

# ANZPAA NIFS Best Paper Awards 2023

## Best Paper - Forensic Fundamentals

### Winner

*Misidentifications of alphanumeric characters in serial number restorations*

Joel Waszczuk, Lochlan Peacock, Scott Chadwick, Philip Maynard, Jennifer Raymond and Claude Roux

*Reference measurements for average human neurocranial bone density to inform head trauma interpretations*

Samantha Rowbotham, Calvin Mole, Diana Tieppo, Magda Blaszkowska, Stephen Cordner and Soren Blau

## Best Paper - Capability Enhancement and Innovation

### Winner

*A lights-out forensic DNA analysis workflow for no-suspect crime*

Duncan Taylor and Damien Abarno

### Highly Commended

*Preparation of a low-cost fingerprint powder that harnesses white light to emit long-lived phosphorescence*

Scarlet Hopkins, Kristen Clarke, Matthew Krosch and William Gee

## Best Technical Article, Note or Case Study

### Winner

*Verification of a reduced sample extraction time for the RSIDTM-Saliva test*

Felicia Bardan, Vivian Pham-Nguyen, Julie Absolom, Maria Bellis, Natasha Mitchell and Julianne Henry

*N,N-Diformylmescaline: A novel analogue of mescaline detected in Queensland*

Ryan Gallagher, Maddison McLaughlin, Karen Blakey, Urs Wermuth, Sue Boyd and Jenny McGowan

## Best Literature Review or Opinion Article

### Winner

*Textile damage science—Is it a reliable science?*

Kate Sloan, Macarthur Fergusson and James Robertson

### **Highly Commended**

*An interdisciplinary forensic approach for human remains identification and missing persons investigations*

Ayusha Dahal, Dennis McNevin, Madelen Chikhani and Jodie Ward

### **Best New Publisher in a Refereed Journal**

#### **Winner**

*Novices cannot fill the examiners' shoes: Evidence of footwear examiners' expertise in shoe comparisons*

Rachel Chapman, Stephanie Summersby, Tanya Lang, Jennifer Raymond and Kaye Ballantyne

# ANZPAA NIFS Best Paper Awards 2022

## Best Paper - Forensic Fundamentals

### Winner

*Exploring likelihood ratios assigned for siblings of the true mixture contributor as an alternate contributor*

Hannah Kelly, Michael Coble, Maarten Kruijver, Richard Wivell and Jo-Anne Bright

## Best Paper - Capability Enhancement and Innovation (Biology)

### Winner

*Using big data from probabilistic genotyping to solve crime*

Duncan Taylor and Damien Abarno

## Best Paper - Capability Enhancement and Innovation (Fingerprints)

### Winner

*Automated 'lights-out' searching of all recovered fingerprints: Review of the current workflow for latent fingerprint processing in Queensland, Australia*

Troy O'Malley, Matt Krosch, Paul Peacock, Rechelle Cook and David Neville

## Best Technical Article, Note or Case Study

### Winner

*Developmental validation of an efficient differential separation method incorporating the i-sep® DL spin column with high sperm DNA recovery for the processing of sexual assault samples*

Tammara White, Marie Rye and Jasmine Tay

## Best Literature Review (Biology/Intelligence)

### Winner

*Privacy implications of the new "omic" technologies in law enforcement*

Paul Roffey and Nathan Scudder

## Best Literature Review (Pathology)

### Winner

*The logic of forensic pathology opinion*

Hans de Boer, Judith Fronczek, Charles Berger and Marjan Sjerps

## **Best Literature Review (Quality Management)**

### **Winner**

*Toward a common language for quality issues in forensic science*

Anna Heavey, Gavin Turbett, Max Houck and Simon Lewis

## **Best New Publisher in a Refereed Journal**

### **Winner**

*The alprazolam analogue 4'-chloro deschloroalprazolam identified in seized capsules*

Sheena-Ann Trigg, Jason Wells, Jasmine McGann, Soeren Bock, Adam Holman, Stephen Harrison, Ching Yong Goh, Stephen Moggach and David Brown

# ANZPAA NIFS Best Paper Awards 2021

## Best Paper – Forensic Fundamentals

### Winner

*Bloodstain Pattern Analysis: Does experience equate to expertise?*

Alexandra Bettison, Matt Krosch, Janet Chaseling and Kirsty Wright

### Highly Commended

*Detection of intact insulin analogues in post-mortem vitreous humour–Application to forensic toxicology casework*

Nicola Beckett, Rebecca Tidy, Bianca Douglas and Colin Priddis

## Best Paper – Capability Enhancement and Innovation

### Winner

*Validation of a top-down DNA profile analysis for database searching using a fully continuous probabilistic genotyping model*

Duncan Taylor, Jo-Anne Bright, Lenara Scandrett, Damien Abarno, Shan-I Lee, Richard Wivell, Hannah Kelly and John Buckleton

### Highly Commended

*Developmental validation of FaSTR™ DNA: Software for the analysis of forensic DNA profiles*

Meng-Han Lin, Shan-I Lee, Xinlong Zhang, Laura Russell, Hannah Kelly, Kevin Cheng, Stuart Cooper, Richard Wivell, Zane Kerr, Judi Morawitz and Jo-Anne Bright

## Best Technical Article or Note

### Winner

*Assessment of Diamond™ Nucleic Acid Dye for the identification and targeted sampling of latent DNA in operational casework*

Russell Cook, Natasha Mitchell and Julianne Henry

### Highly Commended

*Probabilistic interpretation of the Amelogenin locus*

Jo-Anne Bright, John Buckleton and Duncan Taylor

### **Highly Commended**

*Can dental charting from a post-mortem computed tomographical scan produce a confident forensic identification without traditional physical and radiographic examination?*

Selina Leow and Denice Higgins

### **Best Case Study**

#### **Winner**

*Delivering harm reduction to the community and frontline medical practitioners through the South Australian Drug Early Warning System (SADEWS)*

Andrew Camilleri, Sam Alfred, Cobus Gerber, Stephen Lymb, Ben Painter, Anne Rathjen and Peter Stockham

#### **Highly Commended**

*Enhancing the evidential value of textile fibres Part 2: Application of a database-driven fibre comparison strategy to a cold-case investigation*

Rees Powell, Peter Collins, Graham Horsley, John Coumbaros and Wilhelm van Bronswijk

### **Best Literature Review**

#### **Winner**

*Post mortem tryptase: A review of literature on its use, sampling and interpretation in the investigation of fatal anaphylaxis*

Jack Garland, Benjamin Ondruschka, Ugo Da Broi, Cristian Palmiere and Rexson Tse

#### **Highly Commended**

*A Review of the Current Understanding of Burned Bone as a Source of DNA for Human Identification*

Meghan Mckinnon, Maciej Henneberg and Denice Higgins

### **Best New Publisher in a Refereed Journal**

#### **Winner**

*Application of forward-looking infrared (FLIR) imaging from an unmanned aerial platform in the search for decomposing remains*

Owyn Butters, Matt Krosch, Michell Roberts and Donna MacGregor

#### **Highly Commended**

*From identification to intelligence: An assessment of the suitability of forensic DNA phenotyping service providers for use in Australian law enforcement casework*

Lauren Atwood, Jennifer Raymond, Alison Sears, Michael Bell and Runa Daniel

# ANZPAA NIFS Best Paper Awards 2020

## Best Paper - Forensic Fundamentals

### Winner

*Investigating the position and level of DNA transfer to undergarments during digital sexual assault*

Phola Ramos, Oliva Handt and Duncan Taylor

### Highly Commended

*Variability and additivity of read counts for aSTRs in NGS DNA profiles*

Kevin Cheng, Jessica Skillman, Stephanie Hickey, Rebecca Just, Lilliana Moreno, Jo-Anne Bright, Hannah Kelly, Meng-Han Lin, James Curran and John Buckleton

## Best Paper - Capability Enhancement And Innovation

### Winner

*Using Bayesian networks to track DNA movement through complex transfer scenarios*

Duncan Taylor, Lydie Samie and Christophe Champod

## Best Technical Article or Note

### Winner

*High throughput detection of 327 drugs in blood by LC-MS-MS with automated data processing*

Matthew Di Rago, Supranee Pantatan, Melynda Hargreaves, Katherine Wong, Dylan Mantinieks, Alex Kotsos, Linda Glowacki, Olaf Drummer and Dimitri Gerostamoulos

### Highly Commended

*Assessment of the Yfiler® Plus PCR amplification kit for the detection of male DNA in semen-negative sexual assault cases*

Julianne Henry and Lenara Scandrett

*Chemical fingerprinting of petrochemicals for arson investigations using two-dimensional gas chromatography – flame ionisation detection and multivariate analysis*

Jessica Pandohee, Jeff Hughes, James Pearson and Oliver Jones

## **Best Literature Review**

### **Winner**

*A review of bomb pulse dating and its use in the investigation of unidentified human remains*

Eden Johnstone-Belford and Soren Blau

### **Highly Commended**

*Methods for the analysis of mitochondrial DNA*

Bethany Forsythe, Lisa Melia and SallyAnn Harbison

## **Best Case Study**

### **Winner**

*Environmental methamphetamine exposures and health effects in 25 case studies*

Jackie Wright, Michaela Kenneally, Kirstin Ross and Stewart Walker

### **Highly Commended**

*The phenomenon of para-Fluorophenylpiperazine (pFPP) in combination with the synthetic cannabinoid AMB-FUBINACA in seized plant material in New Zealand*

Cameron Johnson, Chrissy Stansfield, V Hassan, Emma Kolbe, Hannah Partington, Diana Kappatos and Robyn Somerville

## **Best New Publisher in a Refereed Journal**

### **Winner**

*Examining the additivity of peak heights in forensic DNA profiles*

Kevin Cheng, Jo-Anne Bright, Zane Kerr, Duncan Taylor, Anne Ciecko, James Curran and John Buckleton

*The impact of chemical trace evidence on justice outcomes: exploring the additive value of forensic science disciplines*

Peter Woodman, Caroline Spiranovic, Roberta Julian, Kaye Ballantyne and Sally Kelty

## **The Henry Delaforce Award**

### **Winner**

*Fingerprint identifications from explicit photographs lead to pedophile convictions*

Cameron Forsyth



**Highly Commended**

*A curious case of bogus toolmarks*

Gerard Dutton

# ANZPAA NIFS Best Paper Awards 2019

## Best Paper in a Refereed Journal

### Winner

*A risk-based approach to cognitive bias in forensic science*

Andrew Camilleri, Damien Abarno, Carolyne Bird, Anne Coxon, Natasha Mitchell, Kahlee Redman, Nicol Sly, Stephen Wills, Edmund Silenieks, Ellie Simpson and Heather Lindsay

### Highly Commended

*Likelihood ratio development for mixed Y-STR profiles*

Duncan Taylor, James Curran and John Buckleton

*Glass-containing gunshot residues and particles of industrial and occupational origins: Considerations for evaluating traces*

Kelsey Seyfang, Nick Lucas, Kahlee Redman, Rachel Popelka-Filcoff, Hilton Kobus and Paul Kirkbride

## Best Technical Article or Note

### Winner

*Inter-sample contamination detection using mixture deconvolution comparison*

Duncan Taylor, Emily Rowe, Maarten Kruijver, Damien Abarno, Jo-Ann Bright and John Buckleton

## Best Literature Review

### Winner

*DNA transfer in forensic science: A review*

Roland van Oorschot, Bianca Szkuta, Georgina Meakin, Bas Kokshoorn and Mariya Goray

### Highly Commended

*Evaluation of forensic genetics findings given activity level propositions: A review*

Duncan Taylor, Bas Kokshoorn and Alex Biedermann

## **Best Case Study**

### **Winner**

*A case study involving U-47700, Diclazepam and Flubromazepam - application of retrospective analysis of HRMS data*

Emma Partridge, Stephen Trobbiani, Peter Stockham, Cheryl Charlwood and Chris Kostakis

### **Highly Commended**

*A fatality involving furanylfentanyl and MMMP, with presumptive identification of three MMMP metabolites in urine*

Christine Nash, Danielle Butzback, Peter Stockham, Timothy Scott, Greg Abroe, Ben Painter, John Gilbert and Chris Kostakis

## **The Henry Delaforce Award**

### **Winner**

*Determination of the maximum distance blood spatter travels from a vertical impact*

Chris Flight, Max Jones and Kaye Ballantyne

# ANZPAA NIFS Best Paper Awards 2018

## Best Paper in a Refereed Journal

### Winners

*Internal validation of STRmix™ – A multi laboratory response to PCAST*

Jo-Anne Bright, Rebecca Richards, Maarten Kruijver, Hannah Kelly, Catherine McGovern et al.

### Highly Commended

*Enhancing the evidential value of textile fibres Part 1: Development of a spectral database and evaluative comparison strategy*

Rees Powell, Wilhelm van Bronswijk and John Coumbaros

*Abnormalities in substance P neurokinin-1 receptor binding in key brainstem nuclei in sudden infant death syndrome related to prematurity and sex*

Fiona Bright, Robert Vink, Roger Byard, Jhodie Duncan, Henry Krous and David Paterson

*A template for constructing Bayesian networks in forensic biology cases when considering activity level propositions*

Duncan Taylor, Alex Biedermann, Tacha Hicks and Christophe Champod

## Best Technical Article or Note

### Winner

*Enhancing forensic investigation through the use of modern three-dimensional (3D) imaging technologies for crime scene reconstruction*

Domenic Raneri

## Best Chapter in a Book

### Winner

*Brainstem neuropathology in sudden infant death syndrome*

Fiona Bright, Robert Vink and Roger Byard

## Best Literature Review

### Winner

*A review of bioinformatic methods for forensic DNA analyses*

Yao-Yuan Liu and SallyAnn Harbison

## **Best Case Study**

### **Winner**

*Fatal methemoglobinemia complicating alkaptonuria (ochronosis): a rare presentation*

Amanda Freeman and Stephen Wills

### **Highly Commended**

*Likelihood ratio formulae for disputed parentage when the product of conception is trisomic*

Duncan Taylor, Oliva Handt, Damien Abarno and John Buckleton

## **The Henry Delaforce Award**

### **Winner**

*Considerations for adoption of an evaluative reporting framework for the interpretation of firearms and toolmarks evidence*

Gerard Dutton

# ANZPAA NIFS Best Paper Awards 2017

## Best Paper in a Refereed Journal

### Winner

*Teaching artificial intelligence to read electropherograms*

Duncan Taylor and David Powers

### Highly Commended

*Spatial variations in the consumption of illicit stimulant drugs across Australia: A nationwide application of wastewater-based epidemiology*

Foon Yin Lai, Jake O'Brien, Raimondo Bruno, Wayne Hall, Jeremy Prichard, Paul Kirkbride, Coral Gartner, Phong Thai, Steve Carter, Belinda Lloyd, Lucy Burns and Jochen Mueller

*Context effects in forensic entomology and use of sequential unmasking in casework*

Melanie Archer and James Wallman

## Best Technical Article or Note

### Winner

*Observations of DNA transfer within an operational Forensic Biology Laboratory*

Duncan Taylor, Damien Abaro, Emily Rowe and Lauren Rask-Nielsen

### Highly Commended

*Validation of alternate light sources for detection of bruises in non-embalmed and embalmed cadavers*

Kelly Olds, Roger Byard, Calle Winskog and Neil Langlois

## Best Chapter in a Book

### Winner

*Microbial impacts in postmortem toxicology*

Jared Castle, Danielle Butzbach, Stewart Walker, Claire Lenehan, Frank Reith and Paul Kirkbride

### Highly Commended

*Missing persons investigations and identification: Issues of scale, infrastructure and political will*

Soren Blau

## **Best Literature Review**

### **Winner**

*What risks do herbal products pose to the Australian community?*

Roger Byard, Ian Musgrave, Garth Maker and Michael Bunce

## **Best Case Study**

### **Winner**

*Adverse health effects associated with living in a former methamphetamine drug laboratory – Victoria, Australia 2015*

Jackie Wright, Michaela Kenneally, John Edwards and Stewart Walker

## **The Henry Delaforce Award**

### **Winner**

*A homemade firearm and unconventional ammunition used in a suicide*

Gerard Dutton

# ANZPAA NIFS Best Paper Awards 2016

## Best paper in a Refereed Journal

### Winner

*Direct identification of forensic body fluids using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry*

Sathisha Kamanna, Julianne Henry, Nicholas Voelcker, Adrian Linacre and Paul Kirkbride

### Highly Commended

*Evaluating forensic biology results given source level propositions*

Duncan Taylor, Damien Abarno, Tacha Hicks and Christophe Champo

## Best Technical Article or Note

### Winner

*An alternative approach for assessment of liquid chromatography-mass spectrometry matrix effects using auto-sampler programmed co-injection*

Caitlyn Rogers, Peter Stockham, Christine Nash, Sheridan Martin, Chris Kostakis and Claire Lenehan

### Highly Commended

*A study into the distribution of gunshot residue particles in the random population*

Nick Lucas, Hayley Brown, Michael Cook, Kahlee Redman, Tanith Condon, Harald Wrobel, Paul Kirkbride and Hilton Kobus

*The synthesis and characterisation of MDMA derived from a catalytic oxidation of material isolated from black pepper reveals potential route specific impurities*

Christopher Plummer, Thomas Breadon, James Pearson and Oliver Jones

## Best Chapter

### Winner

*Postmortem changes: overview*

Michael Tsokos and Roger Byard

## Best Literature Review

### Winner

*Forensic body fluid identification: state of the art*

SallyAnn Harbison and Rachel Fleming



### **Highly Commended**

*How traumatic: a review of the role of the forensic anthropologist in the examination and interpretation of skeletal trauma*

Soren Blau

### **Best Case Study**

#### **Winner**

*Locard's principle of exchange, dental examination and fragments of skin*

Roger Byard, Helen James, John Berketa and Karen Heath

# ANZPAA NIFS Best Paper Awards 2015

## Best Paper in a Refereed Journal

### Winner

*Testing likelihood ratios produced from complex DNA profiles*

Duncan Taylor, John Buckleton and Ian Evett

### Highly Commended

*Use of a non-volatile agent to stabilize severely incinerated dental remains*

John Berketa, Helen James, Neil Langlois, Lindsay Richards and Paul Pigou

### Highly Commended

*Toward male individualization with rapidly mutating Y-chromosomal short tandem repeats*

Kaye Ballantyne, Duncan Taylor, Denise Ward et al

## Best Technical Article or Note

### Winner

*The variability in likelihood ratios due to different mechanisms*

Jo-Anne Bright, Kate Stevenson, James Curran and John Buckleton

## Best Literature Review

### Winner

*Frailty syndrome – Medicolegal considerations*

Roger Byard

## Best Case Study

### Winner

*Further evidence for a lack of reliability in the histologic ageing of bruises – an autopsy study*

Claire Ross, Neil Langlois, Karen Heath and Roger Byard

## The Henry Delaforce Award

### Winner

*Forensic informatics enabling forensic intelligence*

Troy O'Malley

# ANZPAA NIFS Best Paper Awards 2014

## Best Paper in a Refereed Journal

### Winner

*The interpretation of single source and mixed DNA profiles*

Duncan Taylor, Jo-Anne Bright and John Buckleton

### Highly Commended

*A fast liquid chromatography quadrupole time-of-flight mass spectrometry(LC-QToF-MS) method for the identification of organic explosives and propellants*

David DeTata, Peter Collins and Allan McKinley

### Highly Commended

*Forensic intelligence framework – Part 1: Induction of a transversal model by comparing illicit drugs and false identity documents monitoring*

Marie Morelato, Simon Baechler, Olivier Ribaux, Alison Beavis, Mark Tahtouh, Paul Kirkbride, Claude Roux and Pierre Margot

## Best Technical Article or Note

### Winner

*The forensic analysis of office paper using carbon isotope ratio mass spectrometry-Part 2: Method development, validation and sample handling*

Kylie Jones, Sarah Benson and Claude Roux

### Highly Commended

*Searching mixed DNA profiles directly against profile databases*

Jo-Anne Bright, Duncan Taylor, James Curran and John Buckleton

## Best Chapter in a Book

### Winner

*The Impact of Forensic Evidence on Criminal Justice. Evidence from case processing studies*

Robert Hayes, Sally Kelty and Roberta Julian

### **Highly Commended**

*Forensic collection of cloud storage data: Does the act of collection result in changes to the data or its metadata?*

Darren Quick, Ben Martini and Kim-Kwang Raymond Choo

### **Best Literature Review**

#### **Winner**

*Heat-related deaths in Adelaide, South Australia: Review of the literature and case findings – An Australian perspective*

Kerryn Mason, Jonathon Herbst, Roger Byard, John Gilbert, Cheryl Charlwood, Karen Heath, Carl Winskog and Neil Langlois

### **Best Case Study**

#### **Winner**

*Basal epithelial formalin pigment deposition in the kidneys – A useful marker for ketoacidosis at autopsy*

Roger Byard, Chong Zhou, John Gilbert and Andrea Yool

### **The Henry Delaforce Award**

#### **Winner**

*A case study of the interpretation of extraordinary toolmarks on a fatal bullet*

Gerard Dutton

# ANZPAA NIFS Best Paper Awards 2013

## Best Paper in a Refereed Journal

### Winner

*MtDNA SNP multiplexes for efficient inference of matrilineal genetic ancestry within Oceania*

Kaye Ballantyne, Mannis van Oven, Arwin Ralf, Mark Stoneking, John Mitchell, Roland van Oorschot and Manfred Kayser

## Best Technical Article or Note

### Winner

*Lab-on-a-chip screening of methamphetamine and pseudoephedrine in samples from clandestine laboratories*

Aimee Lloyd, Matthew Russell, Lucas Blanes, Philip Doble and Claude Roux

## Best Chapter in a Book

### Winner

*Digital Imaging. In R Ramotowski (ed) Lee and Gaensslen's Advances in Fingerprint Technology (third edition)*

Bruce, Comber, Gemma Payne and Chris Lennard

## Best Literature Review

### Winner

*A review of impurity profiling and synthetic route of manufacture of methylamphetamine, 3,4-methylenedioxymethylamphetamine, amphetamine, dimethylamphetamine and p-methoxyamphetamine*

Natasha Stojanovska, Shanlin Fu, Mark Tahtouh, Tamsin Kelly, Alison Beavis and Paul Kirkbride

## Best Case Study

### Winner

*How reliable is external examination in identifying internal injuries – Casper's sign revisited*

Roger Byard