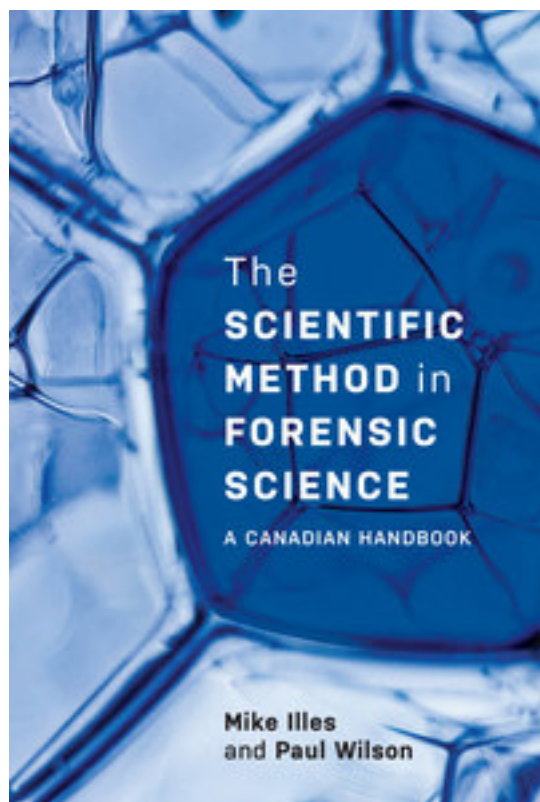


# The Scientific Method in Forensic Science

## A Canadian Handbook



Written for the Canadian forensic science student and the professional practitioner, this timely and practical handbook provides an experience-based learning tool. This text offers an understanding of scientific method and evidence-based analysis and how they relate to forensic science and its casework—from the crime scene to the courtroom—within the Canadian context. The authors explore the paradigm shift in forensic science, highlight basic skills like scientific reasoning and literature review, and untangle the complexities of ethics and bias, research design, critical thinking, and best practices for communication in various settings. Case examples and court testimonies are reviewed to underscore the importance of these concepts. By blending real-life examples with scientific concepts like validation, peer review, accountability, and transparency, *The Scientific Method in Forensic Science* is a fundamental read for students in introductory forensics, criminology, police studies, and anthropology. **\*\*FEATURES\*\***

- includes questions for critical thinking, suggestions for further reading, a glossary, and additional instructional popouts
- provides an experience-based learning opportunity for understanding the scientific method
- utilizes case studies and court transcripts to illustrate practical applications in a Canadian context

### Author Information

Mike Illes

**\*\*Mike Illes\*\*** is a Professor in the Trent University Forensic Science Undergraduate and Graduate Programs. Prior to this, he spent 24 years as a Canadian forensic science practitioner and instructed on forensic science in the United States, Switzerland, the Netherlands, Scotland, and other Canadian academic institutions.

Paul Wilson

**\*\*Dr. Paul Wilson\*\*** has participated in hundreds of cases and has testified in over 30 trials as an expert witness in DNA profiling and wildlife forensic science. He served as the founding Chair of the Professional Forensic Science Program at Trent University. Paul served as the Canada Research Chair in DNA Profiling, Forensics and Functional Genomics for two terms, 10 years, and is currently a Professor in the Biology Department at Trent University.

### Reviews

"A must-read for those onboarding into the fascinating world of forensic science research. The authors offer valuable perspectives for both the forensic science student and professional practitioner. As the Canadian forensic science landscape continues to flourish, this handbook so perfectly emphasizes the importance of applying the fundamentals of the scientific method first and foremost to everything we do."

—Dr. Theresa Stotesbury, Assistant Professor of Forensic Science, Ontario Tech University

"As a former forensic specialist and pioneer of the Bloodstain Analysis discipline in Canada, I can attest to the incredible learning value of this textbook for the practitioner, the academic, the researcher, and the many justice system stakeholders. I have witnessed the vacuum of knowledge and understanding pertaining to scientific method, critical thinking, and true evidence-based practice. This book fills that void by creating a learning format through the case studies, theoretical analysis, personal profiles, and thought-provoking questions and readings."

—J. V. N. Hawkes, Director of Global Policing, International Association of Chiefs of Police

### Table of Contents

Foreword, *\_Hélène LeBlanc\_*

Preface, *\_Mike Illes\_*

**\*\*Chapter 1:\*\*** Introduction: The Paradigm Shift in Forensic Science

**\*\*Chapter 2:\*\*** Concepts of Science and the Scientific Method

**\*\*Chapter 3:\*\*** Critical Thinking in Forensic Science

**\*\*Chapter 4:\*\*** How to Critically Review a Published Journal Article

**\*\*Chapter 5:\*\*** What the Literature Says: From Student to Expert

**\*\*Chapter 6:\*\*** The Use, Misuse, and Absence of Statistics in Forensic Science Casework

**\*\*Chapter 7:\*\*** Research Design for the Forensic Science Student and Practitioner

**\*\*Chapter 8:\*\*** The Importance of Ethics and Impartiality in Forensic Science

**\*\*Chapter 9:\*\*** The Key to Effective Communication in Forensic Science

Appendix: Exercise Answers

Index

### Related Books

*Police Response to Mental Health in Canada*

### Subjects

Sociology of Crime and Justice  
Science  
Anthropology  
Sociology  
Criminology and Police Studies

274 pages

6 x 9 inches

July 2020

ISBN: 9781773381633

Available at:

<https://www.canadianscholars.ca/books/the-scientific-method-in-forensic-science>

To request a review copy:

[info@canadianscholars.ca](mailto:info@canadianscholars.ca)

416-929-2774

Toll-Free: 1-800-463-1998

Richard Parent, Catherine Parent