Aginsky, Ph.D., Valery

**Examination of Paper and Toner in Page Insertion/Substitution Cases using TLC, GC-MS and FT-IR Microspectroscopy**

**Bio:** Valery Aginsky is a forensic chemist working in the field of forensic document examination for 30 years. He received his Ph.D. in Analytical Chemistry in 1980 from the Military Academy of Chemical Defense in Moscow, Russia.

His training was with the Forensic Science Center of the Ministry of the Interior of Russia. He is currently employed with Aginsky Forensic Document Dating Laboratory located in East Lansing, Michigan.

Dr. Aginsky is the author of more than 20 peer-reviewed articles on ink analysis and document dating, including chapters in three books and two encyclopedias.

**Abstract:** The comparison of paper and toner of each sheet (or certain pertinent pages) of a multi-page document produced with toner-based electrophotographic technology may help (A) to determine if there has been page insertions or page substitutions or (B) to check a hypothesis that multiple documents, which were supposed to come from different sources, have a common source.

This paper shows that a combination of three analytical methods, thin-layer chromatography (TLC), gas chromatography-mass spectrometry (GC-MS), and Fourier transform infrared (FT-IR) microspectroscopy, provides high discriminating power with regard to both paper and toners that cannot be distinguished by non-destructive (optical) techniques. These three analytical methods may allow the examiner to achieve a high level of certainty when evaluating which of the two competing hypotheses is more probable:

- (Case A) the prosecution’s hypothesis, Hp, that certain pages in the document have been substituted or the defense’s hypothesis, Hd, that no page substitution has occurred since the initial production of the document;

- (Case B) the prosecution’s hypothesis, Hp, that multiple documents, which were supposed to come from different sources, have a common source or the defense’s hypothesis, Hd, that all the documents came from their respective origins as indicated on the documents.
Aloyoni, Mohammed, Jubran Gushaish

The Benefit of Using Multiple Instruments in Documents Examination

**Bio:** Mohammed Aloyoni is a senior examiner in the central Saudi Arabian government lab of QD. He has 20 years of experience in the QD field, holds a Chemistry Degree, and is a Corresponding Member of the ASQDE member.

Jubran Gushaish is a Q.D.E in the central Saudi Arabian government lab of QD. He has 16 years experience in the QD field, and holds a Chemistry Degree.

**Abstract:** Throughout the years, the QD Laboratories has relied on trustworthy instruments to examine their questioned documents, mainly instruments made by companies like Foster & Freeman. In recent years other companies have entered the field of documents examination like a company named Projectina, which we have some of their products in our QD Lab, beside Foster & Freeman's. Through this paper I will show the results of examining the same documents under the VSC 6000 and the Projectina Docucenter Expert. (The futures of both instruments could be found in their site.) I created similar cases to what we have received in our QD lab (Central laboratory of Saudi Arabia in Riyadh). The 1st case is a chemically erased check, and the 2nd case is an altered check with different writing instrument (pen) but with a similar color ink.
Annunziata Nicolaides, Kathleen

Using Acceleration/Deceleration Plots in the Forensic Analysis of Electronically Captured Signatures

Bio: Kathleen Annunziata Nicolaides works at Affiliated Forensic Laboratory in Phoenix, Arizona. She trained with William Flynn from 1998 to 2001, and was first certified by ABFDE in 2005. Kathy holds a BA with honors in Literature and the English Language from the State University of New York at Binghamton (now Binghamton University). She is a member of SWAFDE, ASQDE and ASTM and is presently serving on the board of the ABFDE.

Abstract: A research study is underway to determine if analysis and comparison of acceleration/deceleration plots of signature data captured by electronic signature tablets would provide meaningful evidence in an examination of electronically captured signatures. This research focuses on data collected by signature tablets produced by Topaz Systems, Inc., one of the largest suppliers of digital capture devices. William Flynn, in his article, “Conducting a Forensic Examination of Electronically Captured Signatures,” (which will appear in the upcoming edition of the ASQDE Journal), noted the visual differences in the plots of genuine and simulated signatures. Further research is now underway to determine how useful plotting the acceleration/deceleration of electronic signatures would be in a forensic examination and what reliable conclusions could be made from their analysis. The study hypotheses are that acceleration plots will be consistent for one writer; that simulated, traced, and spurious (or simple forgery) signature plots will be visually different from those of genuine signatures; that there will be a noticeable difference between signature plots of different writers; and that the comparison of acceleration plots will be a useful tool for signature authentication.
Berthold, Nancy
What's Happening in Washington?

Bio: Nancy Berthold holds a Masters of Forensic Science degree from George Washington University; a Certificate in Counterintelligence from the Institute of World Politics; and, has had her executive qualifications approved by the OPM Qualifications Review Board. She has been Laboratory Director at the accredited Treasury Inspector General for Tax Administration lab for the last six years, after spending over 25 years working in document analysis for ICE (previously INS), USSS, Baltimore County PD, and the FBI. Mrs. Berthold holds ABFDE certificate #279 and has been published on eight occasions in technical journals.

Abstract: Since April 24, 2009, the Subcommittee on Forensic Science of the National Science and Technology Council has been meeting monthly at the White House conference center. The subcommittee was formed as an Administration response to the National Academy of Sciences (NAS) report, which found that most disciplines in forensic science, including questioned document and handwriting examination, were lacking scientific rigor. My paper will address what has been accomplished by this group and what the future might hold.
Bird, Carolyne, Bryan Found, Doug Rogers

Investigating the Relationship Between Forensic Handwriting Experts: Process Opinions and Success of Disguise

Bio: Carolyne has an Honours degree in Chemistry from Flinders University of South Australia, and a Doctor of Philosophy in Human Bioscience from La Trobe University, Melbourne, for which the research covered in this paper was undertaken. She has been employed by Forensic Science South Australia since February 2002, working in the Document Examination Group, and is a member of the ASQDE (corresponding), the Australasian Society of Forensic Document Examiners, the International Graphonomics Society, the European Network of Forensic Handwriting Experts (affiliate) and the European Document Examiners Working Group (affiliate).

Abstract: Forensic handwriting experts (FHEs) opinions on the process of production of questioned disguised and naturally written handwritten text may be affected by the skill of the writer for disguising their handwriting. The success of disguise, rated by two FHEs, and its relationship to a separate group of FHEs’ opinions on the process of production of questioned handwriting samples is explored in this paper. Results show that the handwriting samples deemed successfully disguised have the highest correct rate and lowest inconclusive rate, while the unsuccessfully disguised samples have the lowest correct rate and the highest inconclusive rate. These differences are statistically significant for samples examined both individually and in pairs. The reported relationship can provide a method for minimising erroneous authorship opinions in cases of suspected disguised writing. If the disguise is unsuccessful, the writing will contain many of the features of the writer’s normal handwriting. It may not be identified as having been written using a disguise process; however observations made would be expected to lead to a correct authorship opinion. Conversely, if the disguise is successful there will often be evidence of the unnatural writing process which should flag the FHE to proceed to an authorship opinion with caution.
Bird, Carolyne, Bryan Found, Doug Rogers

Predictors of Disguised and Simulated Handwritten Text

Bio: Carolyne has an Honours degree in Chemistry from Flinders University of South Australia, and a Doctor of Philosophy in Human Bioscience from La Trobe University, Melbourne, for which the research covered in this paper was undertaken. She has been employed by Forensic Science South Australia since February 2002, working in the Document Examination Group, and is a member of the ASQDE (corresponding), the Australasian Society of Forensic Document Examiners, the International Graphonomics Society, the European Network of Forensic Handwriting Experts (affiliate) and the European Document Examiners Working Group (affiliate).

Abstract: Assessing the authorship of writings created using disguise and simulation behaviour has been reported to be problematic for forensic handwriting experts (FHEs). When examining questioned disguised and simulated samples and providing an opinion on process, a propensity has been found for calling simulated samples disguised. These results suggest that FHEs’ expectations of the predictor features of these unnatural writing types are not accurate. This paper investigates the relationship between FHEs’ responses on the process of production of questioned disguised and simulated handwriting samples and their verbal statements relating to the features they observed as indicative of the particular unnatural writing behaviour. A clear relationship between these will enable elucidation of predictor features of disguised versus simulated writings. Results suggest that the identification of altered slope in a questioned sample when compared to a naturally written sample may be a predictor of disguise behaviour. Features of construction and the presence of tremor may be used as predictors of simulation behaviour in questioned samples. However, the diversity in disguise strategies employed and the discordant responses of FHEs impose limitations on the analysis undertaken. A predictor model could be created based on the results of a concordant group of experts and would require testing on a validation set.
Burkes, Ted

SWGDOC Update

**Bio:** Ted Burkes was raised and educated in Mississippi, earning a B.S. from the University of Southern Mississippi in 1978. He was initially trained and worked at the Mississippi Crime Lab from 1991 to 1998 and moved to the FBI Laboratory in 1998, where he currently works. Ted earned his Diplomate status with the ABFDE in 1997 and is a member of the Southeastern Association of Forensic Document Examiners (SAFDE), where he currently serves as the Secretary, and the American Academy of Forensic Sciences (AAFS), where he served as a Questioned Documents Section Program Co-Chair for the 2012 annual meeting in Atlanta.

**Abstract:** The presenter will discuss with the audience the changes to SWGDOC, to include the drafting/publication of standard procedures for forensic document examiners, since departing from participation in the ASTM process.
Caligiuri, Ph.D., Michael, Linton Mohammed, Ph.D.

Kinematic Features of Signature Writing in Persons with Alzheimer's Disease

**Bio:** Professor Michael Caligiuri is the Director of the Human Research Protection Program at the University of California, San Diego. Professor Caligiuri has conducted research for many years in the area of the effects of drugs and disease on handwriting. He has published over seventy papers in peer-reviewed journals.

Linton Mohammed of Forensic Science Consultants, Inc. is a Forensic Document Examiner in private practice in the Northern California area. He has conducted research in the area of signature examination and has published several papers in peer-reviewed journals. He is the current president of ASQDE. Dr. Mohammed and Professor Caligiuri are the authors of "The Neuroscience of Handwriting: Applications for Forensic Document Examination."

**Abstract:** The goals of this workshop are to increase the understanding of how dementing illnesses such as Alzheimer’s disease (AD) effect signature writing and to provide forensic document examiners (FDE) with experience in judging the authenticity of signatures written by persons with AD. Didactic segments of the workshop will present findings from published literature and ongoing empirical research on signature formation in writers with dementia and features of handwriting that distinguish dementia from healthy aging. Recent findings on within-writer variability in signature characteristics in samples from writers with dementia will be contrasted with findings from healthy age comparable writers. The workshop will include a hands-on exercise involving judgments of authenticity among questioned and genuine signatures written by individuals with recent and advanced Alzheimer’s disease.

**Outline**
1. Fundamentals of Handwriting in Dementia (30 minutes)
2. Current Research on Cognitive and Motor Effects on Signature Kinematics (30 minutes)
3. Hands-on Exercise: FDE judgment of signature authenticity in dementia (60 minutes)
4. Break (15 minutes)
5. Debrief and statistical modeling of FDE judgment confidence (30 minutes)
6. Wrap-up and questions (15 minutes)

**Recommended Reading:**
Davis, Heather  
Unique Challenges in Non-Check Related Questioned Documents Casework at the U.S. Treasury Department's Financial Management Service

Bio: Heather Davis has been an employee of the U.S. Treasury Department's Financial Management Service for over ten years in the field of document examination. She is the lead document examiner for the forensic staff. She earned her Master of Forensic Science from George Washington University in 2001.

Abstract: The forensic document examiners working for the U.S. Treasury Department's Financial Management Service (FMS) are often faced with unusual non-Treasury check related cases that involve new attempts to defraud the United States government. For example, in addition to typical cases involving stolen, altered, or counterfeit U.S. Treasury checks, during the past several years, scams involving other phony documents such as "Treasury" indemnity bonds, money orders, sight drafts, and counterfeit investment instruments have been presented to FMS forensic staff. This paper outlines the unique challenges that documents such as these present to examiners.
Devlin, Andrea, Dr. Steven J. Strach
Testing the Reliability of a Method for Determining the Sequence of Writings on the Front and Back of One Sheet of Paper

Bio: Andrea Devlin holds a degree of Bachelor of Applied Science (Forensic Investigation) from the Canberra Institute of Technology, completed in 2007. She has been employed by Forensic Document Services Australia since July 2006 and completed her training under the guidance of Paul Westwood, Steven Strach and Michelle Novotny, all corresponding members of the ASQDE. Andrea is a member of the Australasian Society of Forensic Document Examiners Inc., the Australian and New Zealand Forensic Science Society and the International Association of Financial Crimes Investigators.

Abstract: It is a well known phenomenon that when a line is written on the front of a sheet of paper an embossment is generally created on the back of the sheet. If the sheet is turned over and a second line is written over the embossment the paper is usually flattened at the point of intersection between the two lines. An embossment is also usually created through the indentation of the first written line on the front of the sheet. Microscope examination of both sides of the sheet at the point of intersection between the two lines can lead to a determination of the likely sequence of writings. Numerous factors influence the degree of indentation and embossment of the intersecting lines and must be considered when using this technique. This effect has been the subject of research in the past by examiners in this laboratory. This study further tests the reliability of this technique by analysing the results of larger scale blind testing.
Durina, Marie E.
The Document as a Crime Scene

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

Marie graduated magna cum laude in 1989 with a Bachelor’s Degree in Business Administration from Baruch (pronounced Ba-Ruke) College - City University of New York, and also possesses a 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 diplomate of the ABFDE, a member of the ASQDE, a member of SWGDOC, a member of the MAFS, and a provisional member of the AAFS-Questioned Documents Section.

Abstract: Crime scene reconstruction is the process of determining or eliminating the events that occurred at a crime scene by analysis of the scene's appearance, the locations and positions of the physical evidence, and the forensic laboratory examination of that evidence. The scientific methodology applied to processing crime scenes can also be applied to forensic document examination. This poster provides an overview of techniques that can be used.

Approaching each questioned document in an organized, methodical manner, and recording each step taken during an examination shows the scientific nature of the reconstruction of the events, aids in the investigation of the case, and assists in the organization of evidence, note taking, and the visual presentation of facts to a jury.
Eggleston, Charles

**Objective Measurement of Signature Complexity as a Validated Tool for Casework**

**Bio**: Charles L. Eggleston, MFS, is a forensic document examiner in private practice in Nebraska, USA. He holds Diplomate status from the American Board of Forensic Document Examiners (ABFDE) and the American Board of Criminalistics (ABC). He teaches graduate level courses in forensic document examination at Oklahoma State University Center for Health Sciences, Tulsa, and Nebraska Wesleyan University, Lincoln.

**Abstract**: Complexity is a property of handwriting important for purposes of forensic analysis. Little has been published about it in the literature. Complexity is subjectively assessed by most FDEs without universal agreement. Thus, two FDEs may not judge the complexity of the same signature, for example, in the same manner or to the same degree. A solo FDE may not judge complexity consistently on repeated occasions.

There exists a statistically-derived classification model for signature complexity using objective measures. This model has been independently validated. The model’s predictions correlate well with FDE perceptions of complexity. Regrettably, it appears that most FDEs either do not know about this complexity classification model or do not utilize it as a tool in their examinations.

This paper aims to: characterize the property of complexity in handwriting and its significance in forensic handwriting analysis; explain the classification model for signature complexity, including its development and validation; promote adoption of objective measures for determining signature complexity, rather than subjective assessments; and provide a job aid for readily deciding the complexity of a signature with minimal calculation.
Fauser, Rolf, Tanja Rottes
Workshop - The Individuality of Inkjet Printing

Bio: Rolf Fauser works as a police officer for the district police laboratory of the "Regierungspräsidium Tübingen" and is the assistant manager of the Forensic Science Department. He studied print and media as a major at the University of Stuttgart and after successfully completing the document expert training course at the Bundeskriminalamt in 1996, he is working as a forensic document examiner. In 1999 he additionally started teaching in the field of forensic technology at the Academy and University of Applied Science in Baden-Württemberg. Since 2005 he focuses on researching print characteristics of inkjet and laser machines with the purpose of their classification and identification.

From 1995 to 1999 Ms. Rottes studied Chemistry at the Fachhochschule Niederrhein in Krefeld. After her diploma she started a 3 year training as a document examiner at the Landeskriminalamt NRW. She graduated from the Bundeskriminalamt in Wiesbaden and is now working in the field of document examination with specialisation in ink analysis, typewriters and printers at the LKA NRW.

Abstract: In 2005, a research project was started with the aim to find an advanced analysis technique that would not be dependent on chemical ink analysis and that would go further in the discrimination of inkjet printed documents. A brief overview of the findings of this long-term study will be presented during the ASQDE workshop and a hands-on training on how to apply the currently 30 different criteria (e.g. measurement of ink dot sizes, classifying dot shapes, differentiation of pigmented and dye based inks, determination of different letter formations) which are used to classify inkjet printed documents will be offered. Furthermore the improvements in regards to the identification of printers using individual characteristics will be demonstrated and the practical application of the new EDEWG online-database will be shown. The workshop participants should bring a computer to be able to work on the practical problems.
Fazio, Kristen, Sophia Auer, Kimberly Nugent, Rosalind Spencer, Tobin Tanaka

The Effects of Constraint on a Signature's Static and Dynamic Features

Bio: Kristen Fazio is a 2011 graduate of the University of Ontario Institute of Technology with a Bachelor of Science Honours in Forensic Science and minors in Biology and Chemistry. She is currently employed with State Farm Insurance as a Complex Accident Benefits Adjuster.

Sophia Auer has been with the Canada Border Services Agency since 2008, and specifically with the Math and Data Exploration Section at CBSA, since 2009. She received her Masters of Science in Statistics and Probability from Carleton University in 2011, and her Bachelors of Science in Biology from Carleton University in 2008. She has valued experience in statistical consulting, health statistics, risk assessment, sampling theory and applications, experimental design, and data mining.

Kimberly Nugent is a Forensic Science Senior Lecturer and Coordinator of the undergraduate honours thesis course at the University of Ontario Institute of Technology. Ms. Nugent is actively involved in forensic science undergraduate education and curriculum development. She has developed several interactive online teaching modules as well as integrated tablet technology into the student’s field and laboratory practice.

Rosalind Spencer trained at Scotland Yard, UK and is a Senior Forensic Document Examiner at the Canada Border Services Agency, Canada. She holds a Bachelor of Science with Honours in Biological Sciences, and is certified by and is a Director of, the American Board of Forensic Document Examiners. She is a member of the Canadian Society of Forensic Science, an associate member of the American Academy of Forensic Sciences and a provisional member of the American Society of Questioned Document Examiners.

Tobin Tanaka is a forensic document examiner at the Canada Border Services Agency. He is a regular member of the American Society of Questioned Document Examiners, the questioned document section of the American Academy of Forensic Science, the document section of the Canadian Society of Forensic Science, the Forensic Science Society and is certified by the American Board of Forensic Document Examiners.

Abstract: Forensic document examiners are tasked daily with determining authenticity of signatures, many of which are on a line, within a box or within text, resulting in variations to an individual’s natural signature. Both dynamic and static characteristics of such constraint on an individual’s signature were measured with the aid of a digitizing tablet and inking pen. Participants aged from 16 to 83 provided signatures produced under five different constraints which mimicked Government of Canada forms, including: a 4.7cm line, a 6 cm x 1.2cm box, a 4.8cm x 0.96cm box, a 6.4cm length and 0.4cm height space within text, the Adult General Passport Application box produced by Passport Canada and a blank control. When constraint is introduced, pen speed, pen jerk, overall length, ascenders and descenders all vary significantly from that of the unconstrained signature. Pen pressure was the only feature to show no significant difference in the presence of constraint. In addition, anomalies such as extra artefacts, variation in complexity, hesitations, signs of anxiety and effects of health issues were observed. This study demonstrates the impact that constraint has on a signature and indicates the need to carefully consider and evaluate these variations in any examination process.

ASQDE 2012 – Summary of Abstracts
Burge, Daniel, Nino Gordeladze, Kristin Smith, Ryan Boatright and James Reilly

Imaging Methods and Quantitative Measurements for the Characterization of Digitally Printed Materials

**Bio:** Daniel M. Burge, Senior Research Scientist, has been a full-time member of the Image Permanence Institute (IPI) staff for the last 21 years. He received his B.S. degree in Imaging and Photographic Technology from the Rochester Institute of Technology in 1991. Currently he is investigating digital print stability and developing recommendations for the use, storage and display of these materials in cultural heritage institutions. Daniel’s colleague and co-author, Nino Gordeladze, will present the paper in his place.

**Abstract:** Over the last four years, researchers at the Image Permanence Institute at the Rochester Institute of Technology have been developing an imaging strategy and a set of quantitative measurements that can be used to characterize modern digital print materials (both images and documents). While the goal of the project has been ultimately to enable collection care personnel in cultural heritage institution to identify their collection materials, the approaches should also be helpful to the field of forensic document examination. The imaging methods include varying the angle of lighting as well as the level of magnification. Structures such as surface gloss and texture as well as dot morphology and pattern can be assessed and compared to known print types. Additional, unique traits such as colorant bronzing, differential gloss, anti-block layers, etc. can also be used to narrow down the identification of particular print examples. This paper will describe the main approaches used for both imaging and quantitative measurement of print samples along with descriptions of online support tools.
Grafl, Dr. Christian, Mag. Martin Meissnitzer
Multidisciplinary Cooperation in the Examination of Foreign Handwritings

Bio: Christian Grafl studied law at the University of Vienna, Austria. 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. Since 2011 he holds the position of a University 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, and ASQDE Corresponding member.

Martin Meissnitzer studied law and is still enrolled in Arabic Studies at the University of Vienna, Austria. Currently, he is project assistant at the Institute of Criminal Law and Criminology at the University of Vienna.

Abstract: Globalization brings about a lot of advantages as well as difficulties to the examination of questioned documents. This paper seeks to address the issue of analyzing and evaluating foreign handwritings. If the expert is not familiar with the language and/or the kind of writing he/she is not able to assess the value of congruent or divergent characteristics correctly. But in many cases there is no expert easily available who is familiar with the foreign script. Thus, the expert is asked to deliver at least preliminary conclusions. The paper investigates if the cooperation of a handwriting expert unfamiliar with the script and a layman in handwriting examination who is familiar with the script can provide a more solid and reliable conclusion.
Guscott, Janette

**Spencerian Art**

**Bio:** Janette has a Bachelor of Science from Metropolitan State College and works as a Questioned Document Examiner for the Aurora Police Department Crime Laboratory, where she has been an examiner for 15 years.

Janette received her four-year training under Senior Criminalist Beverly Mazur and is a member of the Documents section of the Midwestern Association of Forensic Scientists.

**Abstract:** Platt Rogers Spencer developed the first truly American writing style in approximately 1848. Spencer believed that nothing is truly straight and that writing should have curves, hence incorporating this idea into his writing. He wanted writing to be more individualistic and to flow and be expressive. His copy books showed hours of practicing curves and flourishes. Several students of the Spencerian style of writing took this practice of curves and flourishes and created beautiful pieces of art. Many of the pieces presented incorporate Spencerian writing as part of a document, and some are just the art work itself.
Hayes, James L.
The Value of Certifications and Memberships Relative to the Hiring of Forensic Document Examiners

Bio: With a career spanning over 35 years in the field of criminal justice, Mr. Hayes is a well-known and highly regarded Forensic Document Examiner. Mr. Hayes has his private practice in the Chicago area, has served as a partner in the firm since 1982, and is affiliated with the firm of Riley, Welch and Laporte. Highlights of his career include serving as a Document Analyst for the U.S. Postal Inspection Service, a Chicago Police officer for over ten years, and a consultant with the Chicago Board of Elections since 1988. Mr. Hayes is a diplomate and former director of the American Board of Forensic Document Examiners, and an ASQDE member. Mr. Hayes holds a Bachelors degree in Criminal Justice from St. Xavier University in Chicago.

Abstract: The purpose of this research was to determine the hiring practices of Forensic Document Examiners and whether or not certifications and/or memberships in professional organizations are the two defining variables for a Forensic Document Examiner to be hired by the legal profession. Important results of the study demonstrate that the legal profession does not understand the difference between graphologists and Forensic Document Examiners. The legal profession is divided on who should certify Forensic Document Examiners. In addition, attorneys do not understand the process of certification for a Forensic Document Examiner. Key conclusions from the spring 2012 research were:

A. Certifications affected the decision to hire Forensic Document Examiner

B. The legal profession did not understand the certification process

C. For those attorneys that completed the survey and have utilized the services of a Forensic Document Examiner, it is noted that they hire based on a) certifications, b) good verbal communications skills, and c) word of mouth referrals

The sample population used for the study were large law firms in the Chicago and St. Louis metropolitan areas. The average age of the responding attorneys was 58 years.
Haywood, Charles

Ball Point Pen Striae Revisited: Presence and Significance

Bio: Charles L. Haywood is a private forensic document examiner (FDE) in the South Florida area, which is principally the Miami/Fort Lauderdale Metropolitan Area. His prior forensic document work includes fifteen years in the Federal Bureau of Investigation (FBI) Laboratory where he received his initial training. Charles has a Bachelor of Science Degree from Georgia State University in Atlanta, Georgia and a Master of Forensic Science Degree from The George Washington University in Washington, D.C. Charles is a Diplomate of the American Board of Forensic Document Examiners (ABFDE); a Provisional Member of American Society of Questioned Document Examiners (ASQDE); Associate Member of American Academy of Forensic Sciences (AAFS); and is a Member of ASTM, International Association for Identification (IAI) and Florida Division of IAI.

Abstract: Determining the type of writing instrument used to prepare spurious or anonymous documents is a routine part of the examination of handwritten documents or documents bearing handwritten entries. Of the various writing instruments in common use today, the ballpoint pen has been in use the longest. For this reason, it is worthwhile to continue to give attention to this instrument type with a focus on association, identifying or eliminations it as the source instrument. Although other class characteristics are associated with the ballpoint pen, the striae in the pen strokes is the most distinguishable. Past research focused on individualizing the writing instrument using unique observable pattern in the striations. However, the studies do not offer a consistent standard for association, identification or elimination based on striae comparisons. This paper is a controlled study of a random selection of ball point pens using multiple samples taken with each of these instruments. The samples were obtained on the same paper type while maintaining the writing instrument in the same position relative to the attached pen pocket clip. The objective was to determine whether observed striae is primarily a class characteristic of ballpoint pens; or if any of the ballpoint pens produced a sufficiently unique striation pattern to identify the source to the extent that observed striae pattern was identical, repetitive and reproducible. If those criteria are met, then a standard protocol for examination and comparisons could be established.
Holt, Melanie, Chris Lennard, Alison Sears, Dean Swift, Michael Bell

Sequencing ESDA Examinations with the Collection of Trace DNA from Questioned Documents

Bio: Melanie Holt was awarded a Bachelor of Applied Science (Forensic Investigation) from the Canberra Institute of Technology in 2008 and is currently employed by NSW Police Force as trainee document examiner. Melanie is in the process of completing an Honours Degree and a Diploma in Forensic Document Examination. She also holds a Bachelor of Commerce (Marketing and Legal Studies). Melanie is a member of the Australian New Zealand Forensic Science Society (ANZFSS), the American Society of Questioned Document Examiners (ASQDE) and an associate member of the Australian Society of Forensic Document Examiners (ASFDE).

Abstract: Police organisations frequently receive questioned documents that require examination for both the detection of latent impressions by ESDA (Electrostatic Detection Apparatus) and trace DNA. Most recently these cases have involved white powder incidents, extortion notes and threatening letters.

Currently it is procedurally unclear as to which examination should be undertaken first. To date, there is little research available as to whether the ESDA process harms the quantity and/or quality of DNA recoverable from a document, or if the tape lifting process affects the quality of the ESDA results. As a consequence, opinion has been extremely divided on the matter.

To determine the best sequence of examination for document exhibits through the various specialist departments, research was undertaken to address the above issues. Here experimentation was undertaken with the specific aims of determining the effect of the ESDA process on the recoverability of trace DNA from a document by tape lifting, and conversely to determine the effects of the tape lifting process on the quality of the ESDA result. Once collated, these results will be used to devise and validate examination procedures for such cases.
Kelly, Mary

Contrast And Comparison: Evaluating Features of Simulated and Modified Genuine Signatures

Bio: Mary Kelly has a Bachelor of Science degree and a Law Degree and had the privilege of being trained in forensic document examination by Dr. Philip Bouffard. Mary worked in Government Laboratories for twenty-eight years and is currently in private practice in Cleveland, Ohio. She is certified by the ABFDE and is a past President and previously served as a Director of the ASQDE.

Abstract: A small study of twenty writers was conducted to evaluate and compare the writing features found in simulated signatures and modified genuine signatures (AKA auto forgeries). The purpose of the research was to test the theory that each group bears telltale characteristics that allows an Examiner to distinguish one from the other.

Each writer provided ten dictated signatures and one before-the-fact sample. Then each writer was asked to prepare a signature that they would later deny. Next the writer was given a naturally prepared signature from a different writer in the group and was asked to simulate the writing.

The results of a comparison between the genuine and simulated signatures were, for the most part, in keeping with the premise that there are telltale characteristics commonly seen in simulations. The majority of the simulated signatures bore a pictorial resemblance to the genuine signatures, while exhibiting such features as hesitation, patching and awkward writing movements.

The characteristics of the modified genuine signatures were more diverse. While almost all were pictorially different from the genuine signatures, some had changed capital letters; some changed the slant or size of the writing, while others completely distorted the signature to the point it became illegible.
LaPorte, Gerald

A Validated Approach to Ink Dating Using Solvent Analysis

**Bio:** Mr. LaPorte is the Acting Associate Director and Forensic Policy Program Manager at the National Institute of Justice (NIJ) in the Office of Investigative and Forensic Sciences and is in private practice with Riley Welch LaPorte and Associates Forensic Laboratories. Mr. LaPorte trained with the United States Secret Service and specializes in the chemical examination of inks and paper. Mr. LaPorte is a member of the American Academy of Forensic Sciences, Mid-Atlantic Association of Forensic Scientist, American Society of Questioned Document Examiners, ASTM International, and serves as the co-chair of the Standards Practices and Protocols Inter-Agency Working Group within the Executive Office of the President. Mr. LaPorte has over 15 peer reviewed scientific publications and has presented over 75 training seminars, lectures, and workshops in 13 different countries.

**Abstract:** In 2009, the Committee on Identifying the Needs of the Forensic Science Community in a report issued by the National Research Council of the National Academies concluded that “[a]nalysis of inks and paper, being based on well-understood chemistry, presumably rests on a firmer scientific foundation.” With stringent demands from the forensic community to develop and validate scientifically reliable laboratory techniques, implementing methods for ink dating using a dynamic approach has been a formidable task. Using gas chromatography/mass spectrometry (GC/MS) for the volatile analysis of 2-phenoxyethanol (PE), a volatile organic compound found in most ballpoint writing inks, has been studied in the literature for nearly two decades. One well known change is that the amount of PE diminishes as the ink continues to age up to 24 months after the ink has been placed on the document. For the purpose of ink dating, GC/MS is used to measure differences in the concentration of PE when samples of the questioned ink are heated and unheated. Thus, a greater concentration of PE will evaporate from fresh ink compared to older ink. This study will present the results from the analysis of numerous inks of known ages.
Luber, Jeffrey, Rachel Mugford

**Signature Changes Over Time: A Study of Six Writers Over a 20-Year Time Span**

**Bio:** Jeffrey Luber is an ABFDE Board Certified Forensic Document examiner working at the Suffolk County Crime Laboratory in Long Island, New York since 1984. Mr. Luber started his career in 1980 under the training of Steve McKasson at the Illinois State Police Forensic Lab system in Joliet, Illinois and received Board Certification in 1987. Mr. Luber is a member of the American Society Questioned Document Examiners, the American Academy of Forensic Sciences, and the Northeastern Association of Forensic Scientists.

Rachel Mugford is a student intern from Alvernia University.

**Abstract:** This poster presentation will visually document changes (or lack of changes) of signatures from 6 randomly selected writers whose signatures were written in a Laboratory "sign-in log book" over the course of approximately 20 years. Four signatures randomly chosen, via an Excel Random Number Generator (1 per quarter year) from each writer, will be examined for consistent handwriting characteristics. Handwriting changes due to maturation will be explored. Handwriting maturation is a consideration in the initial evaluation of a handwriting examination.

The consistencies and inconsistencies of the handwriting patterns will be visually displayed for ease of viewing and comparison.
Merlino, Mara, Tierra Freeman, Veronica Dahir, Victoria Springer, Derek Hammond, Adrian Dyer, Bryan Found, & Jan Seaman-Kelly

Validity, Reliability and Accuracy in Forensic Signature Identification: A Research Update and Demonstration

Bio: Mara L. Merlino, Ph.D., is an Assistant Professor of Psychology and Sociology at Kentucky State University. Prior to her appointment at Kentucky State, Merlino was an instructor and post-doctoral fellow at the University of Nevada, Reno, where she earned both her doctoral and master’s degrees in the Interdisciplinary Ph.D. Program for Social Psychology. She continues to serve on the graduate faculties of the University of Nevada, Reno’s Judicial Studies Program, the only academic degree granting program in the U.S. offering the doctoral and master’s degrees to the nation’s judiciary, and the Interdisciplinary Ph.D. Program in Social Psychology.

Dr. Merlino’s research interests include judicial decision-making, jury decision-making, judge and attorney education, the use of scientific evidence in court, gender and the law, domestic violence and the law, and the influence of extra-legal factors in the presentation of evidence. She has designed, directed, and supervised a number of large-scale research projects, including a multi-modal national study of science in the law school curriculum sponsored by the National Science Foundation, and a national multimodal survey of state trial court judges sponsored by the State Justice Institute, the Federal Judicial Center, The National Judicial College, the National Council of Juvenile and Family Court Judges, the Grant Sawyer Center for Justice Studies, and the Judicial Studies Program at the University of Nevada, Reno.

Abstract: Questions have been raised both in court and in a number of scholarly articles and treatises concerning the relatively small body of research supporting claims that forensic document examiners (FDEs) outperform jury eligible lay people in successfully identifying the source of questioned handwriting samples. Critics of forensic document examination also point out that the conclusions of FDEs may be biased due to the lack of blind review of examination results. Most of the extant studies have been criticized for their relatively small numbers of participants, lack of experimental control, or lack of structural verisimilitude.

We will discuss some preliminary findings of this multi-modal investigation of the existence and nature of expertise related to forensic document examination, and the evaluation and interpretation of the salient features of signature specimens. Forensic document examiners have participated in a preliminary survey assessing the nature and extent of their education, training, and experience, and other credentials in the field, and their views about the present methods of FDE education and training. Examples of the information provided by the eye-tracking procedure will be presented to demonstrate the data currently being gathered in the second phase of the study. This combination of quantitative and qualitative information will allow us to quantitatively analyze the visual and cognitive steps that FDEs and laypeople employ to render decisions, and to obtain an understanding of the relationship between the kind and extent of evidential information contained in signature specimens and the accuracy of examiner and layperson decision making about the source of the questioned signatures.
Olson, Larry

Toward a Protocol for Reassembling Crosscut Shredded Documents

**Bio:** Larry Olson is a Forensic Document Examiner & Ink Chemist at the Internal Revenue Service National Forensic Laboratory in Chicago, Illinois. He holds degrees from the US Naval Academy and George Washington University. Larry had the pleasure to train under ABFDE Diplomates Bob Lockard, Gideon Epstein, Bill McCarthy, and James Davidson, and he is a Diplomate himself. He is a Regular Member of this Society, as well as of other organizations, including the Midwestern Association of Forensic Scientists (of which he is a past president).

**Abstract:** This presentation outlines a procedure used by the presenter while attempting to reassemble a bag of shredded documents.

The bag contained "chad" (shredded pieces) of some twenty or more documents shredded by a crosscut shredder. The documents were of a variety of paper colors and types, some ruled, some unruled, some bearing handwriting, and some bearing machine printing only. Several of the documents were Post-It notes, and some of the notes had apparently been stuck to each other before shredding, while others were attached to other documents.

Although the documents’ reassembly was begun on a trial-and-error basis, a number of things were learned along the way that facilitated the process, including:

1) How to estimate how many documents are present,
2) How to associate the chad by document by means of their edges,
3) How to prepare for the reassembly by sorting the chad by size and shape, and most importantly,
4) How to determine the manner in which each document was shredded (that is, the precise pattern formed by the chad).
Purdy, Dan C., Grant Sperry, and Robert Muehlberger

TRAINEE BREAKOUT SESSION: Trainee Electrostatic Detection Devices - Theoretical and Operational Considerations

**Bio:**  Dan C. Purdy (B.Sc.) joined the Royal Canadian Mounted Police in 1969 as a document examiner trainee. He occupied several positions in their laboratories before retiring in 1999 to work as a private consultant in Ottawa and more recently Vancouver. Dan has published several papers on various subjects including Electrostatic Detection Devices. He is certified by the ABFDE and the FSS in the UK, is a past president of the ASQDE, a member of the AAFS and a Fellow of both the CSFS and the FSS.

Grant R. Sperry (B.Sc.) is a forensic document examiner with over 33 years experience. He received his basic FDE training with the US Army Crime Lab and is published in the JFS and ASQDE Journal. Grant has conducted numerous workshops and seminars over the years and is a past president of the ASQDE, an ABFDE Diplomate, an AAFS Fellow and SAFDE member. Grant has extensive casework experience with EDD/ESDA.

Robert J. Muehlberger (B.A.) was a Forensic Document Examiner for over 34 years and is a past president of the ASQDE. Retired from the U.S. Postal Inspection Service in 2008, he has served as Manager of the Memphis Forensic Laboratory unit and most recently as Laboratory Director of Forensic Laboratory Services in Dulles, VA. He is currently living the retired life in Florida.

**Abstract:**  Attendance at this half-day workshop is restricted to full-time trainees or qualified document examiners with less than 2 years experience. Instructors will explain the theoretical principles behind Electrostatic Detection Devices (EDDs), present useful techniques for optimizing EDD results and demonstrate how those results can be effectively presented in court. Workshop participants will also be shown methods that reveal the sequence of intersecting indented impressions and pen strokes on contested documents. Answers to practical problems assigned to participants prior to the meeting will be reviewed and discussed during this session.
Ramsey Lines, Sandra  
**High Profile Political Cases: Nader, Bush, and Obama**

**Bio:** Sandra Ramsey Lines is a retired law enforcement officer from the Office of the Arizona Attorney General, a former senior document examiner with the Bureau of Alcohol, Tobacco, Firearms, and Explosives, and is now in private practice in Arizona. Sandra began her training with Robert Lockard of the Arizona Department of Public Safety. She holds an AA and BA and is certified by the ABFDE, a Fellow of the AAFS, a member of ASQDE, and a member of SWAFDE.

**Abstract:** High profile political cases can be problematic for forensic document examiners as they can be accused of bias or even conflict of interest regarding their findings. This paper summarizes three political cases the author was involved in: presidential hopeful Ralph Nader, former President George W. Bush, and current President Barack H. Obama. Recommendations are made for dealing with political cases and the conclusion lists questions the expert may be asked to establish bias or limit their testimony.
Ridolfi, Douglas

Role of Oblique Lighting in Forensic Examinations

Bio: Doug Ridolfi has a B.S. in Criminalistics from the University of California, Berkeley School of Criminology, a M.S. in Clinical Laboratory Science from San Francisco State University, a Master of Forensic Science Administration from Oklahoma State University (online) program with an emphasis in Questioned Documents and two-year certificates in Technical and Digital Photography and Graphic Arts from the College of DuPage, Glen Ellyn, Illinois. He trained for two-years full-time in Questioned Documents with the Illinois State Police and is a Fellow of the American Board of Criminalistics and a Certified Senior Crime Scene Analyst through the International Association for Identification. He is currently employed with the Alameda County Sheriff’s Department Crime Laboratory.

Abstract: Oblique lighting is used to reveal surface detail. The origin and development of this method is not well known. Application of the method, although seemingly simple, can lead to better information if optimally used. Light intensity, wavelength, light direction, diffuse vs. point source, angle of application, use of an intervening screen among other factors can have an effect on the ability to distinguish contour detail, surface coating, surface inclusions, etc.

This presentation will examine the history behind using side lighting for observing surface irregularities. The presentation will include methods for optimization and the underlying theory of image formation based on computer vision models.
Rile, Jr., Howard C., YongJia "Sunny" Johnston

Chinese is Greek to Me

**Bio:** Howard Rile has been a forensic document examiner, primarily in private practice, since 1971. He was trained by and affiliated with John J. Harris until 1996, and is now affiliated with A. Frank Hicks. Howard has been certified by the ABFDE since 1979. He has served in various capacities on the boards of the ASQDE and ABFDE, most recently as past president of both. Howard is a member of SWAFDE, CSFS, and AAFS-Questioned Document Section, and is a Life Member of the ASQDE.

**Abstract:** This examiner was contacted on a case which he initially declined to accept. The case involved a holographic Will in Chinese. The attorney was referred to FDEs in China. For a variety of reasons, this recommendation was not accepted by the client. This examiner was advised that other “FDEs” had been retained by the opposing side and, despite the limitations in their training and linguistic abilities, had accepted the case.

This examiner was again consulted and a protocol was devised whereby this examiner felt comfortable in actually working the case in conjunction with a qualified translator.

A protocol was developed whereby the Chinese translator would identify words common to both the questioned and known documents and code them in such a way that this examiner could treat the various Chinese characters as symbolic designs.

This case did go to trial and a decision was reached. Permission was obtained to make this presentation.

This case seemed particularly apropos in light of the recent flurry of emails discussing whether it was appropriate for an FDE to express an opinion on a signature in a language that the FDE was not conversant with.
Shappell, Scott  
Managing Human Factors in the Forensic Sciences  

**Bio:** Dr. Shappell is a Professor of Industrial Engineering at Clemson University. Before joining the faculty at Clemson, Dr. Shappell was the Human Factors Research Branch Manager at the Civil Aerospace Medical Institute. In addition, he has served over 16 years in the U.S. Navy as an Aerospace Experimental Psychologist. He has published/presented well over 200 papers, books, and presentations in the fields of accident investigation, system safety, spatial disorientation, sustained operations and fatigue. Dr. Shappell received a B.S. in psychology (1983) from Wright State University graduating Summa Cum Laude with honors in psychology and a Ph.D. in Neuroscience from the University of Texas Medical Branch in 1990.

**Abstract:** With modern day advances in science and technology, professionals in a variety of complex fields such as aviation, healthcare, nuclear power, and the forensic sciences are operating at unprecedented levels of excellence. Consequently, when errors are made they are often the end result of a cascade of human factors at the organizational, supervisory, and bench level. Managing these threats to excellence is therefore fundamental to maintaining the viability and credibility of any organization. This intensive 1-day workshop provides training in the application of innovative methods for managing human factors associated with forensic investigation that are scientifically derived, empirically tested, and proven in the field. Specifically, the Human Factors Analysis and Classification System (HFACS) is a system-safety model that effectively bridges the gap between human factors theory and applied human factors analysis. It is a proven methodology for reliably identifying and analyzing human error in complex, high-risk systems. The HFACS framework provides a clear understanding of the reasons errors occur so that effective intervention programs can be developed. The Human Factors Intervention matrix (HFIX) is an innovative companion framework for mapping intervention strategies onto the specific human factors identified with in the HFACS model.
Shiver, Farrell

Visualization of a Liquid-Damaged Ink Entry Using an Electrostatic Detection Device

Bio: Farrell Shiver is in private practice in Woodstock, Georgia. He is a member of the QD Section of the American Academy of Forensic Sciences, a member of the Southeastern Association of Forensic Document Examiners, a Diplomate of the ABFDE, and is a past president of the ASQDE. He holds a Bachelor of Science in Law Enforcement and Master of Science in Criminal Justice.

Abstract: An attorney asked that an ink entry, which had had been damaged apparently by water or another liquid, be deciphered. The ink entry was the time of a medical test written on a test log sheet. Circumstances dictated that all examinations be conducted on-site in a hospital. Macroscopic and microscopic examination of the entry disclosed that it had been made with a blue ink non-ballpoint pen. The entry was examined using infrared and ultraviolet techniques. These techniques were unsuccessful in visualizing the original entry. An attempt was made to find indentations of the time entry on the associated documents using an Electrostatic Detection Device (EDD), but none were found. The questioned document itself was also processed with the EDD. Unexpectedly, the EDD processing allowed complete visualization of the time entry. The time entry appeared as a white image on the dark background. It was the same type of image that would be expected if the time entry was still visible (the so-called negative image), rather than the dark appearance of a developed impression. This paper discusses a possible reason for this result and efforts to replicate the same result experimentally.
Spencer, Rosalind

Forensic Document Examiner Opinions on Signatures in Foreign Scripts and Associated Error Rates

**Bio:** Rosalind Spencer trained at Scotland Yard, UK and is currently a Senior Forensic Document Examiner at the Canada Border Services Agency, Canada. She holds a Bachelor of Science with Honours in Biological Sciences, and is certified by and is a Director of, the American Board of Forensic Document Examiners. She is a member of the Canadian Society of Forensic Science, an associate member of the American Academy of Forensic Sciences and a provisional member of the American Society of Questioned Document Examiners.

**Abstract:** There have been court challenges in various countries around the world bringing into question the validity of forensic document examiners (FDEs) expressing expert opinions on writing systems other than those with which they are familiar. This is partly due to the various theoretical paradigms used by FDEs to form the basis of expert opinion in this area.

The purpose of the proposed research is to determine whether FDEs are significantly better at evaluating the authenticity of questioned signatures in a familiar script than FDEs who are faced with an unfamiliar one. To emulate the behaviour of a courtroom jury, results will also be compared to those of a group of laypeople.

In this study FDEs familiar with Chinese script, those unfamiliar with the script, and a group of laypeople will be provided with a series of small validation tests in a blinded fashion.

The assistance of FDEs will be solicited by means of the ASQDE and Docexam email lists. After analysis of results, a discussion will follow, including how these results may be generalised to the overall FDE population, given the limitations of the study. The success of this study will depend on the extent of voluntary participation by FDEs around the world.
Szymanski, Andrew

Questioned Document Examination and the Tablet Computer

Bio: Andrew T. Szymanski is a Questioned Document Examiner with the Washington State Patrol Crime Laboratory, Spokane, Washington. Andrew has a B.S. in Criminal Justice from Bowling Green State University and received his specialized training from the late Dr. Philip D. Bouffard of the Lake County Crime Laboratory, Painesville, Ohio. Andrew is Board Certified by the ABFDE and is a member of the ASQDE, AAFS, MAFS and ASTM.

Abstract: This presentation is an overview on tablet computing, such as the Apple IPad® and applications for Questioned Document Examination. The popularity in tablet computing has grown in recent years and some applications (apps) can be very useful tools for the Questioned Document Examiner. Tablet computers are lightweight, mobile and can assist the document examiner with day to day operations. Examples, such as note taking, presentation and photo apps, along with Questioned Document Examination techniques will be discussed.
Tanaka, Tobin, Valery Aginsky, Andrew Barton, Linton Mohammed, Susan Morton, Gerald Richards, Rosalind Spencer

Globalization and Questioned Documents Panel

**Bio:** Valery Aginsky, Ph.D., is a forensic chemist working in the field of forensic document examination for 30 years. He received his Ph.D. in Analytical Chemistry in 1980 from the Military Academy of Chemical Defense in Moscow, Russia. His training was with the Forensic Science Center of the Ministry of the Interior of Russia. He is currently employed with Aginsky Forensic Document Dating Laboratory located in East Lansing, Michigan. Dr. Aginsky is the author of more than 20 peer-reviewed articles on ink analysis and document dating, including chapters in three books and two encyclopedias.

Andrew Barton obtained a BSc (Hon) in Chemistry at the University of Guelph (1995) and a PostGraduate Diploma in Forensic Science at the University of Auckland (1999). He received his formal training with the New Zealand Police beginning in 2000. He is currently a Forensic Document Examiner with the Canada Border Services Agency, and is certified by the ABFDE.

Linton Mohammed, Ph.D., a Forensic Document Examiner in private practice in Northern California. He has conducted research in the area of signature examination and has published several papers in peer-reviewed journals. He is the current president of ASQDE. Mr. Mohammed and Professor Caligiuri are the authors of "The Neuroscience of Handwriting: Applications for Forensic Document Examination."

Susan Morton began training as an FDE in 1971 with Jack McCarthy of the FDLE and completed training in 1973 with James Kelly of the Georgia State Crime Laboratory. In 1976 she relocated to San Francisco to work in the Postal Inspection Service Western Region Laboratory. Susan retired in 2009 after ten years with the San Francisco Police Department Crime Lab. She now resides in rural Oregon. Susan does not practice, but does occasional consulting work helping developing countries set up questioned document laboratories. She also edits the Journal of the American Society of Questioned Document Examiners. She is a Regular member of the ASQDE, a Retired Fellow of AAFS, and has been Certified by the ABFDE since 1978.

Gerald B. (Jerry) Richards has been an examiner of questioned documents and photographs in both the public and private sector for almost 40 years. In addition, he has taught graduate level courses in document examination at both The George Washington University and Oklahoma State University. He graduated with a BS degree in 1966 and a MS in Ed degree in 1967 from Southern Illinois University. Jerry was a Special Agent with the FBI for 23 years until his retirement at the end of 1993. A third area he specialized in during that period was espionage tradecraft (things spies use). After working as an Agent examiner for a number of years, he was promoted to Unit Chief of the Document Operations and Research Unit and then later transferred to the Special Photographic Unit as Unit Chief. Based on his work on numerous espionage cases, in 1991 he received the National Intelligence Medal of Achievement from the Director of Central Intelligence (DCI) and National Foreign Intelligence Community. He is also recipient of the AAFS Ordway Hilton award and the ASQDE Linton Godown Award for Research. He has been ABFDE certified since 1994. Jerry has testified in many cases in federal, state, local and foreign courts. Among the overseas testimonies have been Canada, (Ottawa, London & Newfoundland) Dominica West Indies, Singapore, Israel and South Africa. In addition to overseas testimonies he
has conducted examinations, training and consultation in Belarus, Georgia, England, Germany, Austria, Greece, Spain, Guatemala and China, to name a few.

Rosalind Spencer trained at Scotland Yard, UK and is currently a Senior Forensic Document Examiner at the Canada Border Services Agency, Canada. She holds a Bachelor of Science with Honours in Biological Sciences, and is certified by and is a Director of the American Board of Forensic Document Examiners. She is a member of the Canadian Society of Forensic Science, an associate member of the American Academy of Forensic Sciences and a provisional member of the American Society of Questioned Document Examiners.

Tobin Tanaka is a forensic document examiner at the Canada Border Services Agency. He is a regular member of the American Society of Questioned Document Examiners, the questioned document section of the American Academy of Forensic Science, the document section of the Canadian Society of Forensic Science, the Forensic Science Society and is certified by the American Board of Forensic Document Examiners.

**Abstract:** Globalization: the process by which businesses start operating on a global scale. The intent of this panel is to foster some global ideas on how to improve the practice, promotion and quality of questioned document (QD) examination worldwide and to learn how to assist one another on an ongoing basis.

With globalization as the theme for discussion, a panel of QD practitioners with varied international experience will voice their views on the more pressing issues that the QD community faces today. Areas to be explored: education/training, research, casework, privatization vs. public sector models and international/supranational bodies in the questioned document theatre. To further the discussion, a list of questions will be provided to panel members and the meeting attendees beforehand to elicit a free exchange of ideas.
Tolliver, Diane, Michael P. Caligiuri, Ph.D., Dennis W. Dickson, M.D., Christopher Goetz, M.D.

Differential Effects of Progressive Supranuclear Palsy and Corticobasal Degeneration on Signature Handwriting: A Longitudinal Case Report

Bio: Diane K. Tolliver, MPA (from Indiana University), BS (from Indiana State University), Diplomate-American Board of Forensic Document Examiners. Retired from the Indiana State Police Laboratory after 35 years, 11 months as a Forensic Document Examiner on June 1, 2010. She is presently in private practice from Danville. She is a member of the ASQDE, AAFS, and the ASTM.

Abstract: A neuropathologically confirmed case of atypical progressive supranuclear palsy (PSP) presenting with corticobasal syndrome (CBS). Handwritten signatures were obtained at regular intervals from the patient for three years prior to death to document change in motor function. This case sheds light on the differential effects and time course of progressive subcortical and cortical disease on handwriting in a single individual.
Welch, John R.

Likelihood Ratios, Conclusion Scales, and the UK Court of Appeal

**Bio:** After graduating with a Bachelor of Science degree in chemistry John trained as a document examiner at the forensic science laboratory attached to New Scotland Yard, London. It was his good fortune to receive training and mentoring of high quality and to enjoy working there for many years. It was his misfortune that after it had changed status several times that laboratory sank beneath his feet; he has been in private practice since 2010.

**Abstract:** A brief and elementary account of the use of Bayesian Inference in the forensic sciences in England and the limitations imposed on it by the appeal courts.
Westwood, Paul, , Andrea Devlin

Myth Busted - The Adept Penman Revisited

Bio: Paul is the Director of Forensic Document Services, Australia with laboratories in Canberra and Sydney and field equipment located in Hong Kong and Singapore.

Paul is a corresponding member of the ASQDE. He holds the degree of Bachelor of Laws, is a Member and Diplomat (Document Examination) of the Forensic Science Society of the United Kingdom, a founding member of the Australasian Society of Forensic Document Examiners Inc., and a member of the Australian Academy of Forensic Sciences, the Australian and New Zealand Forensic Science Society, and the International Association of Financial Crime Investigators.

Paul was awarded the Medal of the Order of Australia in 1982 for services in the field of document examination to the Australian Federal Police. He was also awarded the National Medal in 1984 in respect of his police service. Paul has extensive court experience throughout Australia and overseas spanning a period in excess of forty years.

Andrea Devlin holds a degree of Bachelor of Applied Science (Forensic Investigation) from the Canberra Institute of Technology, completed in 2007. She has been employed by Forensic Document Services Australia since July 2006 and completed her training under the guidance of Paul Westwood, Steven Strach and Michelle Novotny, all corresponding members of the ASQDE. Andrea is a member of the Australasian Society of Forensic Document Examiners Inc., the Australian and New Zealand Forensic Science Society and the International Association of Financial Crimes Investigators.

Abstract: The ability of the "Adept Penman," Zug G. Standing Bear (Zug), to simulate signatures is referred to from time to time in courts to help explain away genuine signatures as being the work of a "master forger."

The 1977 paper on the Adept Penman by Buglio and Gidion invites the reader to make their own determination as to the extent of Zug's ability to produce passable freehand simulations of genuine signatures. No such determinations have been documented to date.

The original Adept Penman file was made available for laboratory examination to determine the extent to which Zug's simulations exhibit the "indicia of forgery." The examination focused on thirteen of the simulations. It was found that, to varying degrees, they each exhibited many of the indicia of simulation as discussed and demonstrated.

The opportunity was also taken to test whether Zug's simulations would pass inspection by non-document examiners such as staff of financial organisations, police, government investigators and lawyers. A significant number of these lay people were able to nominate the simulation in each set of signatures.

It is hoped that this paper will provide a further insight into Zug's simulations and serve as a useful reference when the work of the Adept Penman is cited in support of a claim that a signature is the product of a "master forger."
Winchester, Janis M.

Essential Tremor and the Effect on Line Quality in Handwriting

**Bio:** Janis M. Winchester is a Forensic Document Examiner retired from the Florida Department of Law Enforcement after 38 years. She is a Regular Member of the ASQDE, Editor, ASQDE Journal, initial Daubert Committee, Fellow American Academy of Forensic Sciences, Life Member IAI, past ASCLD Inspector and Chair Proficiency Committee. Janis lives in Fort Myers, Florida.

**Abstract:** The purpose of the research is to describe essential tremor associated with the handwriting of those who have a muscular movement disorder. The handwriting of individuals with essential tremor is often diminished in line quality and letter formation. The result of this review reports the use of medical technology, such as radiosurgery, that may offer a benefit for the individual for greater muscle control. The increase in muscle control allows for a corresponding increase in the overall appearance of the handwriting. There is greater pen or pencil direction, and a greater line quality observed. The conclusions in the medical field today, are optimistic about the treatment outcomes relating to greater line quality and overall handwriting ability for those persons with essential tremor.
**Wood, Theresa**  
**Frequency of Printed Letter Characteristics**

**Bio:** Theresa is a recent graduate from California State University, Fresno where she earned her Master's in Forensic Science. She is volunteering in the Questioned Documents section of the Washington State Patrol Crime Laboratory in Cheney, Washington.

**Abstract:** A lack of a scientific basis of the frequency of letters was first noted by Livingston in 1963; yet even today many characteristics of letters remain unstudied. Most studies focus on select features of some of the letters. This project is set up to look at many features of printed letters to provide statistics on their occurrences and update outdated data.

The samples used in this project were course of business handwriting samples collected from archived questioned document cases from the Washington State Patrol, as well as friends, family members, and coworkers of the presenter. In total, handwriting samples were collected from 145 people, with a total of 435 documents. All observable characteristics of the printed letters were counted and resulted in frequency information on the occurrence of the characteristics. Data on the most frequent letters in the samples (E, T, O, A and I) were previously reported (SWAFDE April 2012.) Statistics on characteristics for the next five most frequent letters (N, S, R, H and L) will be reported here.
Yaniv, Yaacov, Jay Levinson

Complicated Signatures, Complicated Conclusions: Two Cases

**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 Studie. 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:** Signatures confront the Questioned Document Examiner with the challenge of deciding whether he can reach a definite conclusion or if he must make a qualified determination. In certain cases where both questioned and known signatures are limited in quality and quantity, the QDE usually cannot reach a definite conclusion. In some cases he cannot reach any conclusion. This paper gives examples of both literal and pictorial signatures which require qualified opinions.