanalysis of Breath/Blood Alcohol Data" [Letter], J. Anal. Toxicol. 14(6): 391-392, 1990

**WIGMORE, J.G.**, and PLETIKOS, J., "A Three Year Study of Forensic Cases in Which the Blood Alcohol Concentration Exceeded 400mg/dL.", [Abstract], Can. Soc. Forensic Sci. J., 23(4): 144, 1990

**WIGMORE, J.G.**, and LINTLOP, S.P., "Is There a Doctor in the Court?" [Letter], Can. Med. Assoc. J., 144(5): 544, 1991

**WIGMORE, J.G.**, Alcohol bibliography of 357 references regarding the "Effect of Alcohol on Driving Related Skills", Toxi-Logic, 16(1): 13-43, 1991

**WIGMORE, J.G.**, and McAULEY, F., "Case Report: Two Deaths Due to Asphyxiation in a Manhole and Analysis of the Manhole Gases", Can. Soc. Forensic Sci. J., 24(1): 1-4, 1991

LUCAS, D.M., and **WIGMORE, J.G.**, "Breath Tests for Alcohol" Forensic Breath Testing for Alcohol, An Expert's Course, June 2-6, 1991, University of Ottawa

**WIGMORE, J.G.**, "Alcohol-Related Fatal Motor Vehicle Accidents in 1904", J. Motor Vehicle Law, 3(2): 198-199, 1991

**WIGMORE, J.G.**, and MAMMOLITI, D.N., "Medico-Legal Application of Breath Alcohol Testing in 1927", J. Motor Vehicle Law, 3(3): 335-337, 1991

**WIGMORE, J.G.**, and ROOS, J., "The Effect of Lung Disease on the Accuracy of the Breath Alcohol Test", J. Motor Vehicle Law, 4(1): 1-9, 1992

**WIGMORE, J.G.**, "The Stability of Aqueous Ethanol Solutions After 13 Years Storage", [Letter], J. Forensic Sci., 37(3): 685, 1992

**WIGMORE, J.G.** "It's the Same Old Thing", International Association of Chemical Testers Newsletter, 3(2): 9, 1992

**WIGMORE, J.G.** "BLUTALKOHOLKONZENTRATION" A series of synopses of translated German papers, Society of Forensic Toxicologists Newsletter ToxTalk, 1992-

**WIGMORE, J.G.**, and MAMMOLITI, D.N., Comments on "Medico-legal Alcohol Determination: Implications and Consequences of Irregularities in Blood Alcohol Concentration vs. Time Curves" [Letter]. J. Analytical Toxicol., 17: 317, 1993

**WIGMORE, J.G.** "The Distribution of Ethanol in Postmortem Blood Samples" [Letter] J. Forensic Sci., 38(5): 1019-1020, 1993

**WIGMORE, J.G.**, and LUCAS, D.M., "The Intoxilyzer 5000C - A Computerized Infrared Evidentiary Breath Alcohol Instrument", J. Motor Vehicle Law, 5(2): 119-140, 1993

**WIGMORE, J.G.**, "ATEMALKOHOLKONZENTRATION" A series of synopses of translated German paper, International Association of Chemical Testers Newsletter, 1994.

LUCAS, D.M., and **WIGMORE, J.G.**, "Approved Screening Devices in Ontario", J. Motor Vehicle Law, 6(2): 189-195, 1994

**WIGMORE, J.G.**, PATRICK, J., and LIBMAN, R., "Evidentiary IR Breath Testing/Intoxilyzer 5000C", J. Motor Vehicle Law, 6(2): 189-195, 1994

CHARLEBOIS, R.C., CORBETT, M.R., and **WIGMORE, J.G.**, ‘Comparison of Ethanol Concentrations in Blood, Serum, and Blood Cells, for Forensic Application’, *J. Analytical Toxicol.*, 20: 171-178, 1996

RILEY, D., **WIGMORE, J.G.**, and YEN, B., ‘Dilution of Blood Collected for Medico-legal Alcohol Analysis by Intravenous Fluids’, *J. Analytical Toxicol.*, 20: 330-331, 1996

**WIGMORE, J.G.**, ‘An In Vitro Simulator Study of the Effect of Ethylene Glycol on the Breathalyzer Model 900A, the Intoxilyzer 500C and Alcotest 7410 GLC’, *Toxi-Logic* 21(1): 13, 1996

**WIGMORE, J.G.**, and LINTLOP, S., ‘The Effect of Diethyl Ether on the Intoxilyzer 5000C’, *IACI Newsletter*, 7(3): 17-18, 1996

**WIGMORE, J.G.**, and MOFTAH, I., ‘The Effect of Dimethylsulfoxide and Isopropyl Alcohol on Breathalyzer and Intoxilyzer Results’, *IACI Newsletter*, 8(2): 8, 1997

**WIGMORE, J.G.**, CORBETT, M., and LINTLOP, S., ‘Spirometric Testing and the Breathalyzer’ [Letter], *Can. Med. Assoc. J.*, 157(5): 510, 1997

**WIGMORE, J.G.**, ‘Kritische Anmerkungen zum Artikel von Kohler, Banaschak, und Brinkmann, *Blutalkohol* 34: 36-44, 1997’ [Letter], *Blutalkohol*, 34: 443-445, 1997

**WIGMORE, J.G.**, and CORBETT, M.R., ‘Profiles in Forensic Toxicology, Erik Matteo Prochet Widmark (1889-1945)’, *News and Views*, 43: 6-7, 1998

**WIGMORE, J.G.**, ‘The Mouth Alcohol Effect, 5, 10, 15, 20 Minutes or More? A Historical and Critical Literature Review and Original Data. (Presented at the 13<sup>th</sup> Annual IACT Meeting at Halifax, 2000), *IACI Newsletter*, 11(2): 15-17, 2000

**WIGMORE, J.G.**, and CHOW, B.L.C., ‘Case Report: Detection of Neo-Formation of Ethanol in a Postmortem Blood Sample Using N-Propanol and a Urine Sample’, *Can. Soc. Forensic Sci. J.*, 33(3): 145-149, 2000

LANGILLE, R.M., and **WIGMORE, J.G.**, ‘The Mouth Alcohol Effect After a Mouthful of Beer Under Social Conditions’, *Can. Soc. Forensic Sci. J.*, 33(4): 193-198, 2000

**WIGMORE, J.G.**, and LESLIE, G.M., ‘The Effect of Swallowing or Rinsing Alcohol Solution on the Mouth Alcohol Effect and the Slope Detection of the Intoxilyzer 5000’, *J. Analytical Toxicol.*, 25: 112-114, 2001

**WIGMORE, J.G.**, and WILKIE, M.P., ‘A Simulation of the Effect of Blood in the Mouth on Breath Alcohol Concentrations of Drinking Subjects’, *Can. Soc. Forensic Sci. J.*, 35(1): 9-16, 2002

LALONDE, B.R., WILKIE, M.P., and **WIGMORE, J.G.** Determination of the Mouth Alcohol Effect in Drinking Subjects. *ToxiLogic*, 27(1): 4-6, 2002

**WIGMORE, J.G.**, ‘Blood Alcohol Limit: The CMA is Right On’ [Letter], *Can. Med. Assoc. J.*, 167(7): 740, 2002

BUCZEK, Y., and **WIGMORE, J.G.**, ‘The Significance of Breath Sampling Frequency on the Mouth Alcohol Effect’, *Can. Soc. Forensic Sci. J.*, 35(4): 185- 193, 2002

**WIGMORE, J.G.**, ‘First Breath’ [Letter], *The Beaver*, 2, April/May 2003

WILKIE, M.P., **WIGMORE, J.G.**, and PATRICK, J.W., ‘The Performance of the Approved Screening Device, The Alcotest 7410 GLC in the Field: Low Incidence of False Positive Results in the Identification of Drinking Drivers’, *Can. Soc. Forensic Sci. J.*, 36(3): 165-171, 2003.

**WIGMORE, J.G.**, and BUGYRA, I.M., ‘Decreasing the Mouth Alcohol Effect by Increasing the Salivary Flow Rate’, *Can. Soc. Forensic Sci. J.*, 36(4): 211-216, 2003

**WIGMORE, J.G.**, HOUSE, C.J., and PATRICK, J.W., ‘Characteristics of Arrested Drinking Drivers With the Highest Intoxilyzer 5000C Results in Toronto: Drinking and Driving not Only at Night or on Weekends’, *Can. Soc. Forensic Sci. J.* 37(1): 1-8, 2004

**WIGMORE, J.G.**, and ELLIOT, M. ‘Case Report: Serum, Blood and Breath Alcohol Results in a Case of Impaired Driving Causing Bodily Harm’, *Can. Soc. Forensic Sci. J.* 37(4): 223-227, 2004

MARTIN, T.L., **WIGMORE, J.G.**, and WOODALL, K.L. ‘A Comparison of Blood Alcohol Concentrations Estimated From Drinking Histories of Drivers Charged With Over80 and Their Intoxilyzer 5000C Results’, *Can. Soc. Forensic Sci. J.* 37(4): 187-195, 2004

**WIGMORE, J.G.**, and PELLETIER, M.R., ‘Comments on the Paper Entitled Concentration Dependency of the BAC/BrAC (Blood Alcohol Concentration/Breath Alcohol Concentration) Conversion Factor During the Linear Elimination Phase by H.T. Haffner, et al. [Letter] *Int. J. Legal Med.* 119: 54-55, 2005

**WIGMORE, J.G.**, HOUSE, C.J., and LANGILLE, R.M. "Duplicate Breath Alcohol Testing: Should the Statutory Wait in Canada of At Least 15 Minutes Between Tests Be Changed?", *Can. Soc. Forensic Sci. J.* 38(1): 1-8, 2005

CHOW, B.L.C., and **WIGMORE, J.G.**, "Technical Note: The Stability of Aqueous Alcohol Standard Used in Breath Alcohol Testing After Twenty-Six Years Storage", *Can. Soc. Forensic Sci. J.* 38(1): 21-24, 2005

HOUSE, C., **WIGMORE, J.G.**, and LANGILLE, R., "A Re-Evaluation of the Paper- Field Performance of the Intoxilyzer 5000: A Comparison of Blood- and Breath- Alcohol Results in Wisconsin Drivers", *Toxi-Logic* 30(1): 4-5, 2005

**WIGMORE, J.G.**, "An Unusual Postmortem Urine – Blood Alcohol Ratio: Beware of Urine Dilution From Catheter Use", *Can. Soc. Forensic Sci. J.*, 39: 25-27, 2006

LANGILLE, R.M., HOUSE, C., and **WIGMORE J.G.**, "Readings in the Critical Zone (Between 80 and 99 mg/dL) and Apparent Over-Estimation of Blood Readings by the Intoxilyzer 5000C: Further Evaluation of the Blood and Breath Alcohol Results From the Data of Harding et al, *J. Forensic Sci.* 35(5): 1022-1028, 1990. *Toxi-Logic* 31: 11-13, 2006

PALMENTIER, J-P F.P., **WIGMORE, J.G.**, LANGILLE, R.M., and PATRICK, J. "Incidence of Invalid Sample Screen Messages on the Intoxilyzer 5000C Obtained From Arrested Drinking Drivers in Toronto. Is a 15 to 20 Minute Wait Period Warranted?" *Can. Soc. Forensic Sci. J.*, 39: 101-114, 2006

JONES, A.W., **WIGMORE, J.G.**, and HOUSE, C.J., "The Course of the Blood-Alcohol Curve After Consumption of Large Amounts of Alcohol Under Realistic Conditions", *Can. Soc. Forensic Sci. J.*, 39: 125-140, 2006

PALMENTIER, J-P F.P., LANGILLE, R.M., **WIGMORE, J.G.**, and PATRICK, J. **Authors' Response:** Incidence of Invalid Sample Screen Messages on the Intoxilyzer 5000C Obtained From Arrested Drinking Drivers in Toronto. Is a 15 to 20 Minute Wait Period Warranted? *Can. Soc. Forensic Sci. J.*, 40: 162-163, 2007

### **BOOKS/MANUALS**

HALLETT, R. and **WIGMORE, J.G.**, *Breathalyzer Model 900/900A Training Aid for Technicians in Ontario*, 1990

**WIGMORE, J.G.**, "A Bibliography of Forensic Aspects of Alcohols (1872-1991)", Forensic Science Foundation, 539 pp, 1992

**WIGMORE, J.G.** *Intoxilyzer 5000C Training Aid for Technicians in Ontario*, 1994

### **AWARDS**

H. Ward Smith Award, Canadian Society of Forensic Science, 1987

Director's Award, Centre of Forensic Sciences, 1989

Citation, Deputy Solicitor General of Ontario, 1992

Citation, Minister of Justice for work on the Alcohol Test Committee, 1999

Derome Award, Canadian Society of Forensic Sciences, 2005

### **MEMBERSHIPS IN SCIENTIFIC AND PROFESSIONAL SOCIETIES**

Canadian Society of Forensic Science Alcohol Test Committee (1992- 2005)

Canadian Society of Forensic Science, Toxicology Section, Member (1985-2005), Fellow (2005- )

American Academy of Forensic Sciences, Toxicology Section

The International Association of Forensic Toxicologists

International Association for Chemical Testing