

## **Curriculum Vitae – Shari Forbes**

Dr Shari Forbes  
Faculty of Science  
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### **Educational Degrees**

- 2000 - 2003     Ph.D. in Science (Forensic Chemistry)  
Centre for Forensic Science, University of Technology Sydney, Australia
- 1996 - 1999     BSc (Honours) Applied Chemistry – Forensic Science  
First Class Honours  
University of Technology Sydney, Australia

### **Employment History**

- 2010 -            Associate Professor  
Faculty of Science, University of Ontario Institute of Technology
- 2009 - 2013     Adjunct Assistant Professor of Forensic Science  
College of Agricultural Sciences and Natural Resources, University of Nebraska Lincoln
- Adjunct Supervisor  
Department of Applied Chemistry, Curtin University of Technology, Australia
- 2006 -            Forensic Science Program Director  
Faculty of Science, University of Ontario Institute of Technology
- 2005 – 2010     Assistant Professor  
Faculty of Science, University of Ontario Institute of Technology
- 2003 - 2005     Postdoctoral Fellow / Associate Lecturer  
Centre for Forensic Sciences, University of Western Australia

### **Honours and Awards**

- 2011             Early Researcher Award, Ontario Ministry of Research and Innovation
- 2008             Junior Research Excellence Award, University of Ontario Institute of Technology
- 2007             Canada Research Chair in Decomposition Chemistry (Tier II)  
Natural Sciences and Engineering Research Council of Canada
- 2005             Alexander von Humboldt Research Fellowship (declined)  
Institute for Forensic Medicine, Ludwig-Maximilians-Universität, Munich, Germany
- Contributing to Australian Scholarship and Science (CASS) Foundation Award
- 2004             Australian Institute of Nuclear Science and Engineering Award  
National Institute of Forensic Science Award  
Australian and New Zealand Forensic Science Society Award

### Professional Appointments and Affiliations

2011 -	Member of Advisory Committee, Ontario Centre of Forensic Sciences, Ministry of Community Safety and Correctional Services
2010 -	Board of Directors, Canadian Society of Forensic Sciences Officer for Canada, International Union of Geological Sciences, Initiative on Forensic Geology
2007 - 2009	Member, Geoforensics and Information Management for Crime Investigation Network
2006 -	Member, Canadian Society of Forensic Sciences Member, Canadian Identification Society
2003 - 2005	Past Member, British Association of Human Identification
2000 - 2005	Past Member, Australian and New Zealand Forensic Science Society Past Member, The Royal Australian Chemical Institute

### Research Grants (as Principal Investigator)

Year	Granting Agency, Investigators, Research Project	Total Value
2011-2015	Natural Sciences and Engineering Research Council (NSERC) of Canada, Discovery Grant; Forbes, S.L. (PI), <i>Novel Chemical Methods for Estimating Time Since Death</i>	\$175,000
2011-2015	Ontario Ministry of Research and Innovation, Early Researcher Award; Forbes, S.L. (PI), <i>An Interdisciplinary Investigation of Decomposition Chemistry</i>	\$190,000
2010-2012	NSERC Strategic Project Grants; Forbes, S.L. (PI), <i>On-site Detection of Accelerant Signatures at Suspected Arson Scenes</i>	\$265,250
2009	NSERC Research Tools and Instruments; Forbes, S.L. (PI), Holdway, D. (CI), Bonetta, D.T. (CI), Strap, J. (CI), Desaulniers, J.P. (CI), <i>Interdisciplinary Research Using GC-MS</i>	\$132,225
2007-2012	Canada Research Chair Tier II; Forbes, S.L. (PI), <i>Decomposition Chemistry</i>	\$500,000
2007	Canada Foundation for Innovation (CFI), Leaders Opportunity Fund; Forbes, S.L. (PI), <i>Development of a Decomposition Chemistry Laboratory and Geoforensic Research Facility</i>	\$125,000
2007	Ontario Research Fund (ORF), Research Infrastructure; Forbes, S.L. (PI), <i>Development of a Decomposition Chemistry Laboratory and Geoforensic Research Facility</i>	\$125,000
2007-2009	NSERC Promo Science (Outreach Grant); Forbes, S.L. (PI) and Nugent, K. (CI), <i>Crime Scene Science Camp</i>	\$41,000
2006-2010	NSERC Discovery Grant; Forbes, S.L. (PI), <i>Environmental Parameters, Physiological Factors and the Chemistry of Decomposition</i>	\$160,000
2005	Australian Institute of Nuclear Science & Engineering; Forbes, S.L. (PI), Zoppi, U. (CI), <i>Dating Skeletal Remains of Forensic Interest: Contamination Issues and Further Analysis</i>	\$10,000
2004	Australian Academy of Forensic Science, Oscar Rivers Schmalzbach Foundation Grant; Forbes, S.L. (PI), Dadour, I.R. (CI), <i>Time Since Death: A Novel Approach to Dating Skeletal Remains</i>	\$5,000
2004	Australian Institute of Nuclear Science & Engineering; Forbes, S.L. (PI), Zoppi, U. (CI), <i>Bomb Pulse (14C) Dating of Anthropological Skeletal Remains of Forensic Interest</i>	\$12,000

**Book Chapters**

1. Carter, D.O., Forbes, S.L. and Tibbett, M. Soil Microbial Ecology as Forensic Taphonomy, in C.H. Wecht (ed.), *Forensic Sciences*, Volume 1, Matthew Bender, San Francisco, CA. 2009, pp. 23B.01-23B.100
2. Forbes, S.L. and Dadour, I.R. The Soil Environment and Forensic Entomology, in J.H. Byrd and J.L. Castner (eds.), *Forensic Entomology: The Utility of Arthropods in Legal Investigations*, 2<sup>nd</sup> Edition, Taylor and Francis, Boca Raton, FL, 2009, pp. 409-428.
3. Stokes, K.L., Forbes, S.L., Benninger, L.A., Carter, D.O. and Tibbett, M. Decomposition Studies using Animal Models in Contrasting Environments: Evidence from Temporal Changes in Soil Chemistry and Microbial Activity, in K. Ritz, L. Dawson, and D. Miller (eds.), *Criminal and Environmental Soil Forensics*, Springer, NY. 2009, pp. 357-378
4. Forbes, S.L. & Nugent, K. Dating of Anthropological Skeletal Remains of Forensic Interest, in S. Blau and D. Ubelaker (eds.), *Handbook of Forensic Anthropology and Archaeology: World Archaeological Congress Research Handbooks in Archaeology*, Left Coast Press, Walnut Creek, CA. 2009, pp. 164-173
5. Forbes, S.L. Decomposition Chemistry in a Burial Environment, in M. Tibbett and D. Carter (eds.), *Soil Analysis in Forensic Taphonomy: Chemical and Biological Effects of Buried Human Remains*, CRC Press, Boca Raton, FL. 2008, pp. 203-224
6. Forbes, S.L. Potential Determinants of Postmortem and Postburial Interval of Buried Remains, in M. Tibbett and D. Carter (eds.), *Soil Analysis in Forensic Taphonomy: Chemical and Biological Effects of Buried Human Remains*, CRC Press, Boca Raton, FL. 2008, pp. 225-246
7. Forbes, S.L. Forensic Chemistry: Applications to Decomposition and Preservation, in M. Oxenham (ed.), *Forensic Approaches to Death, Disaster and Abuse*, Australian Academic Press, QLD, 2008, pp. 233-242

**Selected Publications**

1. Forbes, S.L., Wilson, M.E.A., and Stuart, B.H. Examination of adipocere formation in a cold water environment. *International Journal of Legal Medicine*. Published Online May 1, 2010. DOI 10.1007/s00414-010-0460-6
2. Swann, L.M., Forbes, S.L., and Lewis, S.W. A capillary electrophoresis method for the determination of selected biogenic amines and amino acids in mammalian decomposition fluid. *Talanta*. 81: 1697-1702, 2010.
3. O'Brien, R.C., Forbes, S.L., Meyer, J., and Dadour, I.R. Forensically significant scavenging guilds in the southwest of Western Australia. *Forensic Science International*. 198:85-91, 2010
4. Swann, L., Chidlow, G.E., Forbes, S.L., and Lewis, S.W. Preliminary studies into the characterization of chemical markers of decomposition for geoforensics. *Journal of Forensic Sciences*. 55: 308-314, 2010.
5. Van Belle, L.E., Carter, D.O., and Forbes, S.L. Measurement of ninhydrin-reactive nitrogen influx into gravesoil during aboveground and belowground carcass (*Sus scrofa*) decomposition. *Forensic Science International*. 193: 37-41, 2009.
6. Stokes, K.L., Forbes, S.L. and Tibbett, M. Freezing skeletal muscle tissue does not affect its decomposition in soil; evidence from temporal changes in tissue mass, microbial activity and soil chemistry based on excised samples. *Forensic Science International*. 183: 6-13, 2009.
7. Watson, C.J. and Forbes, S.L. An investigation of the vegetation associated with grave sites in southern Ontario. *Canadian Society of Forensic Science Journal*. 41: 199-207, 2008.
8. Benninger, L.A., Carter, D.O., and Forbes, S.L. The biochemical alteration of soil beneath a decomposing carcass. *Forensic Science International*. 180: 70-75, 2008
9. Voss, S.C., Forbes, S.L., and Dadour, I.R. Decomposition and insect succession on cadavers inside a vehicle environment. *Forensic Science, Medicine, and Pathology*. 4: 22-32, 2008

10. Forbes, S.L., Stuart, B.H., Dent, B.B. The effect of the burial environment on adipocere formation. *Forensic Science International*. 154:24-34, 2005
11. Forbes, S.L., Dent, B.B., Stuart, B.H. The effect of soil type on adipocere formation. *Forensic Science International*. 154:35-43, 2005
12. Forbes, S.L., Stuart, B.H., Dent, B.B. The effect of the method of burial on adipocere formation. *Forensic Science International*. 154:44-52, 2005
13. Forbes, S.L., Stuart, B.H., Dadour, I., and Dent, B.B. A preliminary investigation of the stages of adipocere formation. *Journal of Forensic Sciences*. 49:566-574, 2004
14. Dent, B.B., Forbes, S.L., Stuart, B.H. Review of human decomposition processes in soil. *Environmental Geology*. 45:576-585, 2004
15. Forbes, S.L., Keegan, J., Stuart, B.H., and Dent, B.B. A gas chromatography-mass spectrometry method for the detection of adipocere in grave soils. *European Journal of Lipid Science and Technology*. 105:761-768, 2003

### Research Areas & Technical Experience

**Decomposition chemistry:** Analysis of lipid and protein degradation products in soft tissue and soil using a range of instrumental techniques including GC-MS, LC-MS, CE, FTIR, and UV/Vis spectroscopy

**Volatile Organic Compounds:** Analysis of VOCs produced by decomposition; profiling decomposition scent; cadaver dog training aids; analysis conducted using TD-GC-MS

**Geoforensics:** Locating and recovering buried anomalies including weapons, drugs, currency, and human remains using soil and vegetation indicators and ground penetrating radar

**Fire Chemistry:** Detection of accelerant signatures in lung tissue, blood samples and skin, using dynamic and passive headspace analysis followed by GC-MS