

Forensic DNA Specialist

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DNA Interpretation & evaluation specialist with history of introducing new techniques into the court process, giving evidence in UK & abroad. DNA research on technical & interpretational aspects. Worked on development of methods for DNA calculations, provide training in these to forensic scientists across Europe. Extensive experience of training forensic scientists in DNA statistical evaluation in UK & Europe

Career Highlights

Consultant & Owner DNA Principal Forensics Ltd (DPF) April 2012 to date (www.dnaprincipalforensics.com)

Consultant & Director Principal Forensic Services Ltd (PFS) April 2012 to date (www.principalforensicservices.com)

Independent casework advice, expert training & quality systems consultancy.

- Forensic science consultancy, DNA specialist
 - Independent case reviews of forensic evidence for prosecution & defence in criminal & civil cases, including mixture interpretation, standard & specialist statistical review, relationship tests, Mitochondrial & Y STR, transfer & persistence of DNA
 - Lectures & training for university students, forensic scientists & others in the Criminal Justice System in evaluation of DNA evidence & in Case Assessment & Interpretation
 - Advice & guidance on DNA interpretation, Case Assessment & Interpretation

- Specialties are DNA Interpretation & statistical evaluation, Case Assessment & Interpretation, Forensic casework, training, quality & research, Validation of methods
- Validation of methods training delivered for Forensic Science Providers and Police Laboratories (2021-22)
- Co-editor of Frontiers Research Topic: The Dialogue Between Forensic Scientists, Statisticians and Lawyers about Complex Scientific Issues for Court, 2020
- Technical expert for DNA analysis in assessments for Irish National Accreditation Board, Sept 2019
- Contract for Home Office together with ESR and Eurofins on Provision of Services for the Advancement of Statistical theory



Senior Roles

Consultant

Director

Principal Scientist

Qualifications

PhD in Biochemistry,
University of Leeds, 1984
BSc (Hons) Biochemistry
& Microbiology,
University of Leeds, 1980,
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Specialist areas

Forensic Science

DNA analysis &
Interpretation

Case Assessment &
Interpretation

Forensic Biology casework

for DNA Mixture profiles retained on the National DNA Database, October 2017 – February 2018

- Working with NRGD on developing standards for reporting activity level evaluation for DNA, 2017
- Advised Inns of College Court of Advocacy and Royal Statistical Society on Statistics and Probability for Advocates guidance, September 2017
- EU project in Croatia for Biostatistics for Disaster Victim Identification using DNA as part of setting up DVI service (January – December 2017)
- Training for KSA scientists at Life Technologies in Glasgow on DNA Database for identification of disaster victims (2017)
- Working with multi-national companies including SCJS, KBR and ThermoFisher on projects for accreditation of UK and overseas laboratories and introduction of new DNA techniques
- Recent contracts include Home Office & National DNA Database Delivery Unit
- In conjunction with PFS colleagues, contracted to draft appendices for the Forensic Science Regulator Codes of Practice and Conduct through competitive tendering by the Home Office between 2012 and 2016:
 - The control and avoidance of contamination in crime scene examination involving DNA evidence recovery
 - Cognitive bias effects relevant to forensic science examinations
 - Guidelines for undertaking proficiency trials for DNA mixtures
 - DNA mixture interpretation software validation standard and guidance
 - DNA mixture interpretation guidelines
- Assessor for Netherlands Register of Court Experts (NRGD) independently reviewing forensic reports & associated analytical data & statistical evaluation from applicants against formal criteria agreed by the NRGD Board (2013 – date)
- Presented at Isaac Newton Institute, Cambridge University, on Statistical Modelling of DNA Mixture Evidence in December 2016
- Scientist in residence, Reading University (Chemistry For All program of Royal Society of Chemistry) November 2016
- Provided Expert Witness Training course for PhD students on Intrepid programme at Leicester University in Mar-Oct 2016
- Contract for Home Office on statistical research for adventitious and near match investigations by the National DNA Database, with scientific publications submitted (2015)
- Contributed to Forensic Science and beyond: authenticity, provenance and assurance, Annual Report of the Government Chief Scientific Adviser 2015
- Qiagen Investigator Forum - provided workshops on the interpretation of DNA mixtures in April 2014 and 2015
- Presented at Forensic Watch conference 'Adversarial Trial and Competences of Expert Witnesses' in Poland, March 2015
- Invited speaker at The International Trend and Strategic Development of China in DNA Technology, Forensic DNA Laboratory, DNA Database and Ministry of Public Security Criminal Investigation Experts (DNA Technology) Summit in Chengdu, China October 2013

Site Experience

UK

Various European Countries

Other Qualifications/Committees

DNA Expert with the Dutch Register of Court Experts in Criminal Cases Decree 1 June 2016

Chair of Forensic Science Regulator Specialist DNA Group (2013)

Member of the Forensic Science Society (2001)

Fellow of the Chartered Society of Forensic Sciences (previously Forensic Science Society; April 2012)

Member of the International Society for Forensic Genetics

Papers/Patents

See below

Relevant Awards/Training

PW Allen Merit Award, Forensic Science Society, Nov 2010- Oct 2011

Previous Employers

Forensic Science Service

Languages

English

Other current & recent roles

- Chair of Body Fluid and DNA Forensic Science Regulator Specialist Group; also sub-groups on Relationship Testing and Y STR analysis and interpretation
- Honorary Research Fellow, Leverhulme Research Centre for Forensic Science, Dundee University
- External examiner, Robert Gordon University 2022-date
- Technical Assessor for Irish National Accreditation Board (2019-date)
- Member of Scientific and Technical Review Panel for the US Organization of Scientific Area Committee on Best Practice in Evaluative Forensic DNA Testimony in USA (2022)
- Independent Assessor for Netherlands Register of Court Experts (NRGD; 2013-date)
- Visiting International Fellow at ESR New Zealand 2015-16
- Visiting lecturer at UCL delivering 10-week module for MSc Forensic Science on Case assessment & Interpretation 2016-19
- Editorial Board of CS Eye, peer reviewer for Science & Justice, Frontiers, FSI genetics, WIREs

Experience & key skills (last 5 years)

- Competent Forensic Scientist – presenting evidence in complex & challenging cases
- Training – Identifying organisational needs; develop & deliver training packages & assessments; post-course coaching; delivered to forensic scientists, lawyers & university students
- Quality – ensuring standards & competencies are set, met & maintained; recovery programmes for people or procedures. Producing detailed written protocols, regularly assessing & updating them, & performing audits & trials to ensure adherence to them
- Internal & external training for scientists across Europe, University graduates & postgraduates; members of Criminal Justice system including senior police, lawyers & judges – DNA analysis, statistical interpretation & calculation, Case Assessment & Interpretation, Validation of methods, Expert Witness training

Previous roles:**Member, Forensic Knowledge Base & DNA17 May 2014 - May 2015**

- Providing e-learning on new forensic DNA tests for scientists & lawyers,

Forensic Science Service 1987 – 2011**Principal Scientist for DNA Interpretation, 2006 – 2011**

Communicating & presenting – Producing written & oral evidence on complex scientific issues in non-technical language for Crown & Appeal Courts; technical reports for scientific journals for validation of new methods; presenting at national & international scientific & legal conferences

- Management & administration – Lead Assessor for Council for the Registration of Forensic Practitioners; managed 12 assessors from Forensic Providers, defence experts & academics, organised workload, collated results; held Science Panel hearings challenging registrations
- Quality – Producing, managing & delivering audit programme to UKAS standards, to provide assurance on adherence to & suitability of current procedures
- Problem Solving & Troubleshooting – Carrying investigations to determine source of quality failures & issues raised in audits, to prevent & detect problems proactively, using to drive research into improvements
- Research – Improving process to gain better results first time (improving sampling & analysis); better interpretation & statistical evaluation (choosing most useful sample, calculating strength, improving software), bespoke methods for 'difficult' samples & situations;

- Training – Identify organisational needs; develop & deliver training & assessments; post-course coaching.
- Competent Court-going Forensic Scientist – Developing & maintaining personal skills in Forensic Biology and DNA interpretation, meeting required quality standards; trained in presentation of evidence including Diplock Courts for terrorist trials

Previous roles in Forensic Science Service 1987 – 2006, included

- Senior Forensic Scientist & Interpretation Specialist, (Biology Casework)
- Senior Research Scientist & Interpretation Specialist (DNA Research)

Worked at Lambeth (1996-2012) and Aldermaston (1990 -1995) Operational Laboratories & at Central Research & Support Establishment, Aldermaston (1987-1990)

University of Leeds, Biochemistry Department 1980 - 1987

- Research Assistant, PhD 1980 – 1983
- Post Doctoral Research Fellow 1983-1986
- Post Doctoral Teaching Fellow 1986- 1987

Additional Skills & Experience gained in these roles

- Competent Forensic Scientist – presenting evidence in complex & challenging cases; introduction of new DNA techniques into courts in UK and abroad
- Internal & external training for scientists across Europe, University graduates & postgraduates; members of Criminal Justice system including senior police, lawyers & judges
- Quality – ensuring standards & competencies are set, met & maintained; recovery programmes for people or procedures. Producing detailed written protocols, regularly assessing & updating them, & performing audits & trials to ensure adherence to them
- Managing introduction of new techniques & interpretation methods into operational laboratories; innovation by combining new & existing ideas to produce novel products

Published Patents & Patent Applications

Foreman, Lindsey; Evett, Ian; Pope, Susan; Buckleton, John; Curran, James; Triggs, Christopher; (2009) Patent 02788208.3-2402-GB0205837 Improvements in & relating to interpreting DNA, Canada18.06.04; EP 1456412 B1, USA 20090326830

Recent Publications (Full list available on request)

- Ben Mallinder, Susan Pope, Jim Thomson, Lesley-Ann Beck, Andrew McDonald, Dorothy Ramsbottom, Denise Syndercombe Court, Des Vanhinsbergh, Michael Barber, Ian Evett, Kevin Sullivan, Jonathan Whitaker, Interpretation and reporting of mixed DNA profiles by seven forensic laboratories in the UK and Ireland, Forensic Science International Genetics 58 (2022) 102674 <https://doi.org/10.1016/j.fsigen.2022.102674>
- S. Pope & R. Puch-Solis Interpretation of DNA within the context of forensic science - investigation (2021) Emerging Topics in Life Sciences <https://doi.org/10.1042/ETLS20210165>
- R. Puch-Solis & S. Pope Interpretation of DNA within the context of forensic science - evaluation (2021) Emerging Topics in Life Sciences <https://doi.org/10.1042/ETLS20200340>
- Sue Pope & Alex Biedermann, Eds (2020) The dialogue between Forensic Scientists, Statisticians and Lawyers about complex scientific issues for court, Frontiers Media SA, doi: 20.3389/978-2-88966-049-0
- Matt Tart, Sue Pope, David Baldwin & Robert Bird, Cell site analysis: Roles & interpretations, Science & Justice (2019) <https://doi.org/10.1016/j.scijus.2019.06.005>