



SEROLOGICAL

RESEARCH

INSTITUTE

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## RESUME OF BRIAN G. D. WRAXALL

### *EDUCATION*

- 1958 - 1962*                      *King Edward VI Grammar School, Totnes, Devon, England*  
5 "O" level certificates (General Certificate of Education)  
2 "A" level certificates in Biology and Chemistry
- 1967 - 1969*                      *Borough Polytechnic College, London, England*  
Higher National Certificate in Applied Biology  
(Biochemistry, Microbiology and Physiology)
- 1990*                                *University of California Berkeley Extension*  
Principles of Molecular Biology

### *PREVIOUS EMPLOYMENT*

- Sept. 1962 - Sept. 1963*                      *Western Countries Brick Co., Torquay, Devon*  
Laboratory Chemist
- Sept. 1963 - Feb. 1977*                      *Metropolitan Police Laboratory London, England*  
Senior Scientific Officer
- Mar. 1977 - Sept. 1978*                      *Beckman Instruments/Aerospace Corporation*  
Consultant, Bloodstain Analysis Project
- Sept. 1978 - Present*                      *Serological Research Institute, Richmond, CA*  
Executive Director, Chief Forensic Serologist  
Technical Leader

**CERTIFICATES**

American Board of Criminalistics (ABC)

**Diplomate:** Criminalistics

**Fellow:** Forensic Biochemistry  
Forensic Molecular Biology

American Board of Forensic Examiners

**Fellow**

Attendance at many training courses and workshops:

Two-year training period in Forensic Science (Biology Division) at the Metropolitan Police Laboratory, London. Training in evidence handling, examination of hair, fibers, blood and body fluids.

Electrophoresis Symposium, FBI Academy, Quantico, VA - August 1984

Forensic DNA Symposium, California Association of Criminalists - May 21, 1988, Berkeley, CA

DNA Southern Analysis Workshop, Oncor Corporation - March 1989

Forensic DNA Analysis, University of California Berkeley Extension - July 1989

DNA RFLP Analysis, Cellmark Diagnostics - September 1989

DNA Symposium, FBI Academy, Quantico - August 1989

PCR HLA DQ typing, Cetus Corporation - April 1990

PCR STR Workshop, Promega - May, 1995

PCR STR Workshop – Applied Biosystems - December 1997

Mitochondrial DNA Workshop, Promega, - September 1999

DNA Auditor Training – FBI – April 2005.

qPCR Training – Applied Biosystems – April 2005.

Twelve years specialization in serology; particularly in research and development of electrophoretic techniques for blood proteins and enzymes in dried bloodstains and body fluids (semen, vaginal secretion, etc.).

Provided training for crime laboratory analysts

***EXPERIENCE - UNITED STATES***

Eighteen months on development of the LEAA funded Bloodstain Analysis System (BAS) for efficient phenotyping of limited evidence material in criminal cases.

Since 1978 - Have conducted many training courses on identification and typing of biological evidence.

Courses Include:      Bloodstain Analysis  
                              Basic Electrophoresis  
                              Advanced Electrophoresis  
                              Semen Identification and Analysis  
                              Gm\Km Typing  
                              DNA Typing

The courses have been held at the Serological Research Institute in California as well as at laboratories in Arizona, Florida, Louisiana, Michigan, North Carolina, Ohio, Pennsylvania, Washington, Costa Rica, and Guatemala.

Courses in PCR HLA DQA typing have been held in conjunction with Cetus Corporation (now Roche Biomedical). Have acted as co-instructor.

Co-instructor PCR HLA DQA/PM typing - Perkin Elmer Applied Biosystems.

Acted as a consultant for attorneys, both prosecution and defense, civil and criminal, concerning the analysis and interpretation of biological evidence. Have conducted many analyses and reanalyses for agencies in the majority of states.

***COURT TESTIMONY***

Presentation of expert testimony in the field of Forensic Serology in the states of Alabama, Alaska, Arizona, California, Colorado, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Missouri, Nebraska, Nevada, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, Texas, Washington, and Wisconsin.

***CASE WORK EXPERIENCE***

Examination of a broad spectrum of case material for the presence of trace evidence. Phenotyping of bloodstains in at least 16 different polymorphic systems (enzyme, protein and antigen). Phenotyping of stains of other body fluids in several systems. Extraction of DNA from body fluids, hairs and skeletal remains. Typing of DNA using RFLP and PCR techniques. Sequencing of mitochondrial DNA.

**Haptoglobin Types in Dried Bloodstains** (1967) Nature, 211, 5051, 872-3, Culliford, Wraxall

**A Thin-Layer Starch Gel Method for Enzyme Typing of Bloodstains**, (1968) J. For.Sci. Soc. 8,2 & 3, 81-2. Wraxall, Culliford

**Adenylate Kinase Types in Bloodstains** (1968) J. For. Sci. Soc. 8, 2 & 3, 79-80. Culliford, Wraxall

Contributor to **The Examination and Typing of Bloodstains in the Crime Laboratory** by Bryan Culliford, U.S. Department of Justice, LEAA (1971).

**The Identification of Foetal Hemoglobin in Bloodstains** (1972) J. For. Sci. Soc. 12, 457-8. Wraxall

**Phosphatases in Body Fluids - The Differentiation of Semen and Vaginal Secretion** (1974) For. Sci. 3, 57-62. Adams, Wraxall

**Erythrocyte Acid Phosphatase in Bloodstains** (1976) J. For. Sci. Soc. 16, 127-32. Wraxall, Emes

**Typing of PGM Isoenzymes in Vaginal Material and Semen** (1976) J. For. Sci. Soc. 16, 29 - Price, Davies, Wraxall, Martin, Parkin, Emes, Culliford

**Red Cell Acid Phosphatase Typing** (1977) For. Ser. News III, 6. Sensabaugh, Wraxall

**Population Survey for GLOI** (1978) For. Ser. News, 3. Stolorow, Wraxall

**Final Report: Bloodstain Analysis System** (September 1978) FR 2700 - The Aerospace Corporation, Wraxall, Bordeaux, Harmor, Walsh

**An Efficient Method to Eliminate Streaking in the Electrophoretic Analysis of Haptoglobin in Bloodstains** (1979) J. For. Sci. 24,4,856-63; Stolorow, Wraxall

**The Use of Hemoglobin F Antiserum for the Detection of Foetal Hemoglobin** (1979) J. For. Sci. Soc. 19, 49; Wiggins, Wraxall

**Final Report: Forensic Serology Workshops** September 1979 78NI-AX0079; U. S. Department of Justice, Wraxall, Harmor, Provost, Jordan

**Forensic Serology** in Scientific and Expert Evidence, Ed. J. Inwinklereid. Practicing Law Institute (1981)

**The Multisystem Analysis of Bloodstains - Group I** (1986) J. For. Sci. 31,4,1439-49 Wraxall, Stolorow

**Using Forensic Techniques to Verify Self-Reports of Needle-Sharing AIDS**, Gibson, Guydish, Wraxall, Blake, Clark, Case (1991) AIDS, Vol 5, No. 9, 1149-50

**Evaluation of Prostate – Specific Antigen as a Quantifiable Indicator of Condom Failure in Clinical Trials**, Walsh, Frezieres, Nelson, Wraxall and Clark (1999) *Contraception*; 60:289-298.

**Use of prostate-specific antigen (PSA) to measure semen exposure resulting from male condom failures: implications for contraceptive efficacy and the prevention of sexually transmitted disease**, Walsh, Frezieres, Peacock, Nelson, Clark, Bernstein, Wraxall. *Contraception*. 2003 Feb;67(2):139-50

**"Effectiveness of the male latex condom: combined results for three popular condom brands used as controls in randomized clinical trials"** – Wraxall, Walsh, Frezieres, Peacock, Nelson, Clark & Bernstein (2004) *Contraception*, 70: 407-413

***PAPERS PRESENTED***

1972      **Erythrocyte Acid Phosphatase in Bloodstains** - Wraxall  
Vith International Meeting of Forensic Sciences, Edinburgh, Scotland

**The Differentiation of Semen and Vaginal Secretion Using Acid Phosphatase –**  
Wraxall, Emes  
Vith International Meeting of Forensic Sciences, Edinburgh Scotland

1975      **Group Specific Component in Bloodstains** - Wraxall  
VIIIth International Meeting of Forensic Sciences, Zurich, Switzerland

1977      **EAP in Bloodstains - Current Methodologies** - Wraxall  
California Association of Criminalists, Palm Springs, CA

1978      **Recent Advances in Electrophoretic Techniques of Bloodstain Analysis** -  
Wraxall, Stolorow  
American Academy of Forensic Science, St. Louis, MO  
Mid-Western Association Regional Conference, Plymouth, MI

**Multisystem Analysis of Bloodstains** - Wraxall, Stolorow  
Mid-Atlantic Association Regional Conference, Alexandria, VA  
Southern Association Regional Conference, TN  
California Association of Criminalists Conference, Big Bear Lake, CA  
VIIIth International Forensic Sciences Meeting, Wichita, KS  
Northwest Association Regional Conference  
Northeastern Association Regional Conference, Storrs, CT

**Population Frequency Distribution of Erythrocyte Glyoxalase I Utilizing a New Method of Combined Starch-Agarose Gel Electrophoresis"** - Stolorow, Wraxall  
VIIIth International Forensic Sciences Meeting, Wichita, KS

- 1979      **Recent Developments in SAP/VAP Procedures"** - Wraxall  
Southern Association of Forensic Sciences, Raleigh, N.C.
- Update on Multisystems** - Wraxall  
Southern Association of Forensic Sciences, Raleigh, N.C.
- Needed and New Areas of Research in Forensic Serology** - Wraxall  
Northwest Association Regional Conference, Spokane, WA
- 1980      **PGM Subtyping by Conventional Electrophoresis** - Wraxall, Provost  
Northwest Association Regional Conference, Boise, ID  
California Association of Criminalists Conference, Santa Barbara, CA  
Combined SAFS, MWAFS, MAFS and NEAFS Conference, Kentucky
- Admissibility of Blood Test Evidence in Paternity Litigation**  
California Legislature, Assembly Committee on Judiciary, Los Angeles, CA
- 1981      **Multisystem Approach to Red Cell Black Population Markers - Group IV**  
Harmor, Wraxall, Blake  
California Association of Criminalists/NWAFS, Lake Tahoe, NV
- 1982      **Sequential Semen Analysis** - Wraxall  
Southern Association Forensic Scientists, Savannah, GA.
- Multisystem Approach to Red Cell Black Population Markers - Group IV** - Harmor,  
Wraxall, Blake  
Southern Association Forensic Scientists, Savannah, GA
- The Use of P30 in the Analysis of Semen - An Update** - Wraxall  
1st Interamerican Congress of Forensic Sciences, Sacramento, CA
- Semen Quantitation using P30 Antigen** - Rawlinson, Wraxall  
1st Interamerican Congress of Forensic Sciences, Sacramento, CA
- 1983      **Current Technology and Methodology - Is it Adequate** - Wraxall  
Canadian Forensic Science Soc./NWAFS - Joint meeting; Vancouver, B.C.
- Semen Testing in Rape Cases** - Wraxall, Fazio  
Advanced Trial Advocacy, California District Attorneys Association, San Francisco, CA
- Use of P30 Antisera in Sexual Assault Cases** - Wraxall, DeHann  
Canadian Forensic Science Soc./NWAFS - Joint meeting, Vancouver, B.C.
- Forensic Serology** - Wraxall  
Criminal Trial Lawyers Association, San Francisco, CA

- 1984      **Use of P30 Antisera in Sexual Assault Cases** - Wraxall, Rawlinson-DeHann  
Xth International Meeting of Forensic Sciences, Oxford, England
- 1985      **Use of P30 Antisera in Sexual Assault Cases** - Wraxall, DeHann  
NWAFFS/SWAFFS - Joint meeting, Denver, CO
- Forensic Serology** - Wraxall  
California Public Defenders Association, Sacramento, CA
- 1986      **Immunoglobulin Allotyping of Forensic Material**  
Forensic Serology Users Group, New Orleans, LA
- A Rape Case - Semen Testing, What It Does and Does Not Mean** - Wraxall, Ravitz  
Oklahoma Crime Defendant Lawyer's Association Seminar on Forensic Evidence
- Gm and Km Typing of Bloodstains** - Wraxall, Harmor  
California Association of Criminalists, Concord, CA
- NWAFFS Regional Meeting, Boise, ID  
            Combined Meeting SAFFS, MWAFFS, MAFFS, NEAFFS, SWAFFS, Lexington, KY
- Gm Workshop Northwest Association Regional Meeting, Boise, ID
- Blood and Semen** - Wraxall, McNally  
Advanced Cross Examination of Experts Seminar, Department of Public Advocacy,  
Frankfort, KY
- 1987      **The Use of P30 in Sexual Assault Examination** - Rawlinson, Wraxall
- First World Meeting of Police Surgeons and Police Medical Officers Twin International  
meetings with Pan American Association of Forensic Science, Wichita, KS
- Forensic Serology** - Wraxall and Ney  
State Board of Indigent's Defense Services Criminal Defense Seminar, Manhattan, KS
- 1989      **The Differentiation of Domestic Sheep & Bighorn Sheep Using The Enzyme  
Superoxide Dismutase (SOD)**, Wraxall, Rawlinson, Banks, Levine, Jessup, NWAFFS  
Meeting Ashland, OR
- Genetic Marker Studies In Bighorn Sheep**, Rawlinson, Wraxall, Jessup, Banks, Levine  
NWAFFS Meeting Ashland, OR
- Forensic Serology** - Wraxall  
American Association of Clinical Chemistry, Burlingame, CA
- 1990      **Forensic Serology for the Defense** - Wraxall  
California Association of Criminalists, Long Beach, CA

- 1991      **Serology Its Importance in Defense Investigation** - Wraxall  
Defense Investigators Association, South Lake Tahoe, CA
- 1996      **DNA Simplified** - Wraxall  
Public Defenders, Oklahoma City, OK
- 1997      **Blood on the Bullet: The Detection of Blood on Fired Bullets** - Jason, Wraxall  
49th American Academy of Forensic Sciences, New York, NY
- Use of Capillary Electrophoresis for STR Phenotyping and Comparison with Gel Electrophoresis Method** - Wraxall  
89<sup>th</sup> California Association of Criminalists Seminar, Sacramento, CA
- Life in a Private Laboratory** – Wraxall, Harmor  
Joint California Association of Criminalists/Forensic Science Society Meeting  
Harrogate, England
- 1998      **Casework Using Capillary Electrophoresis on the 310 Genetic Analyser** - Wraxall, Harmor, Fedor  
91<sup>st</sup> California Association of Criminalists Seminar, Monterey, CA
- Summary of Population Data Obtained from Using Capillary Electrophoresis and Profiler Plus** - Wraxall, Fedor, Watkins and Greco  
92<sup>nd</sup> California Association of Criminalists Seminar, San Diego, CA
- 1999      **DNA for Dummies** - Wraxall  
Advanced Criminal Law and Death Penalty Seminar, Oklahoma City, OK
- Population Database for 6 STRs in 3 Populations** – Wraxall, Fedor and Herdman  
94<sup>th</sup> California Association of Criminalists Seminar, Ontario, CA
- 2001      **Grandma Bear's Hair** – Bridgeford, Wraxall  
53<sup>rd</sup> American Academy of Forensic Science, Seattle, WA
- Dye Terminator Removal in Mitochondrial DNA Sequencing Reactions Using Magnetic Beads** – Bridgeford, Wraxall  
53<sup>rd</sup> American Academy of Forensic Science, Seattle, WA
- Mitochondrial DNA Analysis: Casework Examples and Database Compilation** - Bridgeford, Wraxall  
97<sup>th</sup> California Association of Criminalists Seminar, Granlibakken, CA
- 2002      **Recent Advances in Forensic DNA Technology - Mitochondrial and Nuclear DNA Typing** - Wraxall  
Biotechnology Seminar Series, Cal State University, Fresno
- Postconviction DNA Testing Experiences – "The Bitten Penis Case"** - Wraxall  
99<sup>th</sup> California Association of Criminalists, San Francisco, CA

- 2003        **"The Case of the Bitten Penis"** - Wraxall  
Joint California Association of Criminalists/Forensic Science Society Meeting, Oxford  
England.
- "Advances on DNA in Forensic Testing"** - Wraxall  
Legal Secretaries 2nd Quarterly Conference. Modesto, CA.
- 2004        **"Roles of Markers in Forensics"** -Wraxall  
Evaluation of Markers of Intercourse in Trials of Vaginal Barriers.  
Conrad, Washington D.C.
- 2006        **"The Examination of Mitochondrial DNA Variation Across Three Different  
Populations"**- Wraxall, Fedor, Garcillano  
Joint California Association of Criminalists/Forensic Science Society Meeting,  
Concord, CA
- 2006        **"A Forensic Journey"**- Wraxall  
Founders Lecture, California Association of Criminalists  
Seminar, Temecula, CA
- 2007        **"A Forensic Journey"**- Wraxall  
Association of Forensic DNA Analysts and Administrations  
Austin, TX
- 2009        **"Taking a Bite Out of Crime: DNA Analysis of Property Crime Samples"**  
- Wraxall, Butler  
Twentieth International Symposium on Human Identification. (Promega), Las Vegas, NV
- 2010        **"Taking a Bite Out of Crime: DNA Analysis of Property Crime Samples"**  
- Wraxall, Butler  
International Association for Identification  
95<sup>th</sup> International Education Conference  
Spokane, WA
- 2010        **"DNA for Dummies"**  
-Wraxall  
Scientific Evidence for the Defense: DNA and Beyond  
Omaha Nebraska

**PROFESSIONAL ASSOCIATIONS**

Forensic Science Society (member)  
California Association of Criminalists (member)  
Northwest Association of Forensic Scientists (member)  
International Society for Forensic Haemogenetics (member)