New Objective Methods for the Examination of Questioned Documents - Part 2: Statistical methods for the objective examination of Arabic signatures

Bio: More than thirty years ago, Professor Peter White PhD CSci FFSSoc C.Chem FRSC, started his forensic career with the Metropolitan Police Forensic Science Laboratory in London. After 15 years, he moved to the University of Strathclyde where he became Director of the Forensic Science Unit. In 2003 he was appointed Professor of Forensic Science at the University of Lincoln. His research interests are wide ranging and he has over 60 publications, 9 patents and is the Editor of the very successful book "Crime Scene to Court," which is about to go into its 3rd Edition.

Abstract: Results of a major study involving the measurement or classification of features in Arabic signatures and subsequent statistical analysis, will show that reproducible, quantitative and objective evidence can be obtained. The approach is based upon seeing the signature as a picture composed of various features (variables) which are analysed by Principal Component Analysis (PCA) and MANOVA statistical methods. The results presented illustrate that these methods could also be applied to the examination of Arabic handwriting and Western and other scripts.

Manual methods currently being used for identifying features and associations between features by forensic document examiners is extremely time consuming and subjective. To overcome these problems the natural variation within an individual’s Arabic signature was studied using Principal Component Analysis (PCA) with orthogonal rotation of the components. With either legible or illegible types of signature it will be shown that PCA provides an objective, robust and simple routine for identifying the features and importantly the ranking and associations between features. Results presented will also show how the method can assist in confirming the authenticity of signatures.

The use of Multivariate Analysis of Variance (MANOVA) will be presented as an objective method for identifying features that can then be used to assist in the examination of forged signatures or to discriminate between different writers. With legible signatures being composed of words used in normal Arabic script, this study identifies the use of MANOVA for comparison of normal handwriting, not only in Arabic but scripts or signatures from any part of the world.
Aloyoni, Mohammed, Jubran Gushaish, Yaser Alzahrani

Decipherment of Counterfeited Travellers Cheques

Bio: Mohammed Aloyoni is a Senior Examiner in the central lab of Questioned Documents in Saudi Arabia. He holds a degree in Chemistry and has 17 years experience in the QD field. Jubran Gushaish holds a Chemistry degree and has 13 years experience in the QD field. Yaser Zahrani holds a Biochemistry degree and has 6 years experience in the QD field. Both co-authors also work in the central lab of Questioned Documents in Saudi Arabia.

Abstract: This is a case of counterfeited (over 420) Travellers Cheques (a value over $40,000) was delivered to our Lab (central lab of Saudi Arabia in Riyadh) by the police head office, they knew the T.C. are counterfeited through the unmatched of their serial numbers and value. A decipherment report was requested, which we will unveil through this paper.
Hyperspectral Imaging v. Video Spectral Analysis: A Comparison of Ink Discrimination Capabilities

Bio: Ms. Linda Batykefer earned her Bachelor’s of Science in Chemistry from the University of Pittsburgh in 2005 before pursuing her M.B.A. in Marketing and International Business from the Keller Graduate School of Business in 2009. Ms. Batykefer previously worked as a material scientist at Bristol-Myers Squibb pharmaceutical company performing chemical imaging-based studies. Ms. Batykefer also spent a number of years working as an application scientist at ChemImage Corporation developing pharmaceutical and forensic applications. Currently, Ms. Batykefer is working as the Marketing Coordinator for ChemImage, helping to develop products, applications, and communications around hyperspectral imaging technology.

Abstract: Forensic document examiners have a need for reliable and nondestructive methods for discriminating between handwritten entries made by different writing instruments. Traditional methods of analysis for the nondestructive differentiation of inks include the use of: dichroic filters, ultraviolet, digital imaging and video spectral analysis. Of these, video spectral analysis may be the most commonly used nondestructive method of analysis used today to discriminate between visually similar inks.

In a previous study[1], 44 different black ballpoint pens were used to make 990 pen-pair samples for discrimination analysis comparing two nondestructive techniques: digital imaging[2] and video spectral analysis[3]. At least 187 pen-pairs could not be discriminated through the use of video spectral analysis methods.

A blinded study will be performed on a subset of these 990 pen-pair samples, including some of the 187 pen-pairs which were previously found to be indistinguishable through video spectral analysis methods. This pilot study will assess the discriminatory power of hyperspectral imaging technology[4]. A comparison of results between hyperspectral imaging (operating in the visible/NIR reflectance and NIR luminescence modes) and traditional video spectral analysis will be presented. Preliminary data indicates that hyperspectral imaging is capable of discriminating black ballpoint pen-pair samples previously found to be indistinguishable through video spectral analysis.

[3] RIR and IRL using a Foster & Freeman VSC4C
[4] ChemImage’s CONDOR™ hyperspectral imaging system
Lindblom, Brian, P. J. Beeks, Lyne Desroches, Robert Gervais, Magdalena Ezcurra, Kathleen Nicolaides, Larry Olson, Jeff Taylor, Diane Tolliver
Fax Font Project VI TTI Database 2009 Update

Bio: Brian Lindblom has been in the field since 1982. He is in private practice in Ottawa and Toronto. He is a member of the ASQDE, AAFS, CSFS and holds a Diploma in Document Examination form the Forensic Science Society in England. He is certified by the ABFDE and served on its board of directors.

PJ Beeks earned a Bachelor of Arts and a Master of Arts from Northern Kentucky University. She has been working for the Indiana State Police Laboratory for 2 years, and is nearing the final stages of the training program.

Kathleen Annunziata Nicolaides has a BA in Literature and the English Language from SUNY-Binghamton (now Binghamton University). She joined Affiliated Forensic Laboratory, Inc. in 1997 and trained with William Flynn there from 1998-2001. Kathy became a diplomate of ABFDE in November 2005. She is a member of ASQDE, SWAFDE, and ASTM. She currently serves as Secretary and Newsletter Editor for SWAFDE and was recently elected to the Board of ABFDE.

Magdalena Ezcurra holds a Masters Degree in Chemistry, and she is working in public and private practice as a Forensic Document Examiner. She also teaches Forensic Analysis at the University of the Basque Country. She has been a Corresponding member of the American Society of Questioned Documents Examiner for the last 5 years.

Lyne Desroches is a forensic document examiner with the Canada Border Services Agency in Ottawa. She has a Bachelor degree in Chemistry from the University of Sherbrooke, Quebec. Lyne is certified by the American Board of Forensic Document Examiners. She is also a member of the Document Section of the Canadian Society of Forensic Science.

Abstract: The Transmit Terminal Identifier (TTI) collection has once again been updated. Improvements and the collection of additional samples continue since its initiation in 1992. This 6th version contains more than 940 samples, two corrections, and 150 new TTI s. The database continues to operate in MS Access without any changes to the features. The new search form, layout and results page, which was redesigned in 2008, will continue to assist examiners with their searches. A brief presentation will be given.
Berthold, Nancy, Joel Harris

Forensic Document Examiner Competency Profile

Bio: Nancy Berthold works for the Treasury Inspector General for Tax Administration (TIGTA) as the Forensic Science Laboratory Director. She is a signing, full-service examiner since 1980 and an ASQDE Regular member since 1989.

Abstract: In the past decade the use of competencies has become a common and reliable human resources (HR) tool in selecting the right candidate for a particular role. However, too often candidates have been selected for their superior knowledge, skills and abilities (KSAs) only to be let go or move on due to a poor organizational fit. Hence the saying, "hiring for skill and firing for fit." Competency based management (CBM) identifies the functional skills (functional competencies) or KSAs required to meet the duties/tasks in the role and the personal characteristics (organizational competencies) required by the incumbent to deliver these KSAs at the organization's desired level of performance. This paper will guide the audience through the competency profile for the questioned document examiner positions at the Treasury Inspector General for Tax Administration (TIGTA) Forensic Science Laboratory. This process can then be suitably modified by any organization, private or public, to develop competency profiles for any forensic science group/discipline, not just forensic document examiner (FDE) roles. In conclusion, these requirements will be translated into the announcement or bulletin design for hiring.
Bey, Robert
Maintaining an Adobe Photoshop Toolbox

Bio: Robert Bey is a Private Forensic Document Examiner from Rockville Centre, NY. He is a forensic science graduate of John Jay College of Criminal Justice, and has since completed his formal 3-year training in forensic document examination. He is a member of AAFS and NEAFS and has been in private practice since 2007.

Abstract: Adobe Photoshop offers the FDE a wealth of effective tools and applications for a variety of document examination applications. Some applications include the creation of court charts, use of virtual grids, overall image enhancement, and ink differentiation to name just a few. This paper will delve into the creation of grids in Photoshop including their manipulation, customization, and printing. Also discussed will be additional ‘tips and tricks’ that the author has as part of his Photoshop toolbox. Step by step instructions will be detailed in how to create a virtual grid and then manipulate and print the image. Time saving techniques and other methods of automation will also be discussed.
Cheng, Yau-Sang Patrick

A Study on the Sequence of Writing of Chinese Characters in the Chinese Population in Hong Kong

Bio: Yau-Sang Patrick Cheng holds a BSc in Chemistry and a MSc in Forensic Science, and he is an ASQDE Corresponding Member. He learned about questioned document examination in the Questioned Documents Section of the Hong Kong Government Laboratory. Equipped with 19 years of experience, he is now in private practice as a Forensic Handwriting and Document Examiner.

Abstract: The formation of a Chinese character or word is different from that of an English word. An English word is formed from a combination of any number of the 26 letters of the Alphabet whereas a Chinese word is formed from a combination of any number of the eight essential strokes. While an English word is written in a linear mode from left to right, a Chinese word is written stroke by stroke in a 2-dimensional manner in a prescribed sequence of writing. The present study aims to investigate how closely people stick to the defined sequence of writing. The results would be useful, among other handwriting characteristics, in the identification of authorship.
Drexler, Steven G.

PowerPoint® in the Courtroom

Bio: Steve is a 1980 graduate of the University of Central Florida where he earned a Bachelor of Science in Forensic Science. Steve is a former Trace Evidence Examiner For the Florida Department of Law Enforcement and the Alabama Department of Forensic Sciences. He began training in Questioned Documents in 1996 under the direction of Dr. Richard Roper in Montgomery, Alabama. He retired in 2005 after 25 years of government service and is currently in Private Practice. He is a Diplomate of the American Board of Forensic Document Examiners and a member of the American Society of Questioned Document Examiners, the Southeastern Assn. of Forensic Document Examiners and the Questioned Document Section of the American Academy of Forensic Sciences.

Abstract: This presentation will discuss the materials required, their cost and the many advantages of PowerPoint® presentations in the courtroom. Maintaining complete and accurate results of examinations is an important component of the services offered by the questioned document examiner. But it is in the courtroom where the examiner has the opportunity to fully explain the meanings of his opinions to the judge or jury. However, conclusions and opinions have little impact unless they are presented in an understandable manner. Previously the document examiner was limited to the 35mm photographic slides or poster board charts to illustrate his findings. Today, laptop computers, digital scanner, projectors, and imaging software allow the testifying examiner to fully illustrate and professionally present and explain his results in the courtroom.
Durina, Marie  
**WORKSHOP: Handwriting of a Homogenous Population**

Bio: Marie Durina is a Forensic Document Examiner with the San Diego Sheriff’s Crime Lab. She completed her laboratory’s three-year training program August 2006, under the tutelage of Senior Forensic Document Examiner, Linton Mohammed.

Marie graduated magna cum laude in 1989 with a Bachelor’s Degree in Business Administration from Baruch College - City University of New York, and also possesses Certificate of Achievement in Administration of Justice from Miramar College in San Diego, with a specialty in Criminal Investigations. In December, 2006 Marie was also the very first recipient of a Graduate Course of Academic Studies Certificate in Forensic Document Examination from Oklahoma State University.

Marie is a provisional member of the American Society of Questioned Document Examiners, a provisional member of the American Academy of Forensic Sciences Questioned Document Section, and a member of the ASTM. She became an ABFDE diplomate in August, 2008. The workshop Marie is presenting today hopes to permit her to upgrade her ASQDE membership from Provisional to Regular member.

Abstract: This is a half-day workshop on comparing the handwriting of a homogenous population. It is based on a research project where samples of writing were obtained from over 50 writers, and their teachers, who were taught the same copybook style at the same school approximately 4 decades ago. The study sought to find supporting evidence that: 1)There is a high degree of inter-writer variation among writers, even in populations where the driving forces for variation are low; and 2)Among these populations, FDEs would still be still be able to extract features from the writing samples that enable them to attribute authorship. The research also hopes to answer criticisms that earlier studies on the uniqueness of handwriting (e.g. Dr. SriHari’s) did not include populations from "homogeneous writing communities", and relied on computer analysis of handwriting, rather than on human examiners. During the hands-on portion of the workshop, attendees will be given a sampling of questioned and known writings obtained from the homogeneous population.
Eggleston, Charles  

Graduate Studies in Forensic Document Examination - An Update on Online Programs at Oklahoma State University Center for Health Sciences  

Bio: Charles Eggleston is the lead instructor in graduate forensic document examination studies at Oklahoma State University - Center for Health Sciences in Tulsa, Oklahoma. He is a regular member of this Society and a member of the American Academy of Forensic Sciences. He is a Diplomate of the American Board of Forensic Document Examiners, and also a Diplomate of the American Board of Criminalistics.  

Abstract: This poster presentation updates attendees on recent changes to the program offerings of online graduate studies in forensic document examination at Oklahoma State University Center for Health Sciences (OSU-CHS), Tulsa, Oklahoma.  

In August 2003, attendees at the ASQDE Meeting in Baltimore, Maryland, were first informed of the development and initiation of online graduate academic coursework in forensic document examination at OSU-CHS. The project goals were twofold: to further academic acceptance of forensic document examination as a forensic science discipline, and to provide graduate academic coursework as an augment to traditional forensic document examination training regimens. In the ensuing five academic calendar years, 26 individuals have successfully completed a total of 150 credit hours in courses specific to document examination, and six individuals have completed a master’s degree with a specialization in the field.  

Improvements to the program have brought about several changes, including a Graduate Certificate in Forensic Examination of Questioned Documents, awarded upon completion of four online academic courses specific to the discipline; a substantial tuition waiver for governmental employees participating only in the certificate program; an additional online course covering historical aspects of forensic document examination; the establishment of forensic document examination as an academic track in the master’s degree program; and course revisions to reflect the latest published texts, articles and empirical studies in the discipline.
Ezcurra, Magdalena, M. Itxaso Maguregui, Rosa Alonso

Evaluation of Loss of Phenoxyethanol from a Ballpoint Pen Ink With Time by GC-MS Depending on the Location of the Signature on the Document

Bio: Magdalena Ezcurra holds a Masters Degree in Chemistry, and she is working in public and private practice as a Forensic Document Examiner. She also teaches Forensic Analysis at the University of the Basque Country. She has been a Corresponding member of the American Society of Questioned Documents Examiner for the last 5 years.

Abstract: The loss of phenoxyethanol (PE), since an ink is deposited on the paper, is one of the methods used nowadays to determine if an ink has been recently placed on the document or if, on the contrary, has long ago been placed there. This work is a deep study about differences in the aging curves based in the loss of PE when an ink is placed on the first page or on an internal page of the document. A possible contamination in the values of PE has been also studied taking into account the amount of PE absorbed and retained by the paper fibres in the pages preceding the one on which the signature is placed. Gas Chromatography-Mass Spectrometry (GC-MS) has been used to evaluate the amounts of PE.
Gaudreau, Marc  
**The Application of Decision Analysis to Forensic Document Examination**

Bio: Marc obtained a B. Sc. (Chemistry) from the University of Ottawa in 1981. He trained and worked as a forensic document examiner with the RCMP from 1981 to 1985. From 1985 to 1995 he worked in Scientific and Technical Services for CSIS. He has spent the last 13 years as manager of the Forensic Document Section of the CBSA with responsibility for overseeing the national delivery of forensic document examination services to clients from within the CBSA, as well as other federal government departments, provincial and local governments. He is a member of the American Board of Forensic Document Examiners, and the American Society of Questioned Document Examiners. Marc is presently Director of Materials Research and Development for the Canadian Bank Note company in Ottawa, Canada.

Abstract: Decision Analysis is a technique used under conditions of uncertainty for systematically representing and examining all the relevant information for a decision. This paper will discuss the application of Decision Analysis to Forensic Document Examination as a tool to aid in the interpretation of data obtained during examinations.
Grafl, Christian

Membership of Societies Like the ASQDE - Only an Old Tradition or a Modern Imperative?

Bio: Christian Grafl was born in 1959 in Vienna, Austria, and studied law at the university of Vienna. Since 1981 he has been a member of the scientific staff at the institute of criminal law and criminology, where he has been trained as an expert on handwriting examination, too. Currently he holds the position of an associate professor of criminology and criminalistics at Vienna university; he is a judicial certified expert in handwriting examination in Austria, regular member of the German GFS (“Gesellschaft für Forensische Schriftuntersuchung”), and corresponding member of the ASQDE.

Abstract: The paper seeks to address the question why experts should become members of professional associations. If candidates are asking why they should apply for membership what do we answer? Is it only an old tradition including meetings of good fellows happy to see each other once a year in nice surroundings? Or is a professional association necessary for experts to set up a network providing a forum for the exchange of information and fostering education? Last but not least, we have to ask ourselves what our individual contribution to a prosperous society is.
Bio: Frank was born, raised, educated, married and trained, not necessarily in that order. He is a Society member and ABFDE Diplomate, and was head of the Mississippi State Crime Lab Questioned Documents Section until his retirement in 2002, when he joined Howard Rile in private practice in California. He would tell you more, but he was limited to only three sentences and this is the third one.

Abstract: This workshop will present a number of interesting/challenging signature comparisons which will be discussed by the attendees. Approaches to the examination process and assessment of the characteristics noted in the signatures will be shared. The goal of this workshop is to encourage the exchange of ideas among the participants so that everyone can be exposed to concepts and approaches in signature problems that they might not have considered previously.
Kelly, Mary, Kirsten Singer, Dr. Moshe Kam
PANEL: Evolution since "Exorcism"

Bio: Mary Kelly is currently employed part-time at the Lake County Crime Lab. Prior to her current employment she was employed for 22 years at the Cleveland Police Forensic Laboratory. Mary has a Bachelor of Science degree and a Law Degree. She is a previous Director of the ASQDE and past President of the ABFDE.

Kirsten Singer is newly employed with the Dept of Veterans Affairs, OIG, Office of Investigations forensic document laboratory in Washington, DC. She received training in forensic document examination with the Virginia Division of Forensic Science, has a bachelor’s degree from the University of Virginia, and Master of Forensic Science from George Washington University.

Abstract: The year 2009 (besides being the 200th birth anniversaries of Darwin, Lincoln, and Poe) is also the 20th anniversary of the paper, "Exorcism of Ignorance as a Proxy for Rational Knowledge: the Lessons of Handwriting Identification 'Expertise.'" This panel will re-visit what occurred a mere twenty years ago, and what progress has been made in the nature of research, standardization, judicial challenges and acceptance in court.
Quantitative Hyperspectral Imaging for Applications Beyond Distinguishing Inks and Enhancing Legibility

Bio: Marvin Klein received a PhD in the field of laser physics and non-linear optics from the University of Kaiserslautern in Germany in the year 2000. After one year of postdoctoral studies at the University of Twente in the Netherlands, he joined a laser company as researcher working on fiber lasers and optical frequency conversion schemes for infrared laser spectroscopy. Since 2003, Marvin is senior research engineer at the company DEMCON in The Netherlands where he develops spectral imaging systems for forensic document analysis and other applications.

Abstract: In forensic document analysis, multi-spectral reflectance and luminescence imaging are well-established non-destructive techniques. Standard applications of multi-spectral imaging include the enhancement of faint or invisible writing and distinguishing of inks in order to discover and prove alterations. Multi-spectral imaging also has non-standard applications for a number of tasks such as the analysis of thin-layer chromatography (TLC) and the investigation of degradation processes on writing material. Both standard and non-standard applications can benefit from the transition from conventional spectral imaging to quantitative hyperspectral imaging (QHSI) made by the SENTINEL instrument. For example, the calibrated spectral data provided by the instrument can be used to generate false-colour images that facilitate the comparison of the positions and intensity of bands of the various samples on a TLC slide. As the second non-standard application, we discuss how the QHSI technique can be used to investigate for example the effects of light-aging on the luminescence characteristics of paper and writing.
LaPorte, Gerry, Danna Bicknell

WORKSHOP: The Examination of Documents Produced Using Inkjet Technology (Part I)

Bio: Gerry LaPorte has more than 15 years of experience in the field of forensic science and more than 8 years of experience performing physical and chemical examinations on a variety of documents to determine how they were produced, where they may have originated from, and if they are authentic. He trained with the United States Secret Service in the field of questioned document examination with specialization in the area of ink and paper analysis. He served as the Chief Research Forensic Chemist until March of 2009 and is currently employed with the Department of Justice as a Forensic Policy Program Manager. He is a member of the American Academy of Forensic Sciences (AAFS), American Society of Questioned Document Examiners (ASQDE), American Society of Testing and Materials (ASTM) International, Mid-Atlantic Association of Forensic Scientists (MAAFS), and the Mid-Western Association of Forensic Scientists (MAFS). He is also a contributing member in the Scientific Working Group for Questioned Documents (SWGDOC) and the European Document Examiners Working Group (EDEWG). He has conducted more than 50 lectures, seminars, and training events in 13 different countries for law enforcement agencies, professional organizations, and technical experts, and has published several scientific papers in the area of forensic document examination and authored a chapter on document fraud and forgery.

Abstract: To provide an extensive review of the theory of the inkjet process and provide practical training with regard to the comparison and evaluation of questioned documents printed with an inkjet device. The workshop will focus on the importance of a multifaceted approach using physical and optical examinations that relate to comparing multiple documents and determining authenticity. A cursory discussion of the chemical analyses of inkjet inks will be provided to demonstrate the importance in assessing document authentication with respect to the purported date of production. Practical problems will be provide to attendees prior to the meeting and discussed in detail as part of the workshop.
LaPorte, Gerry

Envelope Examinations and the Anthrax Investigation

Bio: Gerry LaPorte has more than 15 years of experience in the field of forensic science and more than 8 years of experience performing physical and chemical examinations on a variety of documents to determine how they were produced, where they may have originated from, and if they are authentic. He trained with the United States Secret Service in the field of questioned document examination with specialization in the area of ink and paper analysis. He served as the Chief Research Forensic Chemist until March of 2009 and is currently employed with the Department of Justice as a Forensic Policy Program Manager. He is a member of the American Academy of Forensic Sciences (AAFS), American Society of Questioned Document Examiners (ASQDE), American Society of Testing and Materials (ASTM) International, Mid-Atlantic Association of Forensic Scientists (MAAFS), and the Mid-Western Association of Forensic Scientists (MAFS). He is also a contributing member in the Scientific Working Group for Questioned Documents (SWGDOC) and the European Document Examiners Working Group (EDEWG). He has conducted more than 50 lectures, seminars, and training events in 13 different countries for law enforcement agencies, professional organizations, and technical experts, and has published several scientific papers in the area of forensic document examination and authored a chapter on document fraud and forgery.

Abstract: Letters containing anthrax spores were sent via the U.S. postal service in the fall of 2001 killing 5 and infecting 17 others. The envelopes that were used for the attacks contained three separate pre-printed areas to include a; i) 34¢ Federal Eagle stamp on the front in the top right corner; ii) recycle statement on the back in the lower portion and; iii) a U.S.P.S. copyright marking on the back. The printed image and text was produced using flexography.

The presentation will focus on the use of a generally accepted methodology used to analyze, compare, and evaluate the envelopes from the anthrax investigation. Two separate research endeavors were conducted. The first involved a controlled production run of pre-printed envelopes to assess batch variation based on the morphological characteristics of printing defects. The second was a blind study to evaluate the reliability of associating questioned and known envelopes suspected to have originated from the same source and the potential error rate that may be encountered.
LaPorte, Gerry, Diana Harrison, the Frequency Project Group  
PANEL: After NAS, Now What?

Bio: Gerry LaPorte trained with the United States Secret Service in the field of questioned document examination with specialization in the area of ink and paper analysis. He served as the Chief Research Forensic Chemist until March of 2009 and is currently employed with the Department of Justice as a Forensic Policy Program Manager. He is a member of the AAFS, ASQDE, ASTM International, the MAAFS, and the MAFS. He is also a contributing member in the Scientific Working Group for Questioned Documents (SWGDOC) and the European Document Examiners Working Group (EDEWG).

Diana Harrison is the Chief of the Questioned Documents Unit of the FBI Laboratory where she oversees a staff of 28 examiners and technicians. She holds a Bachelor of Science degree in Criminal Justice and Sociology and is a member of MAAFS and ASTM, International. She is also participant and subchair of SWGDOC.

Abstract: This panel is intended to discuss: 1) what occurred at the NAS hearings, 2) a summary of the NAS recommendations, 3) plans for action by government entities, and 4) plans for action by individual FDEs and their professional organizations.
Lauterbach, Joyce
ABFDE Update

Bio: Joyce Lauterbach has been actively engaged in Forensic Document Examination for 23 years and is employed by the Internal Revenue Service. She has been a Regular member of the ASQDE since 1993, and is a Past President of the American Board of Forensic Document Examiners.

Abstract: Update on the activities of the American Board of Forensic Document Examiners.
Lee, Jim

ASQDE Corporate Sponsor: Foster & Freeman - Introducing the VSC400

Bio: Jim Lee received his training in questioned document examination at the U.S. Army Crime Lab from 1982 -1984, retired as Division Chief of the Lab in 1992 and served as a Questioned Document Examiner for the State of Florida from 1992-2002. He is a Diplomate of the ABFDE, a member of ASQDE, AAFS, ASTM, IAI, MAFS and SAFDE. He earned his Master of Science and Bachelor of Science degrees from Troy State University (TSU) and has a private practice in questioned document examination in Liberty, Utah.

Abstract: Since its founding in 1978 Foster + Freeman has been on the cutting edge of developing instrumentation for forensic document examination. In 1980, they released their first Video Spectral Comparator (VSC). Over the following years the VSC under went many transformations, eventually evolving into two major product lines, the VSC6000 and the VSC4Plus, introduced in 2007, respectively.

The VSC6000 remains the flagship instrument of the VSCs, offering the highest possible performance and capabilities. The VSC4Plus balances high performance with the need to be very simple to use by document examination technicians at border crossings, departments of motor vehicles, etc. This left a gap in the market for a mid-range instrument more sophisticated than a VSC4Plus but less expensive than the VSC6000.

To fill this gap, foster + freeman, in 2008, released their latest version of the VSC, the VSC400. Similar in size to the VSC4Plus, it is fully operated via desktop personal computer(PC) or laptop computer. It offers excellent image quality using 3.2M pixel digital camera. The image is displayed on a 24 inch flat panel monitor on the desktop version with a 1920 x 1200 display. It uses a Firewire color camera with 360nm to 1100nm spectral response. The magnification range of the VSC400 is x1.5 to x55(optical). The VSC400 detects alterations and counterfeits, reveals covert security features, provides documentary evidence and provides instant results.

The VSC400 will prove to be an invaluable instrument for document examiners. This presentation will discuss the major features and capabilities of the VSC400.
Levinson, Jay, Yaacov Yaniv

A Questionable Land Transfer: Is it Legitimate?

Bio: Yaacov Yaniv was graduated from the Hebrew University of Jerusalem, Faculty of Humanities, with a B.A. in Arabic language & Literature and Middle Eastern Studies. He also completed course work leading to an M.A. degree in Middle Eastern Studies. His QD training was in the Israel Police. Since 1980, Yaniv has been practicing as a private QD examiner with special experience in Arabic.

Jay Levinson was graduated from New York University with a Ph.D. in Near Eastern Studies. His QD training was with Dr. David Crown with whom he worked for ten years at CIA. Levinson is now retired from the Israel Police and is an adjunct professor at John Jay College of Criminal Justice.

Abstract: Three land transfer documents written in Arabic were examined to determine authenticity. No comparison standards were available.
Lindblom, Brian, Robert W. Radley
WORKSHOP: Indentation Sequencing

Bio: Brian Lindblom has been in the field since 1982. He is in private practice in Ottawa and Toronto. He is a member of the ASQDE, AAFS, CSFS and holds a Diploma in Document Examination form the Forensic Science Society in England. He is certified by the ABFDE and served on its board of directors.

Abstract: This workshop explores the indentation sequencing technique. Specifically, the theory and practice of determining the execution order of visible ink lines and intersecting indented impressions is presented. Critical factors to consider when conducting such examinations are addressed in detail. Numerous examples involving various writing instruments will be shown. Attendees will receive practical exercises for completion prior to the conference and these will be reviewed during the workshop.
Bio: Lamar Miller is a semi-retired document examiner residing near Asheville, North Carolina. He has a B.S. in Pharmacy from Auburn University and M.S. from Troy State University. Lamar's basic training in questioned document examination was obtained from Georgetown University in Washington, DC, under Professor Joe English. He retired from the Alabama Department of Forensic Sciences in 1991 and worked in the Hart Questioned Document Laboratory in Miami until his second retirement. Now he is teaching basic digital photography for the North Carolina Justice Academy and a more advanced digital photography class for Sirchie Fingerprint Laboratories in North Carolina. He also teaches a survey course in questioned documents in the Continuing Education for Forensic Professionals program at West Virginia University. Lamar is a member of the ASQDE, the American Academy of Forensic Sciences and the Southeastern Association of Forensic Document Examiners.

Abstract: The author recently set about the task of digitizing a 30 year collection of color slides of questioned document cases. The aim was to get the slides into the computer in an inexpensive manner. The trials and tribulations of this chore are the subject of this paper.
Negherbon, Trooper Robert, Corporal Kelly Lentz

Sports Card Document Problem - Is One Piece of Evidence Enough?

Bio: Trooper Robert Negherbon is currently employed as a Forensic Document Examiner at the Pennsylvania State Police Bureau of Forensic Services, Questioned Documents Section. Training consisted of a two-year apprenticeship under Sgt. Gerhard Wendt in the laboratory followed by a six month period of supervised casework. Tpr. Negherbon has a B.S degree in Biology with a minor in chemistry from St. Francis University and a Master of Science degree in Microbiology from Thomas Jefferson University. Tpr. Negherbon’s ASQDE membership application is due for consideration at this year’s meeting and he is also a member of the Mid-Atlantic Association of Forensic Scientists.

Abstract: For forensic document examiners, in regards to handwriting or signature cases, one similarity, dissimilarity, or other singular piece of evidence is almost never enough to render a conclusive opinion. Document examiners need an overwhelming amount of evidence to conclusively say if one is or is not the author of a questioned writing or signature. An unusual theft case was submitted to our laboratory several months ago. A football card, purportedly signed by Ben Roethlisberger, was submitted to our laboratory along with a digital image from eBay showing what appeared to be the front side of the same card. The investigator in the case wanted to know if the actual card in hand was the exact same one that appeared on the eBay image. The card did not contain any identifying number; and the quality of the digital image was such that a comparison of the exhibits for identical defects could not be done. Also, the digital image did not contain a view of the reverse side of the card. The focus of the examination became the Ben Roethlisberger signature appearing on the front of the card. This presentation will detail the steps taken in this case to examine the signature, the opinion rendered, and possible issues that will need to be addressed to prepare the case for court.
Ridolfi, Douglas

**Correlation of Toxicology Results with Field Sobriety Tests, Driving and Handwriting. Is Handwriting a Reliable Indicator of Impairment?**

**Bio:** Doug Ridolfi has a Bachelor of Science degree in Criminalistics from the University of California, Berkeley School of Criminology, a Master of Science degree from San Francisco State University in Clinical Laboratory Science and a Master of Forensic Science Administration with a concentration in Questioned Documents from Oklahoma State University at Tulsa, on-line Masters program. He trained for two years full-time in questioned documents with the Illinois State Police. He is a member of the American Academy of Forensic Sciences, Midwestern Association of Forensic Scientists, Southwestern Association of Forensic Document Examiners and is certified as a Fellow with the American Board of Criminalistics. He is currently employed with the Alameda County Sheriff’s Department Criminalistics Laboratory.

**Abstract:** A signature displaying a high skill level from a suspected impaired driver is sometimes presented to the expert witness as an indicator of lack of impairment. This paper will examine logical arguments that are applicable to handwriting exhibits in impaired driving and similar cases and the degree of confidence to which one may make a statement regarding the contribution of alcohol and drugs to the appearance of the signature and handwriting.

Taking into account basic principles of neurological function, handwriting studies, performance measurement, toxicological effects of drugs and pharmacokinetic principles, what can be said about an individual's state of drug impairment based on handwriting? This presentation will look at appropriate questions to be asked and information that can be obtained from cases involving suspected alcohol and drug effects in order to reach more scientific conclusions regarding the role of alcohol and drugs and changes to handwriting.
Bio: After a brief career as a chemist, Howard returned to school, worked on a masters program in Forensic Chemistry, where he was first introduced into the interesting field of forensic document examination. After a two-year apprenticeship with Jack Harris followed by ten years working for two public agencies, he reassociated with the firm of Harris & Harris. After Mr. Harris’ retirement, he worked several years individually and eventually associated with Frank Hicks to form the firm of Rile & Hicks, Forensic Document Examiners. Howard has been a member of the ASQDE for 21 years and was recently the Society’s president. He has also served on the American Board of Forensic Document Examiners, and has testified as an FDE for civil and criminal cases in a variety of court proceedings in excess of 1000 times.

Jerry Richards is currently a private examiner of questioned documents and photographs. He graduated with a B. S degree and M. S in Ed degree from Southern Illinois University. For 23 years he was a Special Agent with the FBI. Jerry is an American Board of Forensic Document Examiners (ABFDE) Diplomat and is past member of the Board of Directors. He is a fellow in the Document Section of the American Academy of Forensic Sciences (AAFS), is a past Section Secretary and recipient of the Ordway Hilton award.

Susan Morton began her career in 1971 in the Georgia State Crime Laboratory. After surviving training with Jack McCarthy and Jim Kelly, she testified all over rural Georgia. She attended her first ASQDE meeting in 1972, where she shocked the assembly by being the first female to appear in trousers. When she realized the degree of shock she had caused, she helpfully offered to remove the offending garment. This did not have an ameliorating effect.

After several years, Susan escaped from Georgia and emigrated to California to work for the US Postal Inspection Service Crime Lab under John Shimoda. For twenty-two years, Susan worked a wide variety of cases and testified in far-flung places. She became a Regular Member of the ASQDE in 1986, having completed the testing process and faithfully promised not to threaten to disrobe at meetings ever again. In 1998, with the imminent closure of the western Postal Inspection Service Laboratory, Susan took a job with the San Francisco Police Crime Lab, from which she retired in 2009. Susan now makes her home near Lebanon, Oregon, with three parrots and several chickens. While she tries to think of herself as a country squires, she fears her new neighbors view her more as a city bumpkin. But what do they know? They are sheep.

Abstract: This workshop is intended to help trainees or new journeyman FDEs to understand the dynamics involved in testifying as an expert. The respective roles of the attorney and the expert will be discussed.
Determing Whether an ESDA-Lift Reveals a Tracing or a Phantom

Bio: Katherine Schoenberger earned a Bachelor’s Degree in Physiology and a Master’s Degree in Forensic Science both from Michigan State University. She successfully completed her questioned document training at the Mississippi Crime Laboratory under the tutelage of Frank Hicks. Katherine is currently a private examiner working in the Cleveland, Ohio area. She is a Diplomate of the ABFDE, a member of SAFDE. And, she is a current applicant for membership in the ASQDE.

Abstract: The Electrostatic Detection Apparatus (ESDA) is a useful instrument for revealing indented writing. This paper discusses using an ESDA for the examination of signatures suspected of being tracing models. It focuses on determining if an ESDA-lift image is an indentation of a tracing event or a phantom image the result of interference from the ink or toner on the source paper. Generally having two identical signatures provides evidence that at least one signature is not genuine. This research was conducted as a result of a situation where it was necessary to determine the pervasiveness of fraudulent signatures on a large quantity of securities documents. Therefore, the presence of indentations overlapping a signature could provide valuable information even if a resultant signature was not found.
Bio: Dr Steven Strach has many years of experience working in the field of Forensic Document Examination, both in Australia and in England. He has an academic background in Chemistry with a Bachelor’s degree and a Doctorate from the University of Sheffield in England. He first trained and worked in the field of forensic document examination at the Metropolitan Police Laboratory in London (now part of the UK Forensic Science Service) in the 1970s. After a period pursuing other research interests, in 1990 he resumed working in the field of forensic document examination with Paul Westwood, Director of Forensic Document Services in Canberra, Australia. Steven holds the position of senior examiner. He is a corresponding member of the ASQDE, a member and currently Treasurer of the Australasian Society of Forensic Document Examiners Inc., a member of the Australian and New Zealand Forensic Science Society, and an affiliate member of the UK Forensic Science Society.

Andrea Devlin completed the degree of Bachelor of Applied Science (Forensic Investigation) from the Canberra Institute of Technology in 2007 and is currently studying for a Diploma of Forensic Document Examination at the same institution. Andrea was employed by Forensic Document Services on a part time basis from July 2006 to December 2007 and commenced full time employment and training in the area of handwriting and document examination in January 2008. She is a member and on the committee of the Australian and New Zealand Forensic Science Society (ACT branch) and a provisional member of the Australasian Society of Forensic Document Examiners Inc.

Abstract: There are some attributes of questioned signature examinations that go beyond the conventional two dimensions usually considered (that is the x and y directions of a flat piece of paper bearing a signature). Fluency is an important part of assessing a questioned signature’s genuineness or otherwise which involves the further dimension of time \( t \). Pen pressure variation is another such feature but it is often overlooked by forensic document examiners. The pen pressure can be assessed by viewing embossments on the back of the document and sometimes by impressions left on underlying pages (these being effects in the third spatial dimension, the \( z \) direction). Other potentially important aspects of signature and handwriting examinations involving this further spatial dimension are the trajectories of the pen in between separate strokes of the writing. However, the examiner can only assess such time, pressure and trajectory features of signatures and handwriting qualitatively. There are software programs currently being developed and used which accurately record time, pressure and trajectory information. It is the purpose of this presentation to make examiners aware of the potential of using traditional examination techniques for assessing pen pressure and its variation, and of the potential of some recent software developments that allow quantitative measurements of writing speed, pressure and pen trajectory.

This paper was first presented at the 19th International Symposium on the Forensic Sciences held in Melbourne, Victoria, Australia between 6-9 October 2008.
Tanaka, Tobin, Samiah Ibrahim

ASQDE 2010 AGM: Victoria, BC

Bio: Samiah Ibrahim is the manager for the document section of the Canada Border Services Agency, a member of the ASQDE, a member of the Canadian Society of Forensic Science, and is program chair for next year's Annual General Meeting for the ASQDE. In 2005 she was the site chair for the last ASQDE meeting in Canada which was held in Montreal.

Tobin Tanaka is a document examiner with the Canada Border Services Agency, a member of the ASQDE, AAFS, certified by the ABFDE and a member of the Canadian Society of Forensic Science, and is site chair for next year's AGM for the ASQDE.

Abstract: 2010 Site Chair Tobin Tanaka and Program Chair Samiah Ibrahim will discuss the plans for next year's ASQDE meeting in Victoria, BC.
Tweedy, Janis S.

A Scanning Artifact

Bio: Janis Tweedy has a Bachelor’s degree from Smith College in Northampton, Massachusetts that she received eons ago. She received her QD training at the Minnesota Bureau of Criminal Apprehension Forensic Science Lab and is currently retired from that Laboratory where she was employed for 30 years. She is currently in private practice in Minnesota.

Abstract: When material is scanned and then printed, the resulting printout may contain a pattern that reflects that it was scanned. The reproducibility and identifiability of the pattern is discussed in the presentation.
Vastrick, Tom, Todd Welch
PANEL: Note Taking - What is Expected of Us?

Bio: Tom Vastrick has a Bachelor of Science Degree in Forensic Science from California State University at Sacramento. He received his training with the US Postal Inspection Service Crime Laboratory in Washington, DC and has been a forensic document examiner for over 31 years. He is currently in private practice with offices in Orlando, FL; Memphis, TN; and Kansas City, MO (the last of which he shares his office space with two of the cutest grandchildren in the world). Tom is a Regular Member of ASQDE; a member of the Questioned Document Section of AAFS; and a member of the Southeastern Association of Forensic Document Examiners.

Todd W. Welch is a Forensic Document Examiner with the Michigan State Police. He also works privately and in 1996 he co-founded what is now Riley, Welch, LaPorte & Associates with his partner Tom Riley. Todd completed his 3 year training period with the state police in 1996 and has worked in the Questioned Document Unit at the Lansing Laboratory from 1993 to present. Todd received a B.A. degree in Criminal Justice from Saginaw Valley State College and is a Diplomate of the American Board of Forensic Document Examiners.

Abstract: Taking technical notes has always been a regular part of our examinations. Have recent developments in the justice system resulted in our need to re-think what we are doing? What is required of us by our clients; by the courts; by our standards; by accreditation boards; and by our dedication to our science. We will review how recent developments have impacted the area of taking notes and stimulate discussion from the audience for the purposes of developing a consensus or identifying areas in which serious disagreement exists.
Vastrick, Thomas, Ellen Schuetzner; Kirsten Singer; The Frequency Project Group
Frequency Occurrence in Handwriting

Bio: Tom Vastrick has a Bachelor of Science Degree in Forensic Science from California State University at Sacramento. He received his training with the US Postal Inspection Service Crime Laboratory in Washington, DC and has been a forensic document examiner for over 31 years. He is currently in private practice with offices in Orlando, FL; Memphis, TN; and Kansas City, MO (the last of which he shares his office space with two of the cutest grandchildren in the world). Tom is a Regular Member of ASQDE; a member of the Questioned Document Section of AAFS; and a member of the Southeastern Association of Forensic Document Examiners.

Ellen Mulcrone Schuetzner is in private practice in Chicago. Before private practice she worked for the Chicago Police Department Crime Lab and the IRS National Forensic Laboratory. She is a member of ASTM, a fellow in the American Academy of Forensic Sciences, and a diplomate and past Director of the ABFDE.

Kirsten Singer is newly employed with the Dept of Veterans Affairs, OIG, Office of Investigations forensic document laboratory in Washington, DC. She received training in forensic document examination with the Virginia Division of Forensic Science, has a bachelor’s degree from the University of Virginia, and Master of Forensic Science from George Washington University.

Abstract: Before the recent report by the government on the status of the basis for conclusions in forensic science, some forensic document examiners recognized the need to address accusations concerning the lack of statistical basis from which handwriting conclusions were reached. A group of examiners have pooled their expertise and energies to address this issue head on with a large scale project developing statistically valid frequency probabilities for designated characteristics found in handwriting and hand printing. Assisting in this project are two academia statisticians to ensure that the project's methodology is within the guidelines of standard statistical practices.

This presentation will provide the forensic document examination community with the outline of the project, the goals, the methodology, and FAQs.
Welch, John

Some Observations on the Use of Photocopying to Enhance Faint or Erased Pencil Marking

Bio: John Welch is a chemistry graduate who trained as a document examiner at the forensic laboratory attached to New Scotland Yard in London, England. His early years were in the company of David Ellen and others for whose skills and patience he is forever grateful. That laboratory was amalgamated into a national government forensic service which has now changed into a private company - owned by the government.

Abstract: The use of a photocopier may enhance partially erased pencil marks. Observations are reported supporting and extending the results of earlier workers.
Welch, Todd, Charles R. Bacon, Ph.D., Mary K. Bacon, M.S., Sarah A. Bohn
Fracture Match: A Validation Study to Determine Uniqueness of Paper Tears

Bio: Todd W. Welch is a Forensic Document Examiner with the Michigan State Police. He also works privately and in 1996 he co-founded what is now Riley, Welch, LaPorte & Associates with his partner Tom Riley. Todd completed his 3 year training period with the state police in 1996 and has worked in the Questioned Document Unit at the Lansing Laboratory from 1993 to present. Todd received a B.A. degree in Criminal Justice from Saginaw Valley State College and is a Diplomate of the American Board of Forensic Document Examiners.

Mary K. Bacon is an Adjunct Professor Chemistry at Ferris State University, Big Rapids, Michigan. She holds M.S. and B.Sc. degrees in Microbiology and Medical Technology. She is a member of the Midwestern Association of Forensic Sciences and the American Academy of Forensic Sciences.

Dr. Charles R. Bacon is a Professor of Physics and Chemistry at Ferris State University, Big Rapids, Michigan. He holds Ph.D., M.Sc., and B.Sc. degrees.

Sarah A. Bohn is an Instructor/Chemistry Coordinator at Western Michigan University, Kalamazoo, Michigan. She holds a B.S. degree.

Abstract: Forensic document examiners are frequently asked to analyze and reconstruct evidence from torn or broken items which is referred to as a fracture match. The reconstruction and identification of a rip or tear is an example of a fracture match. Fracture match examinations have important forensic applications in that they may establish a relationship between 1) the suspect and the crime scene, 2) the victim and the crime scene, or 3) the suspect and the victim.

In a prior study, the authors examined the uniqueness of single sheet tears using a four-point tear profile methodology and reported on the uniqueness of paper tears for single sheets. As a continuation of this work, the authors examined longitudinal tears of double sheets of paper subjected to controlled conditions to investigate the uniqueness of tears using the same measurement methodology for characterizing the tear profile. Free energy scaling calculations yielded a tear length versus dimensionality relationship indicating fractional dimensionality. Probability calculations validated the premise that tears from longitudinally torn double sheets of papers were unique.
White, Prof. Peter, Dr. Ahmed Al-Haddad  
**New Objective Methods for the Examination of Questioned Documents - Part 1: Variation in Arabic signatures**

Bio: More than thirty years ago, Professor Peter White PhD CSci FFSSoc C.Chem FRSC, started his forensic career with the Metropolitan Police Forensic Science Laboratory in London. After 15 years, he moved to the University of Strathclyde where he became Director of the Forensic Science Unit. In 2003 he was appointed Professor of Forensic Science at the University of Lincoln. His research interests are wide ranging and he has over 60 publications, 9 patents and is the Editor of the very successful book "Crime Scene to Court," which is about to go into its 3rd Edition.

**Abstract:** Results of a major study of Arabic signatures and subsequent analysis, will be presented. The analyses are based upon seeing the signature as a picture composed of various features (variables) which can be measured or coded according to defined classification schemes.

From a unique library containing multiple collections of signatures from 188 Arabic people, quantifiable features including height, length height/length ratio, number of strokes and dots, direction of ending, legibility, slant, and starting and ending positions provide an invaluable reference library. Frequency of distribution data will be presented and highlight that legibility is a factor which can influence variation in other features and show some other very interesting and unexpected results.

Results from a Mann-Whitney statistical test will illustrate, with four of the features, that significant differences between males and females can be observed. Quantitative data obtained for within and between variation of individuals and the level of natural variation when an individual signs their name on separate occasions will be presented. Finally, it will be shown how a Mann-Whitney statistical test can be used to identify the features that are responsible for the variations observed.

All of these studies were duplicated to provide evidence that the analytical methods used are reproducible and that quantitative evidence can be obtained. The results presented illustrate that the methods developed could be applied to Western signatures.
Yang, Chiew Yung, Lee Tiang Lee, Sock Kim Tan, Bei Sing YAP, Gek Kwee Lee

Simulation of Signatures in the form of Regularly Written, Simple Chinese Characters

Bio: Chiew Yung Yang (CY) has been working in the Document Examination Unit, Forensic Chemistry & Physics Laboratory, Health Sciences Authority in Singapore since 2002. She has a Bachelor of Science (Honours) degree in Chemistry with Additional Studies in Japan from the University of Salford in the UK, and recently completed her Master of Forensic Sciences Administration (Questioned Documents track) course from Oklahoma State University. She completed her two-year on-the-job training in Questioned Documents under Ms Gek Kwee Lee, corresponding member of the ASQDE, and Mr Bei Sing Yap.

Abstract: Are simple signatures written in the form of regular Chinese characters more easily simulated than those written in a cursive manner or incorporating some form of design? Would it be possible for simulations of such signatures to be accepted as genuine? Among the simulated signatures collected from one hundred and eight participants and analysed in this study, the findings indicate that none of the imitations could have been accepted as genuine in view of the poor fluency, differences in line quality and features falling outside the range of natural variation of the writer. This shows that even for a simple signature comprising few strokes, it would still be difficult to simulate it accurately and fluently to such an extent that it would escape detection by a forensic document examiner’s trained eye. However, in view of the varying range of natural variation for different writers, it would be prudent to exercise greater care in the examination of such simple signatures.