



Centre for Forensic Science Newsletter December 2016

From the Director's Desk:

Dear Centre's Members, Associates, Colleagues and Friends,

This issue marks the end of another very active and successful year. More than 20 years since its inception, the Forensic Science program at UTS continues to go from strength to strength. 415 undergraduate students, 16 Honours, 36 Masters and 25 High Research Degree students were enrolled at UTS this year. Equally important, all Student Satisfaction Surveys returned results that were overwhelmingly positive and significantly superior to the University and Faculty benchmarks. The interest in the [new forensic science degree](#) is strong. Our research output is more productive than ever and our research earnings remain strong. 2016 saw the start of the operations of the Australian Facility for Taphonomic Experimental Research (AFTER). Further, CFS members made significant contributions to a number of international conferences and expert working groups in Australia and overseas. Most importantly, we also developed our new Strategic Plan entitled CFS+: Growth Strategy for the Centre for Forensic Science 2017-2020. The latter presented a clear forensic science philosophy and identified our directions for the next three years to the University Senior Executive. The feedback so far has been very positive.

With all this in mind, I look forward to coming back in 2017 for another busy year ahead, including a strong presence at the 21st triennial meeting of the international Association of Forensic Sciences in Toronto and the biennial meeting of the International Fingerprint Research Group to only mention a couple of key events in 2017.

It has been a privilege to lead such a talented and committed team this year – congratulations on all your achievements! I thank all our partners in Australia and overseas. Finally I wish everyone a safe and happy festive season and a healthy and successful year in 2017

Prof. Claude Roux



Visitors

RibLock Tour Down Under, 15 September 2016.

As part of the School of Mathematical and Physical Sciences Seminar Series, Prof. Olivier Ribaux, School of Criminal Justice, University of Lausanne, Switzerland and Dr. Eric Lock, Forensic Science Department, Police of Geneva, Switzerland presented their 'duet' entitled 'The hidden value of forensic science'. Their presentation was very well attended and focused on the analysis of serial crimes, as well as the intelligent triage of biological specimen collected from crime scenes. Their very relevant examples illustrated how usually hidden contributions of forensic science can be valorized in better formulated models. They repeated their efforts at the ANZFSS Symposium in Auckland one week later.

Prof. Oliver Hofstetter, Northern Illinois University, completed his second visit of UTS at the end of September. He spent two months with the Fingerprints Group to share his expertise on bio-recognition and contribute to our efforts in fingermark detection research.



Get together with Profs. Ribaux and Hofstetter and Dr. Lock

INTREPID Forensics Programme Visit, 15 September 2016

Rolanda Lam, Alicia Khuu, and Matthieu Maitre gave a tour of our facilities to Alexander Smyth and Francisco Goncalves from the University of Leicester INTREPID Forensics programme. Such a visit was a direct outcome of being able to attend the ESC Doctoral School (see Page 2).

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Attendance at the ESC Doctoral School

- by Dilan Seckiner and Matthieu Maitre



Dilan Seckiner and Matthieu Maitre attended the 2016 ESC Doctoral School (University of Lausanne) held in Les Diablerets (Switzerland). The experience for both of us was overwhelmingly positive for not only professional development, but also personal development as PhD candidates.

Dilan and Matthieu's researches respectively in forensic gait analysis and OGSR analysis flourished through meeting world leading experts within various multidisciplinary forensic fields. Conversing with them about the research conducted allowed us to view different perspectives and opinions of others we had not considered. Overall, it was an experience that was valuable and impacted positively on our research as we discussed aspects of our project with experts who not only welcomed us warmly, but provided us with support and guidance. It was an amazing experience that we shall never forget. Furthermore, University of Lausanne gathers an important forensic scientist community who were able to improve our projects by giving numerous constructive feedbacks. Discussion and the several workshops allow the expansion of our minds by forcing us to think within diverse forensic fields.

More specifically Dilan's research revolves around forensic gait analysis with the quantification of CCTV distortion, whereas Matthieu's research concerns the interpretation of the organic compounds present in gunshot residues which spread around the shooter during the discharging process thus referred as organic gunshot residues (OGSR). More specifically within Matthieu's research, the question approached concerns the persistence and transfer of such traces. For how long might we detect those compounds?

An additional key factor is the risk of false positive due to the contamination of surfaces of interest such as the person of interest's hands. Is the secondary transfer of OGSR traces possible? May police officers transfer gunshot residues on the freshly arrested POI? Transfer and persistence aspects of OGSR are crucial for an adapted, coherent and representative interpretation of such traces in order to be as close as possible to the courtroom concerns.

The reason for Dilan's research in Forensic Gait Analysis stems from the universal presence of surveillance cameras. Closed Circuit Television (CCTV) images, contain distortions resulting from camera specification and environmental influences. Consequently, optimum identification of a POI would entail quantifying the wide range of image distortions present. Additional challenges exist when facial features are concealed, thus impeding facial analysis. One solution to overcome this, is the morphometric assessment of the body; one aspect of 'body mapping'. Further, as POIs are frequently recorded in motion, integrating gait analysis could add important information relating to individuality. Which then brings to the crux of the research, where distinct features of the body during gait (stance, walk, and run) are thought to provide additional information of a POI from surveillance footage?

Additionally, Dilan's meeting with Professor Didier Meuwly within the Netherlands Forensic Institute was very eye opening, as aspects of her research involving the broader spectrum of Forensic Intelligence was introduced. The meeting allowed considering parts of the research previously not considered within the biometrics field and thus in turn, permits the research to be more robust and detailed.



Congratulations to Matthieu Maitre on winning The Faculty of Science September Paper of the Month (for Mathematical and Physical Sciences) for Maitre, M., et al. 2016, 'Current perspectives in the interpretation of gunshot residues in forensic science: A review.', *Forensic Sci Int*, vol. 270, pp. 1-11.



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2016 Forensic Science Honours Completions and Presentations

The Centre had a large and successful programme of Honours degree research projects in 2016. The projects which have been completed in Spring 2016 are:

- Anna Agius - Can we obtain knowledge about the country of origin of people who have learnt English as a second language through their handwriting?
- Rhiannon Alder - Development of a Raman Spectroscopic Method for the Determination of Illicit Substances in Seized Materials.
- Baree Chilcote - Profiling the scent of weathered training aids for blood-detection dogs.
- Laura Clancy - Development of colour tests for screening new psychoactive substances.
- Samara Garrett-Rickman - Validation of the Compass DNA kit.
- Felicia Gong - Development of a capillary-driven lab on a chip device for the analysis of explosives.
- Timothy Hudson - Document examination techniques on coated paper stock.
- David Kallo - An investigation into the effects of one-step luminescent cyanoacrylate fuming on DNA analysis.
- Joshua Klingberg - Evaluating the forensic use of differential scanning calorimetry (DSC) for chemical profiling
- Zacchariah Knoebel - comparison of human and pig decomposition odour profiles in an Australian environment using comprehensive two-dimensional gas chromatography - time-of-flight mass spectrometry (GCxGC-TOFMS)
- Timothy Lee - Gold versus silver, a comparison of two fingerprint detection techniques.
- Darshil Patel - Volatile profiling of human remains during the early postmortem period in an outdoor environment.
- Elisha Prasad - The recovery of DNA from cartridge cases
- Esther Scott - Metal-Organic frameworks for latent fingerprint detection.

- Kyle Skinner - Enhancing capabilities in the restoration of obliterated serial numbers on metal firearms.
- Jingya Yan - Development and validation of a LC MS/MS method for quantifying neurotransmitters in urine.
- Daniel Zammitt - Development and Validation of an Analytical Method for Screening and Quantitative Determination of Organophosphorus Pesticides in Post-mortem Blood using High Resolution Mass Spectrometry.

There were also a number of completed MSc coursework research projects this year:

- Yui Nam Chiu - Evaluation and Comparison of silicone and dental stone on three-dimensional impressions.
- Jeimylo Martinez - Chemical Development of Latent Marks on Gel Lifters
- Victoria Lau - The influence of physical activity upon the population of extraneous fibres on cotton t-shirts.

A strong cohort of undergraduate students have expressed interest in starting an Honours research project in the Centre for Autumn semester 2017, which looks set to continue the standard and quantity of research output we have seen this year.

Congratulations

- Rebecca Buis, Nathan Charlton, Kylie Jones, Verena Taudte and Maiken Ueland on their graduation to the degree of Doctor of Philosophy. Well Done!
- Dr. Katie Nizio was awarded the judge's choice Best Oral Presentation Award in the Rapid Fire Prize Session of the 33rd Combined Health Science Conference - New Horizons 2016 for her work on "differentiating bacteria associated with cystic fibrosis lung infections"
- Baree Chilcote was awarded first place at the annual Honours and Masters-by-Research Student Presentation Evening organised by the NSW Analytical and Environmental Chemistry Group of the Royal Australian Chemical Institute (RACI).
- Prof. Philip Doble was successful with an ARC Discovery grant, valued at \$416,000.
- Prof. Shari Forbes made The Analytical Scientist's 2016 Power List for the [top 50 most influential women in the analytical sciences](#).

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IAFS 2020 Sydney Bid



The Australian and New Zealand Forensic Sciences community has partnered with Business Events Sydney and the NSW Government to bid for the 22nd triennial meeting of the International Association of Forensic Sciences to be held in Sydney in 2020. The conference will be at the new International Convention Centre. The whole oceanic region sees this as an opportunity to advance Forensic Science and Medicine in our region and to collaborate internationally. We would appreciate your support for our bid at IAFS 2017 in Toronto, Canada in August 2017.

PhD Assessment Seminars

The following PhD students presented their Assessment (Stage 2) seminar:

- Alexandra Summerell - Development of Forensically Informative DNA Markers for Short-Beaked Echidna – Their Utility in Pedigree Testing and Application in Wildlife Trade
- Alicia Khuu - Dual Detection of DNA and Latent Fingermarks
- Dilan Seckiner - Forensic Gait Analysis: Morphometric Body Assessment with Associated CCTV Image Quantification
- Harmonie Michelot - Chemical profiling of methylamphetamine in an intelligence-led perspective

- Ka Tak (Andy) Wai - Evaluation of Novel Forensic DNA Typing Kits, Utilising a Next Generation Sequencing (NGS) Technology
- Liam Pullan - Identification of Bacteria in Forensically relevant Bodily Fluids
- Mattieu Maitre - Forensic Gunshot Residues Analysis: Detection and Interpretation of Organic Compounds
- Rebecca Lee- Assessing and Addressing the Current Criticisms of Fingerprint Evidence
- Vitor Taranto - Determining an Accurate Chemical Volatile Profile of Decomposition for use in Victim Recovery in Mass Disaster and Forensic Investigations

Congratulations to everyone!

Out and About

UTS:Science 2016 Research Day, Sydney, 17 November 2016

Prof. Claude Roux presented the achievements and directions of Centre for Forensic Science as part of the traditional annual Science Research Day.

Mackenzie de la Hunty, Alicia Khuu, and Rebecca Lee all had posters about their research in the area of fingerprints research. Dr Katie Nizio also had a poster as part of the new Early Career Researchers network.

Australasian Association of Fire Investigators (AAFI) Conference 2016, Sydney, 12-14 September 2016

Dr. Katie Nizio and PhD candidate Rolanda Lam attended this conference including "the learning is in the burning" workshop held at Fire and Rescue NSW Fire Investigation Research Unit in Londonderry.



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Out and About

Australian & New Zealand Forensic Science Society, 23rd International Symposium on the Forensic Sciences, Auckland, 18-22 September 2016

This symposium was fantastic in the tradition of ANZSS! CFS members delivered 33 oral presentations in Auckland (8.3% of the complete oral program!), many of them as keynotes, along with co-authoring a plenary, presenting many posters and delivering a workshop; all this in front of almost 900 delegates coming from all around the world. Prof. Shari Forbes and Esther Scott won a best presentation award - highly commended for their presentation on forensic taphonomy and fingerprints research, respectively. The CFS HDRs and ECRs team also won the prize of best-dressed team with their impersonation of Top Gun during the 'Under the Radar' social night. Congratulations everyone on this fantastic effort!



iFocus, Sydney, 10-11 November 2016

Prof. Claude Roux was invited to present a paper entitled 'Forensic Intelligence Reshaping Forensic Science?' at the NSW Police Force annual intelligence conference, iFocus. Some 300 intelligence professionals from the Police, Government organisations, universities and the private sector attended these very informative sessions.

Out and About

29th Annual Australian and New Zealand Society of Criminology (ANZSOC) conference, Hobart, 29 November-2 December 2016

The theme of the ANZSOC 2016 conference was 'Horizon Criminology'. More than 300 delegates from across Australia and New Zealand joined international guests at the conference venue to gain or share their knowledge and experience in criminological research, study and practice. Prof. Claude Roux was invited to speak as part of the sub-plenary session entitled 'Horizon Policing' organised by A/Prof. Roberta Julian, Director of the Tasmanian Centre for Law Enforcement Studies at the University of Tasmania. This conference also included presentations of prime forensic science concerns such as research on wastewater analysis, evaluation of the investigative contribution of forensic science, computational forensic criminology and evidence in cross-border investigations.

St Narsai Assyrian Christian College School Visit, 1 December 2016

Alicia Khuu, Ana Popovic and Rolanda Lam gave a joint talk and multiple forensic science workshops as part of this school visit at UTS. This was a great opportunity to show us outreach and promoting forensic science at UTS.

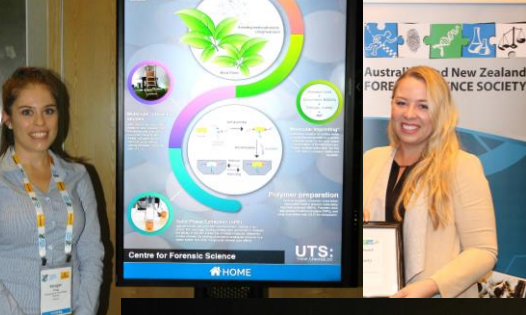
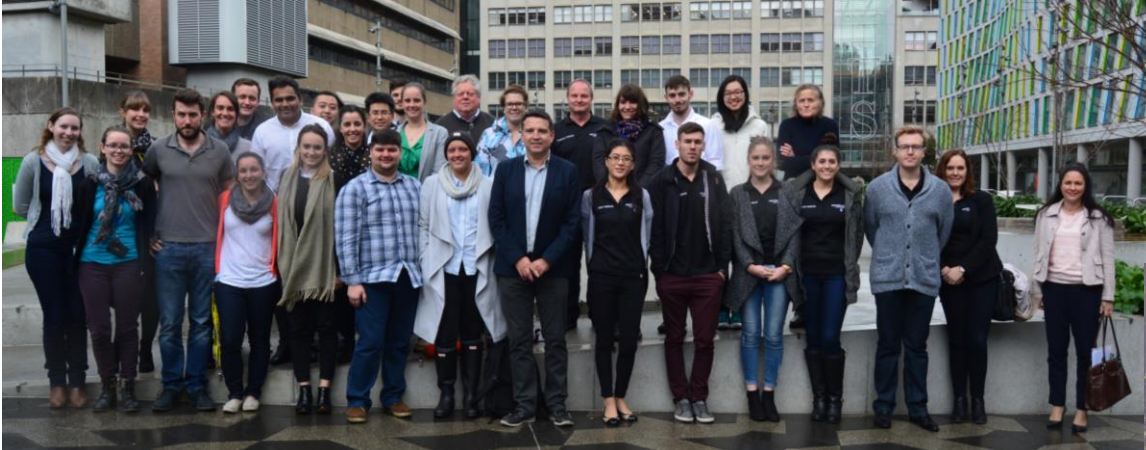
In the Media

- Lateline (ABC-TV) aired an exclusive look inside the [Australian Facility for Taphonomic Experimental Research \(AFTER\)](#) featuring Prof. Shari Forbes, Dr. Maiken Ueland and the Police Dog Unit - NSW Police Force.
- Catalyst (ABC-TV) featured Dr Mark Barash in their story about the [future of forensic DNA analysis](#).
- The Sydney Morning Herald interviewed the [Nos.E Team](#) (an electronic nose to detect illegal wildlife smuggling) featuring Prof. Shari Forbes and Dr. Maiken Ueland.
- Interview with [Prof. Shari Forbes and Kate Evans](#) on ABC Classic FM.



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2016 Showcase



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Publications

Armstrong, P., Nizio, K.D.; Perrault, K.A.; Forbes, S.L. Establishing the volatile profile of pig carcasses as analogues for human decomposition during the early postmortem period. *Heliyon* 2016, 2, e00070.

Bishop, D.P., Clases, D., Fryer, F., Williams, E., Wilkins, S., Hare, D.J., Cole, N., Karst, U. & Doble, P.A. 2016, 'Elemental bio-imaging using laser ablation-triple quadrupole-ICP-MS', *Journal of Analytical Atomic Spectrometry*, vol. 31, no. 1, pp. 197-202.

Breton, H., Kirkwood, A.E., Carter, D.O. & Forbes, S.L. 2016, 'The impact of carrion decomposition on the fatty acid methyl ester (FAME) profiles of soil microbial communities in southern Canada', *Journal of the Canadian Society of Forensic Science*, vol. 49, no. 1, pp. 1-18.

Bruenisholz, E., Prakash, S., Ross, A., Morelato, M., O'Malley, T., Raymond, T., Ribaux, O., Roux, C.P. & Walsh, S. The intelligent use of forensic data: an introduction to the principles. *Forensic Science Policy & Management: An International Journal*, 2016, 7(1-2), 21-29.

Callahan, D.L., Hare, D.J., Bishop, D.P., Doble, P.A. & Roessner, U. 2016, 'Elemental imaging of leaves from the metal hyperaccumulating plant *Noccaea caerulescens* shows different spatial distribution of Ni, Zn and Cd', *RSC Advances*, vol. 6, no. 3, pp. 2337-2344.

Cawley, A., Pasin, D., Ganbat, N., Ennis, L., Smart, C., Greer, C., Keledjian, J., Fu, S., and Chen, A. The potential for complementary targeted/nontargeted screening of novel psychoactive substances in equine urine using liquid chromatography-high resolution accurate mass spectrometry. (2016) *Analytical Methods* 8, 1789-1797

Chadwick, S.R., Alexander, J., Baker, A. & Ashmore, J. 2016, 'NMR Spectroscopy in First-Year Chemistry at the University of Technology Sydney' in Soulsby, D., Anna, L. & Wallner, A.S. (eds), *NMR Spectroscopy in the Undergraduate Curriculum: First Year and Organic Chemistry Courses Volume 2*, American Chemical Society, pp. 13-29.

Chua L., Head K., Thomas P. and Stuart B.H., Micro-characterisation of the colour palette of ceremonial objects from the Papua New Guinea Highlands: transition from natural to synthetic pigments, *Microchemical Journal* 124, 547-558 (2016).

Chua L., Maynard-Casely H., Thomas P., Head K. and Stuart B.H., Characterisation of blue pigments from ceremonial objects of the Southern Highlands in Papua New Guinea using vibrational spectroscopy and x-ray diffraction, *Vibrational Spectroscopy* 85, 43-47 (2016).

Publications

Evans, E., Costrino, C., do Lago, C.L., Garcia, C.D., Roux, C., Blanes, L. Determination of Inorganic Ion Profiles of Illicit Drugs by Capillary Electrophoresis (2016) *Journal of Forensic Sciences*, . Article in Press.

Forbes, S.L. & Carter, D.O. 2016, 'Processes and Mechanisms of Death and Decomposition of Vertebrate Carrion' in Benbow, M.E., Tomberlin, J.K. & Taron, A. (eds), *Carrion Ecology, Evolution, and Their Applications*, Taylor and Francis, Surrey, UK, pp. 13-30.

Forbes, S.L.; Troobnikoff, A.N.; Ueland, M.; Nizio, K.D.; Perrault, K.A. Profiling the decomposition odour at the grave surface before and after probing. *Forensic Sci. Int.* 2016, 259, 193-199.

Fu, S. 2016, *Adulterants in Urine Drug Testing in Makowski, G.S. (ed), Advances in Clinical Chemistry, Vol. 76*, Burlington: Academic Press, pp. 123-163.

Gunn, P. R., Roebuck, H., & Summerell, A. (2017) In press. *Forensic Biology*. In I. Freckleton & H. Selby (Eds.), *Expert Evidence*. Melbourne: Thomson Reuters.

Hare, D.J., Fryer, F., Paul, B., Bishop, D.P. & Doble, P.A. 2016, 'Characterisation of matrix-based polyatomic interference formation in laser ablation-inductively coupled plasma-mass spectrometry using dried micro-droplet ablation and its relevance for bioimaging', *Analytical Methods*, vol. 8, no. 41, pp. 7552-7556.

Hare, D.J., Raven, E.P., Roberts, B.R., Bogeski, M., Portbury, S.D., McLean, C.A., Masters, C.L., Connor, J.R., Bush, A.I., Crouch, P.J. & Doble, P.A. 2016, 'Laser ablation-inductively coupled plasma-mass spectrometry imaging of white and gray matter iron distribution in Alzheimer's disease frontal cortex.', *NeuroImage*, vol. 137, pp. 124-131.

Hunt A., Thomas P., James D., David B., Geneste J.-M., Delannoy J.-J. and Stuart B.H., The characterisation of pigments used in X-ray rock art at Dalakngalarr 1, central-western Arnhem Land, *Microchemical Journal* 126, 534-529 (2016).

Jones K., Benson S., Roux C. The forensic analysis of office paper using oxygen isotope ratio mass spectrometry. Part 1: Understanding the background population and homogeneity of paper for the comparison and discrimination of samples. *Forensic Science International*, 2016, 262, 97-107.



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Publications

Jones, K., Benson, S. & Roux, C. 2016, 'The forensic analysis of office paper using oxygen Isotope Ratio Mass Spectrometry, part 2: Characterising the source materials and the effect of production and usage on the $\delta^{18}\text{O}$ values of cellulose and paper', *Forensic Science International*, vol. 268, pp. 151-158.

Khuu, A., Chadwick, S., Spindler, X., Lam, R., Moret, S. & Roux, C. 2016, 'Authors' response to comments on "Evaluation of one-step luminescent cyanoacrylate fuming"', *FORENSIC SCIENCE INTERNATIONAL*, vol. 268, pp. E25-E26.

Khuu, A., Chadwick, S., Spindler, X., Lam, R., Moret, S., & Roux, C. Evaluation of one-step luminescent cyanoacrylate fuming. *Forensic science international*, 263, 2016, 126-131.

King, S.R., Shimmon, S., Gentle, A.R., Westerhausen, M.T., Dowd, A. & McDonagh, A.M. 2016, 'Remarkable thermal stability of gold nanoparticles functionalised with ruthenium phthalocyanine complexes.', *Nanotechnology*, vol. 27, no. 21, p. 215702.

Lam, R., Hofstetter, O., Lennard, C., Roux, C., & Spindler, X. Evaluation of multi-target immunogenic reagents for the detection of latent and body fluid-contaminated fingerprints. *Forensic science international*, 2016, 264, 168-175.

Lewis, J., Molnar, A., Allsop, D., Copeland, J., Fu, S. Rapid elimination of Carboxy-THC in a cohort of chronic cannabis users (2016) *International Journal of Legal Medicine*, 130 (1), pp. 147-152.

Li, M., Wang, L., Zheng, F., Wei, Z., Zhao, X., Fu, S., Liu, L., and Yun, K. 2016, 'Study on the postmortem redistribution of diazepam and nordiazepam in poisoned rats', *Chinese Journal of Forensic Medicine*, vol. 30, pp. 235-237.

Macha, I.J., Cazalbou, S., Shimmon, R., Ben-Nissan, B. & Milthorpe, B. 2016, 'Development and dissolution studies of bisphosphonate (clodronate)-containing hydroxyapatite-poly(lactic acid) biocomposites for slow drug delivery.', *Journal of tissue engineering and regenerative medicine*.

Maitre, M., Kirkbride, K.P., Horder, M., Roux, C. & Beavis, A. 2016, 'Current perspectives in the interpretation of gunshot residues in forensic science: A review.', *Forensic Sci Int*, vol. 270, pp. 1-11.

Publications

Marhoff, S.J., Fahey, P., Forbes, S.L. & Green, H. 2016, 'Estimating post-mortem interval using accumulated degree-days and a degree of decomposition index in Australia: A validation study', *Australian Journal of Forensic Sciences*, vol. 48, no. 1, pp. 24-36.

Maria Lourdes Moraes, Heron Dominguez Torres da Silva, Lucas Blanes, Marina Franco Maggi Tavares. 'Optimization of chemometric approaches for the extraction of isorhamnetin-3-O-rutinoside from *Calendula officinalis* L.', *Journal of Pharmaceutical and Biomedical Analysis*, vol. 125, pp. 408-414, 2016

Molnar, A., and Fu, S. Techniques and technologies for the bioanalysis of Sativex®, metabolites and related compounds. (2016) *Bioanalysis* 8, 829-845

Morelato, M., Barash, M., Blanes, L., Chadwick, S., Dilag, J., Kuzhiumparambil, U., Nizio, K.D., Spindler, X. & Moret, S. 2016, 'Forensic Science: Current State and Perspective by a Group of Early Career Researchers', *Foundations of Science*, pp. 1-27.

Moret S., Bécue A., Champod C. (2016), Functionalised silicon oxide nanoparticles for fingerprint detection, *Forensic Science International*, 259, 10-18.

Newland T.G., Moret S., Bécue A., Lewis S.W., Further investigations into the single metal deposition (SMD II) technique for the detection of latent fingerprints, *Forensic Science International*. Article in Press.

Nizio, K.D.; Cochran, J.W.; Forbes, S.L. Achieving a near-theoretical maximum in peak capacity gain for the forensic analysis of ignitable liquids using GCxGC-TOFMS. *Separations* 2016, 3(3), 26.

Nizio, K.D.; Perrault, K.A.; Troobnikoff, A.N.; Ueland, M.; Shoma, S.; Iredell, J.R.; Middleton P.G.; Forbes, S.L. In vitro volatile organic compound profiling using GCxGC-TOFMS to differentiate bacteria associated with lung infections: A proof-of-concept study. *J. Breath Res.* 2016, 10, 026008.

Perrault, K.A., Forbes, S.L. Elemental analysis of soil and vegetation surrounding decomposing human analogues (2016) *Journal of the Canadian Society of Forensic Science*, 49 (3), pp. 138-151.

Perrault, K.A., Stefanuto, P.-H., Stuart, B.H., Rai, T., Focant, J.-F., Forbes, S.L. Reducing variation in decomposition odour profiling using comprehensive two-dimensional gas chromatography (2016) *Journal of Separation Science*, 38 (1), pp. 73-80.



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Publications

Philp, M., Shimmon, R., Tahtouh, M., and Fu, S. (2016) Development and validation of a presumptive color spot test method for the detection of synthetic cathinones in seized illicit materials. *Forensic Chemistry* 1, 39-50

Philp, M., Shimmon, R., Tahtouh, M., and Fu, S. 2016, 'Development and validation of a presumptive color spot test method for the detection of synthetic cathinones in seized illicit materials', *Forensic Chemistry*, vol. 1, pp. 39-50.

Radhakrishnan, S.K., Shimmon, R.G., Conn, C. & Baker, A.T. 2016, 'Evaluation of Novel Chalcone Oximes as Inhibitors of Tyrosinase and Melanin Formation in B16 Cells.', *Archiv der Pharmazie*, vol. 349, no. 1, pp. 20-29.

Radhakrishnan, S.K., Shimmon, R.G., Conn, C. & Baker, A.T. 2016, 'Inhibitory Kinetics of Azachalcones and their Oximes on Mushroom Tyrosinase: A Facile Solid-state Synthesis', *CHEMISTRY & BIODIVERSITY*, vol. 13, no. 5, pp. 531-538.

Ribaux, O., Crispino, F., Delémont, O., Roux, C. The progressive opening of forensic science toward criminological concerns. *Security Journal*, 2016, 1-18.

Ribaux, O., Roux, C. & Crispino, F. 2016, 'Expressing the value of forensic science in policing', *Australian Journal of Forensic Sciences*, pp. 1-13.

Roux, C. 2016, 'Professional membership for the ANZFSS – is it time?', *Australian Journal of Forensic Sciences*, vol. 48, no. 3, pp. 245-247.

Rust, L., Nizio, K.D., Forbes, S.L. The influence of ageing and surface type on the odour profile of blood-detection dog training aids (2016) *Analytical and Bioanalytical Chemistry*, pp. 1-12. Article in Press.

Sackett, O., Petrou, K., Reedy, B., Hill, R., Doblin, M., Beardall, J., Ralph, P. & Heraud, P. 2016, 'Snapshot prediction of carbon productivity, carbon and protein content in a Southern Ocean diatom using FTIR spectroscopy.', *The ISME journal*, vol. 10, pp. 416-426.

Schwendener G., Moret S., Cavanagh-Steer K., Roux C. Can 'contamination' occur in body bags? - The example of background fibres in body bags used in Australia. *Forensic Science International*, 266, 2016, 517-526.

Stuart, B.H., Notter, S.J., Dent, B., Selvalatchmanan, J., Fu, S. The formation of adipocere in model aquatic environments (2016) *International Journal of Legal Medicine*, 130 (1), pp. 281-286.

Publications

Talbot-Wright, B., Baechler, S., Morelato, M., Ribaux, O., & Roux, C. Image processing of false identity documents for forensic intelligence. *Forensic science International*, 2016, 263, 67-73.

Taudte, R.V., Roux, C. & Beavis, A. 2016, 'Stability of smokeless powder compounds on collection devices.', *Forensic Sci Int*, vol. 270, pp. 55-60.

Taudte, R.V., Roux, C., Blanes, L., Horder, M., Kirkbride, K.P., Beavis, A. The development and comparison of collection techniques for inorganic and organic gunshot residues (2016) *Analytical and Bioanalytical Chemistry*, 408 (10), 2567-2576.

Tayao, M., Andrici, J., Farzin, M., Clarkson, A., Sioson, L., Watson, N., Chua, T.C., Szynda, T., Samra, J.S. & Gill, A.J. 2016, 'Loss of BAP1 Expression Is Very Rare in Pancreatic Ductal Adenocarcinoma', *PLOS ONE*, vol. 11, no. 3.

Ueland M, Blanes L, Taudte RV, Stuart BH, Cole N, Willis P, Roux C, Doble P. Capillary-driven microfluidic paper-based analytical devices for lab on a chip screening of explosive residues in soil. *Journal of chromatography. A*, (2016), 1436, 28-33.

Ueland, M., Ewart, K., Troobnikoff, A.N., Frankham, G., Johnson, R.N., Forbes, S.L. A rapid chemical odour profiling method for the identification of rhinoceros horns (2016) *Forensic Science International*, Article in Press.

Watanabe, S., Kuzhiumparambil, U., Winiarski, Z. & Fu, S. 2016, 'Data on individual metabolites of synthetic cannabinoids JWH-018, JWH-073 and AM2201 by *Cunninghamella elegans*', *Data in Brief*, vol. 7, pp. 332-340.

Watanabe, S., Kuzhiumparambil, U., Winiarski, Z., and Fu, S. Biotransformation of synthetic cannabinoids JWH-018, JWH-073 and AM2201 by *Cunninghamella elegans*. (2016) *Forensic Science International* 261, 33-42

Wenholz, D. S., Luong, S., Philp, M., Forbes, S. L., Stuart, B. H., Drummer, O. H., and Fu, S. A study to model the post-mortem stability of 4-MMC, MDMA and BZP in putrefying remains. (2016) *Forensic Science International* 265, 54-60

Wilson-Wilde, L., Yakovchyts, D., Neville, S., Maynard, P.J. & Gunn, P. 2016, 'Investigation into Ethylene Oxide Treatment and Residuals on DNA and Downstream DNA Analysis', *Science and Justice*.

Xu, G., Tian, C., Wei, Z., Fu, S., Liu, L., and Yun, K. 2016, 'The expression difference of AChE, BChE, PON-1 and FOS mRNA in rats died of acute phorate poisoning', *Chinese Journal of Forensic Medicine* vol. 30, pp. 249-252.