

Aginsky, Valery

Scope of Applicability of the Ink Aging Methodology that Measures the Loss of High Boiling Solvents from Oil- and Water-Based Inks on Paper

Abstract: The ink aging methodology that is based on measuring a gradual loss (due to evaporation and diffusion into paper) of high boiling solvents from ink on paper has been extensively published and used in casework for over two decades. This paper reviews numerous publications that discuss the capabilities and limitations of this ink aging methodology, and it analyzes all presently available experimental data that helps evaluate the limits (scope) of applicability of the methodology to the dating of both oil/glycol-based inks (conventional ballpoint inks) and water-based inks (rollerball and gel ballpoint pen, felt tip pen, stamp pad, and inkjet inks). Also, the paper discusses in detail an application of this ink aging methodology to the dating of the rollerball inks that contain the high boiling solvent 2-pyrrolidone (2-PD), and it shows that the scope of applicability of the method can be increased by several months if the analyst chooses ‘thicker’ ink lines for the ink aging tests. In particular, the results of this work show that, at normal environmental conditions, the rate of the loss of the solvent 2-PD from Pilot® rollerball inks after their placement on paper, as well as from paper in close proximity (immediately next) to the inks’ strokes, may correlate with the age of the inks during up to 12 months following the application of the inks to paper: the natural aging curves “Content of 2-PD – Age of Ink” obtained for the rollerball inks tested in this study leveled off within less than 6 months, when single ink lines were tested, and within less than 12 months, when the areas of retracing and points of the intersection of two ink lines were tested. Thus, a monitoring of the gradual loss (with age) of 2-PD, both from the inks on paper and from paper in close proximity to the inks’ lines allows one to distinguish between fresh (less than 12 months old) and old (significantly older than one year) entries written with rollerball inks. These findings are in agreement with the results of other studies of the aging of oil/glycol- and water-based inks that have been published by forensic scientists from multiple countries and that are reviewed in this paper.

Bio: Valery Aginsky is a forensic chemist working in the field of forensic document examination for about 35 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 25 peer-reviewed articles on ink analysis and document dating, including chapters in several books and encyclopedias.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Anderson, Chris, Anna Aguis and Gary Storey

Utilising Data From Write On 2.0 To Provide A Stronger Scientific Basis For Handwriting Examinations.

Abstract: Forensic document examination can fall prey to criticism regarding the lack of a proper statistical basis in handwriting examinations. The development of Write-On as a tool to aid FDEs in the analysis of handwriting has helped to address this situation. One facet Write-On provides is a wealth of statistical data, however it seems to be largely under-utilised. The authors have developed methods to better exploit the statistical data produced by Write-On, which gives the examination a stronger scientific footing. Using a case study involving two writers, this research explores how to extract the data produced by Write-On, export it into MS Excel® and use this data to demonstrate whether there is a sufficient quality and quantity of handwriting to conduct a proper and adequate comparison. Conveying this information in a report provides an improved scientific basis for the opinion expressed.

Bio: Chris Anderson is an experienced and recognised forensic document examiner. He acquired his experience and expertise initially from the Australian Federal Police commencing in their laboratory in 1976, then with the Department of Immigration, Local Government & Ethnic Affairs. Chris has presented evidence in court as an expert witness on countless occasions. In 1984 Chris commenced a private consultancy on forensic document examination. He focused on providing a service to the legal profession, other professional bodies, banks and business organisations in Australia and New Zealand covering all aspects of document examination. In 2004 Chris graduated with a Bachelor of Science degree majoring in Statistics from Macquarie University. Chris is a corresponding member of the ASQDE and a member of the ASFDE Inc.

Anna Agius is applying to be a PhD candidate at the University of Technology Sydney (UTS). She completed a Bachelor of Forensic Science in Applied Chemistry (Honours) in 2016 at UTS. Anna has been casually employed as an assistant to the forensic document examiner, Chris Anderson, at Chris Anderson & Co Pty Ltd Forensic Document Examiners since August 2016. She is a member of ANZFSS since 2014.

Gary Storey is a consultant forensic document examiner to Chris Anderson & Co Pty Ltd. He initially commenced training as a FDE with the Victoria Police in 1978 under the direction of the late Chief Inspector Len Timewell and Mr Neil Holland. In 1993 he

2017 ASQDE MEETING – ABSTRACT SUMMARY

Angel, Miriam, Michael P. Caligiuri, Ph.D and Melvin Cavanaugh

Kinematic Models of Subjective Complexity in Handwritten Signatures

Abstract: This research seeks to develop a model using kinematic features that best explains variability in Forensic Document Examiner's (FDE's) perception of complexity. One hundred and twenty-three individuals provided five genuine signatures each. All signatures were collected on a tablet running MovAlyzeR® software, which recorded the kinematic data while the subject was signing. Scanned copies of the signatures were sent to five FDEs who were asked to rate the complexity on a five-point scale. For the purpose of this study, complexity was defined as how difficult it would be to simulate the signature without detection by an FDE. The effects of signature style on stroke kinematics were statistically significant for several variables, so separate models were developed for the three signature styles. Kinematic models ranging from three to eight parameters explained 71%, 76%, and 79% of the variation in complexity judgment for text-based, stylized, and mixed-style signatures, respectively. Our results confirm those from previous work that the number of strokes (or the number of turning points) in a signature is a strong predictor of FDE complexity assessment, adding that other kinematic variables such as stroke velocity, slant, horizontal stroke length, and total length of all segments of the signature, together with number of strokes, account for a greater portion of variability in complexity perception. These results underscore the importance of sensitive kinematic analyses of temporal and spatial features in understanding signature complexity.

Bio: Miriam Angel has been a Forensic Document Examiner with the Los Angeles Police Department for 23 years. She completed her 2-year training program in 1996. Miriam earned a Bachelor of Science degree in Applied Mathematics from UCLA and a Master of Science from USC in Computer Science. She is a Provisional member of the ASQDE, a member of SWAFDE, and is certified by the ABFDE.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Annunziata Nicolaides, Kathleen and William Flynn

(WORKSHOP) Preparing a Digital Signature File for Forensic Analysis

Abstract: Biometric RAW signature files are not standardized. As a result the forensic document examiner who agrees to take on an analysis of these signatures can face a daunting challenge: What do all those values mean? It has been our experience that the most difficult part of an electronic signature examination is trying to isolate the X-Y and possibly Pressure data from a host of other potential values captured at the same time. Some of this data can include screen coordinates, “ink” color, pen width, etc. Attendees will become familiar with preparing various formats of SIG files for data import into an Excel worksheet. If time allows, attendees will also plot the data. Attendees will need to bring a laptop computer installed with Microsoft Word, Excel, and a text editor such as Notepad.

Bio: William J. Flynn and Kathleen Annunziata Nicolaides, with Affiliated Forensic Laboratory in Phoenix, Arizona, have experience with electronic signatures going back 18 years. Both have published research articles in this area. Both are certified by the ABFDE, members of ASQDE, AAFS and SWAFDE. Combined they have 68 years of forensic document experience, which makes Bill old enough to remember when General Electric was a corporal.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Bhutta, Zumrad Usman and Saqib Sultan

Analysis of Urdu Handwriting and its Recognition

Abstract: In this Study, a structural method of recognising Urdu handwritten writing characters is proposed. The main problem in the cursive writing identification is the segmentation into characters and into representative strokes. When we divide the cursive parts of the words, we take into account the appropriate properties of the Urdu grammar and the segments connecting the characters with each other along the writing row. The main alphabets of Urdu are quite similar to that of Arabic; however, the problem determined was to detect disguises and forgeries in the Urdu writing specimens. For this collection of the data of different people on how they write the basic alphabets in Urdu writing and observe the change in alphabets with time. The data gathered for this is more than 20 candidate characters with similar shapes. Then the analysis follows, that checks the sample via goal-directed feedback control. Key words Character recognition Cursive handwriting in Urdu writing characters Script.

Bio: Zumrad usman Bhutta is a forensic questioned documents analyst in National Forensic Science Agency in Pakistan. He got his Master of Science in Forensic Chemistry from the prestigious university of Pakistan, Government College University Lahore, Pakistan. He received training from Australia Federal Police and also gives many forensic lectures to different law enforcement agencies in Pakistan; he has presented two international forensic lectures in America and Canada in his experience. He also did many criminal cases regarding fraud, cheques, currency, analysis, hand writing analysis in his experience.

Saqib Sultan is the Senior superintendent of Police department Pakistan. He worked in different provinces of Pakistan as senior police Officer. Now he Is working as Project Director National Forensic Science Agency Pakistan Which is the one of the best forensic facility provider in Pakistan.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Bishop, Brett

New Research Into Development Techniques of Indented Impressions

Abstract: This technical presentation explores various toners and powders used for the development of impressions on documents utilizing the Electrostatic Detection Apparatus (ESDA). A few fingerprint powders, including fluorescent fingerprint powders in conjunction with an alternate light source, and multi-function printing device color toners were used during this research. The experiments conducted with the different toners will be reported. In addition, Adobe Photoshop enhancement and isolation techniques applied to developed latent impressions will also be presented.

Bio: Mr. Brett Bishop is a Supervising Forensic Scientist with the Washington State Patrol Crime Laboratory Division. He supervises the Questioned Document, Latent Print, and Firearms & Tool Marks sections. He is a member of the American Society of Questioned Document Examiners, the Southwestern Association of Forensic Document Examiners, the International Association for Identification, and the National Institute of Standards and Technology Organization of Scientific Area Committees Questioned Document Subcommittee. Brett has a Bachelor of Science in Chemistry from Eastern Washington University.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Caligiuri, Michael, Linton Mohammed, Brenda Lanners and Gina Hunter

Kinematic Validation of FDE Determinations about Authorship in Questioned Handwriting

Abstract: As with many of the forensic disciplines that rely on feature-comparison methods, there is no “gold standard” against which to test accuracy of handwriting examination. The goal of this pilot study is to identify dynamic features in handwriting for larger scale validation of expert examiner determinations of authorship. The present study builds upon laboratory-based research on handwriting motor control to examine whether questioned handwriting with uncertain authorship can be distinguished with high degrees of accuracy by independent dynamic features characterizing handwriting strokes. Handwriting samples were obtained from 37 writers recruited from the employees of the San Diego Sheriff’s Crime Laboratory. Study subjects were asked to write a single word ten times using each of three writing styles: cursive, script, and block print. Samples were obtained twice from each writer separated by a 3-week interval. We followed standard published procedures for digitizing the samples and extracting kinematic features from handwriting samples. High resolution (600 dpi) scanned copies of the original ink and paper samples were submitted to four FDEs for authorship determinations. Each score sheet included 5 known (K) handwritten samples and two questioned (Q) samples. FDEs were asked to rate the evidence in support for the propositions that Q1 and Q2 were written by the known writer using a 4-point scale (ranging from limited or weak support to very strong support for the propositions). FDEs scored ten sets each of cursive, block print and script print words. Dynamic kinematic difference scores were converted to absolute standardized Z-scores using the formula $Z = (K - Q_n) / K_{sd}$; where K is the mean kinematic value across all strokes for known samples, Q is the mean kinematic value across all strokes for a single questioned sample, and Ksd is the standard deviation of the first five known samples. The larger the Z score the greater the standardized differences between K and Q for a given dynamic kinematic feature. Three kinematic parameters were significantly ($p < 0.05$) associated FDE opinion of acceptance and rejection of the proposition that $Q = K$, including pen pressure, peak stroke velocity, and loop surface. Correlational analyses were performed to examine relationships between the kinematic Z-scores and FDE judgments of authorship. Statistically significant correlations included upstroke straightness error for cursive writing ($r = -0.44$; $p = 0.05$), downstroke peak velocity for cursive writing ($r = -0.58$; $p = 0.007$), and upstroke pen pressure for script writing ($r = -0.54$; $p = 0.014$). Results from this pilot study support the use of an independent quantitative measure of feature comparison (kinematic difference score) as a tool for evaluating the foundational validity of expert opinion in handwriting comparison. Findings are discussed in terms of their “black box” implications and limitations.

Bio: Dr. Caligiuri is an Emeritus Professor of Psychiatry at UCSD. His teaching and research focus on normal and impaired human motor control with emphasis on handwriting. He has published numerous articles on use of handwriting kinematics to understand psychotropic drug effects, aging, and neuropsychiatric disease on hand motor control.

Dr. Linton Mohammed has been in the field of Forensic Document Examination for more than 30 years. He has testified as an expert witness more than 100 times in the US, England, and the Caribbean. He is the co-author of “The Neuroscience of Handwriting: Applications for Forensic

2017 ASQDE MEETING – ABSTRACT SUMMARY

Document Examination” and has published several papers in peer-reviewed journals. Dr. Mohammed is certified by the American Board of Forensic Document Examiners, Inc and hold a Diploma in Document Examination from the Chartered Society of Forensic Sciences. He is a member and Past-President of the American Society of Questioned Document Examiners, Inc and is currently serving as the Chair of the Questioned Documents Section of the American Academy of Forensic Sciences.

Brenda Lanners is the Senior Forensic Document Examiner at the San Diego Sheriff's Crime Lab. She has been a member of the ASQDE since 2011 and was certified by the ABFDE in 2014. She has a BS in Biology from San Diego State University, an AS in Forensic

Gina Hunter is a Forensic Document Examiner from the San Diego Sheriff's Crime Lab. Ms. Hunter was trained by Marie Durina and completed her three year training in April of 2016. Gina has a bachelor's degree in Criminal Justice with a minor in Chemistry from SDSU and has completed four graduate courses in Forensic Document Examination from Oklahoma State University.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Cheng, Yau-Sang, Patrick

A Study On The Possible Variations In Writing Features Of The Most Commonly Occurring Radicals In Chinese Characters

Abstract: Three papers have been prepared for the ASQDE Conference under the series titled “An Overview of Radicals in Chinese Characters”. The first paper titled “An Overview of Radicals in Chinese Characters” detailing the 214 different radicals in Chinese characters was circulated in the 2010 ASQDE Conference. The second paper titled “An Overview of Radicals in Chinese Characters Part II – A study on the writing of radicals of similar structures” was circulated in 2011 ASQDE Conference. The third paper in 2014 titled “An Overview of Radicals in Chinese Characters Part III – An investigation into the possible influence of the position of a radical in a character on its writing movement.” These papers have provided useful information. The present paper aims to investigate the possible variations in writing of 23 most commonly occurring radicals in Chinese characters as pointed out in the first paper. These 23 radicals are also characters in their own right, with each having numerous Chinese characters grouped under the radical. Statistical data have been collected which are useful in casework evaluation. Trends like connection of strokes, dot direction, relative stroke lengths, etc. have also been evaluated and discussed.

Bio: CHENG Yau-Sang, Patrick, is a BSc in Chemistry [London University] and a MSc in Forensic Science [Strathclyde University]. He acquired knowledge and accumulated experience in the Questioned Documents Section of the Hong Kong Government Laboratory. Up to date, he has accumulated 26 years of experience and expertise, and he has been on private practice as a Forensic Handwriting and Document Examiner since 2004.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Conrad, Marianne

A Matter of Practice

Abstract: In a high profile case involving a notary and a wealthy businessman, a signature on a contract was questioned. While at first glance this case seems to be a standard examination for a handwriting expert, the circumstances made it quite extraordinary. This presentation shows how the forger practiced a signature over and over, until he could produce the desired handwriting quite fluently. However, the examination of the material revealed that, although the forger was skillful, “excessive practicing” might have downfalls.

Bio: Ms. Conrad completed a 3 year training in the field of handwriting examination, which combined the theoretical studies of the subject at the Universities of Mannheim and Bonn with the practical work of handwriting cases at the state police department of North Rhine-Westphalia (i.e. the Landeskriminalamt NRW). She got her diploma in handwriting examination at the University of Mannheim in 1991. Ever since she works as a handwriting expert at the Landeskriminalamt NRW in Düsseldorf. Ms Conrad is a corresponding member of the ASQDE.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Curfman, Hugh

Preliminary Study of Frequency Proportions of Nine Styles of Downward Arrows

Abstract: A handwritten arrow is one of the many characteristics which in combination can establish individuality in writing. Nine styles or classes of handwritten arrows, differentiated by their pattern of strokes and final appearance, are classified and counted in this preliminary study. Requested samples recording age, sex, and writing hand are from 129 subjects writing 14-15 arrows each for a total of approximately 1800 arrows. Approximately 53% of the writers began their arrowheads with a movement to the left, with or without pen lift, finishing with a left-to-right stroke. Approximately 15% of the writers used multiple styles. Approximately 40% of the writers completing their arrows with a right-to-left stroke were left-handed. Approximately 26% of the writers using multiple styles were left-handed. In order to evaluate possible confounding variables in this request-exemplar data, Property Room logs recording evidence check-out and check-in were collected. These due-course logs, spanning approximately one and a half years, offered about 840 handwritten arrows executed by 32 writers. Results of classification and counting yielded similar findings to the request-exemplar evaluation: 56% finished with a left-to-right stroke and 23% used multiple styles. No handedness data was available.

Bio: Hugh Curfman is a Forensic Document Examiner with the San Diego Police Department Crime Lab. He completed his training with Sandra Wiersema and David Oleksow in 1991. He is a member of SWAFDE and was certified by the ABFDE in 1998.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Detwiler, Khody

(POSTER) Double-Sided Photocopies: The Next Best Thing

Abstract: Although Forensic Document Examiners (FDEs) prefer to examine original evidence, this luxury is often times not possible. In casework, the examination of photocopies in place of original evidence seems to occur more often than not; however, the scope of the analysis remains the same in that the retaining party is always seeking a definitive answer as to whether or not the submitted “signature,” “writing” and/or “document” is authentic. Forensic Document Examiners certainly understand the limitations that can arise when conducting an analysis with non-original evidence, often times resulting in qualified or inconclusive opinions; however, Forensic Document Examiners should not prematurely discount photocopy evidence until conducting a thorough and exhaustive examination. This presentation stems from a matter in which the author was asked to determine, based upon photocopy reproductions, whether or not a group of signatures appearing on a Lease were the product of a “Cut-and-Paste” fabrication as claimed by opposing counsel. Based upon a complete and thorough analysis of the submitted photocopy reproductions, evidence was found within the document providing positive proof that the signatures appearing on the Lease at issue were not be the product of a “Cut-and-Paste” fabrication.

Bio: Khody Detwiler is currently a Forensic Document Examiner in private practice with Lesnevich & Detwiler located in Roaring Spring, Pennsylvania. After receiving a Bachelor of Science degree in Criminal Justice from Penn State University, Mr. Detwiler completed his formal training under the instruction of Gus Lesnevich. In addition to the American Society of Questioned Document Examiners (ASQDE), Mr. Detwiler is also a member of the Questioned Documents Section of the American Academy of Forensic Sciences (AAFS), Midwestern Association of Forensic Scientists, Inc. (MAFS), Mid-Atlantic Association of Forensic Scientist (MAAFS), Northeastern Association of Forensic Scientists (NEAFS) and the International Association for Identification (IAI). Mr. Detwiler is currently serving as vice chair of the Forensic Document Examination Consensus Body of the AAFS Standards Board.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Eisenhart, Linda

Handwriting Comparison Method: A Review of Information related to Foundational Validity and Validity as Applied

Abstract: The presenter will extrapolate the main ideas of the recent report from the President's Council of Advisors on Science and Technology (PCAST) that points out two main concerns regarding forensic pattern recognition methods: 1) the need to demonstrate foundational validity of the method and 2) whether the method is valid as applied. The presenter will discuss what information forensic document examiners currently have to address these concerns regarding handwriting comparison, including empirical evidence to establish the method's false positive rate and sensitivity, discuss proficiency testing practices, and verification practices. In addition, the presenter will highlight current plans for a black box study focused on handwriting.

Bio: Linda Eisenhart is a Forensic Document Examiner with the Federal Bureau of Investigation's Questioned Documents Unit. Linda earned her Bachelors of Science in Chemistry from the University of Pittsburgh in 2005 and earned her M.B.A. from the DeVry University's Keller Graduate School of Business in 2009. She is currently the Chair of the Questioned Documents Section of the Mid-Atlantic Association of Forensic Scientists and is an invited guest for the year's Annual Meeting of the ASQDE.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Giles, Audrey

Working for both sides in UK Civil Litigation

Abstract: Civil Procedure Rules (CPR) are the rules used in the Civil Courts of UK (Court of Appeal, High Court of Justice and County Courts) and came into effect on 26th April 1999. Part 35 of the CPR includes a provision for the use of a Single Joint Expert in civil (not criminal) cases. The Single Joint Expert (SJE) is appointed jointly by the parties in the case and special rules govern the conduct of the expert and the instructing solicitors in these cases. This paper reviews the implications of being instructed as a SJE and why this process, which seemed to be such a good idea at the beginning, may be a burden to the expert and not provide the best evidence for the Court.

Bio: Dr Audrey Giles was formerly head of the Questioned Documents Section of the Metropolitan Police Forensic Science Laboratory, London. She has been in private practice since 1989 and now handles cases exclusively in Civil Litigation.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Goz, Leah and Sharon Brown

Authenticity of Land Ownership Documents

Abstract: One significant domain of examination in the Israel police's questioned document lab is the verification of authenticity of Land Ownership Documents. The documents are usually dated from the beginning of the 20th century and up to the late 1960's. During that period the area was under the rule of the Ottoman Empire, followed by the British Mandate, after which certain parts were under Jordanian and Syrian regimes until 1967. The examination of these documents is challenging due to the fact that in most cases there is limited access to official samples for comparison, and sometimes the documents are simply handwritten. When handwriting examination is involved, there are no samples for comparison since the documents are 50-100 years old and the parties involved are most often deceased. The examination procedure includes analysis of the raw materials - the paper, the printing or writing inks, the wet stamps and the revenue stamps (if present). In some cases, handwriting and signatures comparison is requested, either within the document itself (one writer) or between two or more documents when relevant. Several cases involving varying methods of forgery will be discussed.

Bio: Leah Goz is a Forensic Document Examiner in the Israel Police. She has a bachelor's degree in Arabic Literature from the Hebrew University in Jerusalem, and during her studies also learned Russian. Leah completed her 4-year training program in 2016, and she is the acting questioned documents lab's quality manager since 2015.

Sharon emigrated to Israel from England in 1981. She studied chemistry at the Hebrew university, Jerusalem, completing her masters degree in 1989. Sharon joined the Israel police's questioned documents lab in 1989 where she has served till today. She was promoted to head the lab in 2012.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Green, James

ABFDE update

Abstract: Items of current interest related to the ABFDE will be presented to the attendees.

Bio: Jim Green is a current member of the Society, SWAFDE and a Diplomate of the ABFDE. He also serves as the Treasurer for the ABFDE and will present items of interest about the Board.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Hecker, Thomas

Signalizer - Collecting and analyzing data of dynamic features of handwriting

Abstract: Signalizer is an app developed by the author to collect data of the dynamic features of handwriting using the Apple iPad pro together with the Apple pencil. The signatures are captured as vector based images. The data about the dynamic features such as velocity, pressure, azimuth and altitude is captured as well and stored in CVS format for further statistical analysis. Based on a first sample of 100 signatures the author will present first results regarding the analysis of the data. Key questions are: is it possible to calculate a dynamic profile of a writer? How big is the correlation between dynamic factors and could this correlations be used for discriminating between individuals? Is it possible to calculate an average signature based on the data captured? Finally the presentation discuss further research and gaps. With the presentation the author looks for an international university that is willing to support the research project accepting it for a PhD thesis.

Bio: Thomas Hecker is a Forensic Document Examiner in private practice. He is certified by the German chambers of commerce and was trained by his father, Dr. Manfred Hecker. He earned a Diploma in Business Administration and is also a corresponding member of ASQDE.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Hicks, A. Frank

Wadayasay?

Abstract: In light of the fact that courtroom testimony is the final step in many of our examinations, it is important that we have the proper training to enable us to answer those challenging questions in a professional manner. This presentation will be an open discussion with the participation of all the attendees. Some challenging questions asked during testimonies will be shared and answers from the attendees will be solicited. This will serve as useful training for younger examiners and as a reminder for the more senior examiners.

Bio: Frank Hicks has been in the Document Examination field for over 40 years. He received his training at the Georgia Crime Laboratory and then started the Questioned Document Section at the Mississippi Crime Lab. After retiring from that position, he joined Howard Rile in the office of Rile & Hicks in California where he still practices.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Holland, Neil

New Security Devices for Document Protection

Abstract: Within the current environment, the enormity of border protection and identity protection is paramount where travel and identity documents, currency and other negotiable documents require more than conventional security protection method. The use of third party security devices either printed on or incorporated within the security documents are essential. Two of the latest technologies will be explored and these are the use of Photonic Crystals and Micro lens technology.

Bio: Neil Holland is a forensic document examiner. For over 13 years he was employed in the Document Examination Branch of the Victoria Police State Forensic Science Laboratory, Melbourne, Victoria, Australia. He was head of this Branch when he left to set up his own private practice. He has been operating his own private Document Examination Consultancy from 1989 to present day. He has a BSc (Chemistry) degree in Chemistry and a Diploma of Applied Science in Chemistry. Apart from accepting the normal Document Examination cases he has been used extensively throughout Australasia and Worldwide as a security printing consultant.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Kainuma, Alan

(POSTER) Check Washing

Abstract: Check washing has been a tactic utilized by criminals for several decades now. Check washing involves the alteration of a check by the application of a chemical agent to remove written entries from the check followed by rewriting the check. Since the start of the year our laboratory has received an increased amount of check washing cases. This poster will present some of the features observed that indicate check washing has occurred and the results of our experiments to duplicate the check washing process.

Bio: Alan Kainuma is a Questioned Document Examiner with the Honolulu Police Department's Scientific Investigation Section. He completed his laboratory's training program in 2010 and is currently certified by the ABFDE. Alan is also a Footwear and Tire Impression examiner and has been active in field since 2005.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Lee, Jr., F. L. "Jim"

The Evolution of Documents Submitted For Questioned Document Examination

Abstract: This lecture will discuss how the type of questioned documents encountered has changed over the last few decades. The increasing pace of developments in security features and the corresponding advances in VSCs will be discussed as well as how these changes may affect document examiners today and in the future.

Bio: Jim Lee is a Questioned Document Examiner in private practice. He is a Life-Member of the ASQDE and a Diplomat of the ABFDE. He has a Master of Science Degree and a Bachelor of Science Degree from Troy University.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Lehman, George

(POSTER) The ESDA vs. The Shredder

Abstract: The ESDA vs. The Shredder When a Forensic Document Examiner begins an examination, involving an original piece of evidence, that analysis often begins with an indented writing examination. Indented writing can clearly hold a clue to the identity of the author of a questioned document, or a time frame that the questioned document was created. The indented writing, or impressions located often can contain a name, an address, a date, or even enough handwriting characteristics and habits to be able to conduct a handwriting examination on a known suspect. The Modern day advancements in the field have indented writing examinations being conducted with the use of an Electrostatic Detection Device, most commonly the Electrostatic Detection Apparatus (ESDA). What happens when the documentary evidence that is submitted to a Forensic Document Examiner is a shredded document; a document that seems to be nothing but damaged paper fibers and abrasions? Once the document is assembled, will the ESDA be able to detect the impressions on the document? Are the impressions even still there? Are the impressions readable and how do they compare to similar impressions on a document that hasn't been shredded? This poster presentation will explore the questions above and discuss research that was conducted into how a shredder can affect the Forensic Document Examiner's ability to lift impressed writing with the use of an ESDA.

Bio: George Lehman, a D/Sgt. with the Michigan State Police, currently works at the Michigan State Police Lansing Forensic Laboratory. D/Sgt. Lehman entered the MSP in 1998. There he worked as a Trooper at Posts in Battle Creek, Jackson, Coldwater and as an instructor at the department's Training Academy. In the fall of 2012, he entered the Forensic Science Division, where he was assigned to the Questioned Document Unit. There, he completed his initial document training under D/Sgt. Todd Welch of the Michigan State Police Bridgeport Laboratory. D/Sgt. Lehman holds Bachelor of Arts degrees from Michigan State University and Siena Heights University. He is an Affiliate Member of the American Society of Questioned Document Examiners and an Associate Member of the Midwestern Association of Forensic Scientists.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Lim, Chin Chin

A Study on the Effectiveness of the Video Spectral Comparator, Thin Layer Chromatography, and Raman Spectroscopy in the Analysis of Ballpoint and Gel Pen Inks Available in Singapore

Abstract: This study evaluated the effectiveness of different instrumental techniques in the analysis of writing inks available in Singapore. In addition, a methodology comprising the different techniques, namely the Video Spectral Comparator (VSC), Thin-Layer Chromatography (TLC) and Raman Spectroscopy, was developed. A total of 120 black, blue, and red ballpoint pen and gel pen inks were selected for the study. The samples were chosen on the basis that they were commonly available pens in Singapore and could be purchased from most local stationery stores. The effectiveness of each technique was evaluated by calculating the discriminating power (DP). When the techniques were combined, the overall DPs ranged from 0.62 to 0.96, higher than the DPs achieved by individual techniques. The limitations of each technique and recommendations to mitigate them were discussed.

Bio: Chin Chin LIM is a Senior Consultant Forensic Scientist with The Forensic Experts Group (TFEG) in Singapore. She graduated from the National University of Singapore with a Master of Science degree in Chemistry. She started her first job as a forensic document examiner and her 22 years of experience in forensic science culminated in a wide range of expertise in several forensic disciplines. She was a member of various expert workgroups such as SWGMAT in North America and the European Fibres Group. She was a member of INTERPOL's Operation Storm and was recently appointed as a working member to monitor the development of ISO standards for forensic science (ISO/TC 272) in Singapore.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Lyter, Albert

Artificial Aging and the Solvent Loss Ratio Method of Ink Dating

Abstract: A common occurrence when dealing with fabricated documents is the use of methodologies which attempt to artificially age the documents, or put another way, try to make the documents look their purported age. This is accomplished by exposing the documents to harsh environmental conditions i.e. heat, light or water, or by altering the appearance of the document by application of foreign substances such as tea or coffee.

The Solvent Loss Ratio Method is an analytical methodology which measures the amount of a semi-volatile solvent normally found in ball pen inks, 2-phenoxyethanol (PE). Since the SLRM includes the application of heat to samples of the ink at issue, it is agreed that the nefarious application of heat to artificially age a document will prevent an accurate determination of the document's age. However, in those instances where a different method is used to artificially age a document it is unsure whether the SLRM will provide an accurate assessment of the document's age.

This work evaluates the usefulness of SLRM in cases where documents have been artificially aged by extended exposure to UV light and by painting of the document with a solution of brewed tea. Six different ball pen ink formulations, 3 blue and 3 black, were exposed to UV light (254 and 365nm) for 18 hours. The same inks were also painted with a strong solution of tea in water. Subsequent analysis of the writings by SLRM in comparison with untreated samples of the same inks resulted in data supporting a conclusion that the ink writings were prepared within the most recent year. A clear indication that the use of these artificial aging methodologies did not prevent the use of SLRM to assess the age of the ink writings.

Bio: Al Lyter has been a forensic chemist specializing in ink and paper analysis for over 42 years. He has an MS in forensic science from George Washington and a Ph.D. in analytical chemistry from UNC Chapel Hill. Al is a certified Diplomate of the American Board of Criminalistics. He is a Fellow of the American Academy of Forensic Sciences and a member of the Mid Atlantic Association of Forensic Scientists and the California Association of Criminalistics.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Naso, Jennifer

(POSTER) Dating Signatures Through a Timeline of Degeneration

Abstract: This is a case study of a request to authenticate signatures based on their purported dates of execution. The authorship of the signatures was not in question, but rather the dates in which they were produced. The case involved a divorce and whether or not certain assets were acquired prior to, or after the marriage. Over a thousand known documents were submitted for comparison purposes, ranging over thirty years. The health of the writer deteriorated over time. A timeline of the known signatures was manufactured to illustrate the gradual decline of the fluidity of the writing and the increase in the presence of tremor. Based on this timeline, a comparison could be made between the questioned signatures and the known signatures. When comparing the questioned signatures to the timeline, I was able to determine an approximate date range of when the signatures may have been executed. In this particular case, the questioned signatures were not consistent with the other signatures executed during those time frames, indicating that the dates of the documents may be disingenuous.

Bio: Jennifer Naso is a Forensic Document Examiner with the firm Riley, Welch, LaPorte & Associates. She earned a Master of Science in Forensic Science from the University of New Haven and completed her two and a half year training program with the United States Secret Service in 2008. Jennifer is certified by the American Board of Forensic Document Examiners.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Negherbon, Robert

Fingerprint Development and Shredded Documents

Abstract: This is an initial look into the effects document shredding may or may not have upon fingerprint development. There may be a need in criminal investigations for a shredded document to be reassembled and tested for the presence of latent prints. For this study, fingerprints were placed on different types of paper and shredded. They were then reassembled and taken to the Latent Print Section for development and evaluation by a latent print examiner. Methods used, results and limitations will be discussed in this presentation.

Bio: Robert Negherbon is a Forensic Document Examiner with the Pennsylvania State Police Harrisburg Crime Laboratory. He earned a Bachelor of Science Degree in Biology from St. Francis University and an M.S. Degree in Microbiology from Thomas Jefferson University. He completed his laboratory's training program in 2008. Rob is a member of the ASQDE and Mid-Atlantic Association of Forensic Scientists.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Olson, Larry

Assembling Multiple Shredded Documents Simultaneously from Packets of “Clones”

Abstract: In 2012, the author proposed a methodology for the manual assembly of shredded paper documents, which he used to reassemble several documents critical to a case of identity theft and the filing of false tax returns. The method boils down to four major steps: Sorting, Arranging, Associating, and Assembling. The initial step involves sorting the shred by paper type/color, ink or printing type/color, and shred direction. After sorting, a pile of shred was found in which the documents had been shredded sideways (transversely) rather than length-wise (longitudinally). At first, this appeared to present an advantage in that whole lines of text could be assembled easily. However, from then on, it was difficult to determine exactly where the assembled clusters originated from on the document, because of the white space that typically occurs between paragraphs or other parts of a document. In addition, this subgroup of shred was found to contain numerous “packets” or “stacks.” These are clusters of shred that may be produced: 1) when a folded document is shredded, or 2) when more than one document is shredded at the same time. For the lack of an official term, the author named the individual fragments within a packet “clones,” because they originated from the same shredding event. It was found to be useful to pay attention to the sequence of clones within a packet, because once the packets were separated and arranged, it became apparent that it was possible to reassemble more than one document at the same time. The author will demonstrate using clones to reassemble multiple documents in two different cases.

Bio: Larry Olson has a BS in Chemistry from the US Naval Academy and a Master of Forensic Science degree from George Washington U. He began his training with the Immigration and Naturalization Service Lab in DC, and completed it at the IRS National Forensic Lab in Chicago, where he has worked since 1985. He is a Diplomat of the ABFDE as well as a member of ASQDE, AAFS, SWAFDE, and is a Past President of MAFS (Midwestern Assn of Forensic Scientists).

2017 ASQDE MEETING – ABSTRACT SUMMARY

Osborne, Niki, William Thompson, Lloyd Cunningham and Jane Lewis

(WORKSHOP) Write or Wrong? Bias, Decision-Making, and the Use of Contextual Information in Forensic Document Examination

Abstract: The use and relevance of contextual information in forensic examinations has been hotly debated in recent years. While task-relevant information can be used to develop the appropriate scientific propositions and assessment, task-irrelevant information may unconsciously bias the examiner's decision-making process and ultimate opinions about the evidence. It is therefore a delicate balancing act to ensure that the examiner does not have too much or too little information to make an appropriate assessment. Using illustrative examples and practical exercises, we will provide a theoretical and practical overview of the role of contextual information in forensic document examinations, from both a psychological and a forensic perspective. We will discuss and seek answers to the following questions to benefit the solo practitioner, larger agencies, and both criminal and civil casework: **Bias:** 1. What is bias? 2. Is it something that we need to worry about? 3. What is the rest of the forensic community doing in response to concerns about bias? **Task-Relevant and Task-Irrelevant Information:** 1. What are task-relevant and task-irrelevant sources of information in forensic document examination? 2. How can we prevent task-irrelevant information from influencing our judgements? 3. What happens if we cannot avoid task-irrelevant information? 4. What does contextual information management look like? **Evidence Assessment, Review, and Presentation:** 1. What is a relevant population? 2. What is an appropriate way to define and report relevant populations? 3. What is the most appropriate way to present source conclusions? 4. How can we develop a meaningful peer review process? 5. What is the most appropriate way to convey our findings to the fact finder?

Bio: Niki Osborne is a human factors researcher, specializing in forensic handwriting examination and bloodstain pattern analysis. She has a PhD from the University of Otago, New Zealand, and is now a Postdoctoral Scholar at the University of California, Irvine.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Polston, Carrie, Williams Mazzella, PhD, Martin Furbach, MS and Patrick Buzzini, PhD

(POSTER) Evaluating Magnetic Flux Measurement as a Screening Tool for Toner Printed Documents

Abstract: In the past, magnetism has been considered a qualitative property to discriminate between electrophotographically printed documents. Recent investigations have been performed to assess the potential for new instrumentation which provides quantitative measurements of magnetic flux. These investigations determined that the instrumentation produces reliable, reproducible results which provide the potential to differentiate between documents produced by different electrophotographic devices. Applicability to casework samples in these preliminary studies was limited due to inability to compare texts with different properties. To develop the instrument's application to casework samples as a screening tool, this study sought to assess whether the magnetic flux measurement can be correlated to toner area, if magnetic flux values remain stable over time, and if there is a way to normalize magnetic flux measurements to account for variation seen in casework samples. The magnetic properties of documents produced by a number of different electrophotographic devices were measured and compared to results obtained for the same samples one year prior. The area for each measurement was determined using image processing software, and the magnetism was plotted as a function of toner area to assess the potential relationship. A representative population was then assessed using the magnetic flux as a function of toner area as a normalizing unit to determine if meaningful variation can be observed. Our results indicate that magnetic flux does remain stable over time and that there is a relationship between toner area and magnetism. The variation of the population distribution was assessed, and though further study investigating the application of a likelihood ratio approach is necessary, it appears that the application of magnetism to casework samples is possible.

Bio: Carrie Polston is a graduate student at Sam Houston State University pursuing her PhD in Forensic Science. She earned her Bachelor of Arts in Biology from Truman State University, and is a current member of AAFS in the Toxicology section.

Dr. Williams Mazzella works as a Forensic Document Examiner at the University of Lausanne in Lausanne, Switzerland. He earned his Master's degree in Forensic Sciences and Criminology from the University of Lausanne in 1988, and earned his Doctor of Philosophy degree in Science from the University of Technology in Sydney in 2008.

Martin Furbach is a graduate student pursuing his PhD in Forensic Sciences and Criminology at the University of Lausanne in Lausanne, Switzerland. He also concurrently works as a Forensic Document Examiner for the University of Lausanne in Lausanne, Switz

Dr. Patrick Buzzini works as an Associate Professor in Forensic Science at Sam Houston State University in Huntsville, Texas. He earned his Bachelor of Science degree in Forensic Science from the University of Lausanne in 2001, and earned his Doctor of Philosophy in Forensic Science from the University of Lausanne in 2007.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Purdy, Dan, Grant Sperry and Joe Parker

(TRAINEE BREAKOUT SESSION) - Dealing with Conflicting Opinions

Abstract: This breakout session will take place on Tuesday, August 29th. The session is for document examiner trainees who are over 6 months into their training program or for qualified document examiners with less than 2 years experience. Trainees or junior examiners who register for this event will be given access to a Dropbox containing reproductions of questioned and specimen signatures pertaining to three problems. Also included with each problem are redacted copies of reports that were previously issued by two experts. In each instance, the conclusions reached by the opposing experts differ to a significant degree. Before the conference, participants are expected to work through the problems as though they are actual cases. Detailed work notes and a forensic report should be prepared for each signature problem. The reports issued by the opposing experts should also be evaluated to determine if the method(s) they employed was(were) appropriate given the circumstances, whether their observations were disclosed objectively and whether those observations fully support the conclusion expressed. During the session, the three problems will be systematically studied and discussed. Instructors will provide information and recommendations that participants will find useful when dealing with cases that involve an opposing expert. **PARTICIPANTS ARE EXPECTED TO BRING THEIR WORK NOTES AND REPORTS TO THIS BREAKOUT SESSION.**

Bio: Dan Purdy is a forensic document examiner with Forensic Document Examination Services Inc. in British Columbia. He earned a Bachelor of Science Degree in mathematics and physics from the University of B.C. and completed a 2-year training problem with the Royal Canadian Mounted Police in 1971. Dan is a member of the ASQDE, the Questioned Document Section of the AAFS, the CSFS, the Chartered Society of Forensic Science and is certified by the ABFDE.

Grant Sperry is a forensic document examiner with Forensic Document Examination Services Inc. in Germantown, TN. He earned a Bachelor of Science Degree from the University of the State of New York (Albany) and completed two-year resident training course in the Examination of Questioned Documents at the U.S. Army Criminal Investigation Laboratory, Ft. Gordon, GA. Grant is a member of the ASQDE, the Questioned Document Section of the AAFS, SAFDE and is certified by the ABFDE.

Joe is a forensic document examiner with Atlanta Forensic Document Examiner Services Inc. in Peachtree City, GA. He earned a Bachelor of Arts Degree in English and Psychology from the Methodist College in Fayetteville, NC and a MSA from Central Mich

2017 ASQDE MEETING – ABSTRACT SUMMARY

Radley, Robert and Ellen Radley

(POSTER) My Text in Your Handwriting - Computer Simulated Handwriting

Abstract: This paper looks at new software designed to create a digital text mimicking an individual's handwriting. The software generates new handwriting from master documents wherein letterforms are segmented (in a similar fashion to Write-On software), adapted and reassembled in a cursive form. We consider the effectiveness of the replication, the idiosyncrasies in the resultant images, the current limitations of a “glyph-centric” approach and the possibilities for the use of the software in the creation of questioned documents.

Bio: Robert Radley is the principal of the Radley Forensic Document Laboratory. He holds the Degrees of Bachelor of Science in Chemistry and Master of Science in Forensic Science. He also holds the Diploma of the Forensic Science Society in Document Examination and is a Chartered Chemist. He is a member of the ASQDE, Academy of Experts (UK), Chartered Society of Forensic Sciences (UK) and Royal Society of Chemistry (UK).

Ellen Radley is a Forensic Document Examiner at the Radley Forensic Document Laboratory. She has earned the degree of Bachelor of Arts (Hons) and two Post Graduate Diplomas in Law. She practiced as a lawyer for 10 years . Ellen joined the laboratory in 2012 and completed her training on a one to one basis under Robert Radley. She is a member of the Academy of Experts (UK) and an Affiliate Member of the Chartered Society of Forensic Sciences (UK).

2017 ASQDE MEETING – ABSTRACT SUMMARY

Riley, Thomas

(POSTER) The Merida Initiative - ISO Accreditation in Mexico

Abstract: This poster will describe the Merida Initiative in Mexico, a joint initiative between the governments of the United States and Mexico. This initiative is to assist government forensic laboratories in Mexico obtain ISO Accreditation. Questioned Documents is a vibrant discipline in Mexico and many laboratories employ individuals in this discipline. The Merida initiative continues to draw on laboratory personnel experienced in ISO accredited laboratories to provide training and accreditation preparation, assessment and support. This poster will describe the experience of providing this type of support and various aspects of being involved in this initiative.

Bio: Thomas P. Riley is a Forensic Document Examiner with Riley Welch LaPorte & Associates Forensic Laboratories. He earned a Bachelor of Science Degree in Criminal Justice from Florida International University and completed the Michigan State Police Questioned Document Training Program in 1993. Thomas is a member of the American Society of Questioned Document Examiners, AAFS and is certified by the ABFDE.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Rottes, Tanja, Rolf Fauser, Koen Herlaar, Frederic Herry, Martina Lunakova,
Agnes Karoly and Vitalijs Freidenfelds

Sharing Databases for the Future: EU sponsored ENFSI/EDEWG Database Platform

Abstract: The classification and identification of printers and writing instruments is a difficult task as there are a great number of machines and pens available on the market and each year new instruments are introduced. Furthermore, the analysis methods applicable for the examination of the printed and written documents are numerous. Therefore, a variety of different techniques, classification systems and databases are available in the European Document Experts Working Group (EDEWG) at present. Since it is impossible for one laboratory to create and maintain databases in every area (for example: different chemical analysis methods for writing inks, inkjet inks and toner / ink dating of ballpoint pen inks / non-destructive examination methods of printing products / measurement of ink dot sizes /inkjet print head dimensions etc.), an ENFSI/EDEWG project was set-up with funding by the EU to build a database platform for sharing different databases online. Within a 2-year period, the goal of the project is to combine the various information collections, make them accessible online and ensure their preservation for the future. This presentation shows the status of the project that in its final version should allow better evaluation of evidence in questioned documents examination.

Bio: From 1995 to 1999 Ms. Rottes studied Chemistry at the University of Applied Science (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 BKA Germany in Wiesbaden and is working as an expert in the field of document examination with specialisation in ink analysis and printers at the LKA NRW since that time. From 2004 to 2008 as well as from 2010 to the present Ms. Rottes is a member of the Steering Committee of the European Document Experts Working Group.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Ryan, Dennis

The Effect of the Paper Substrate on the Visualization of IR Luminescence in Writing Inks

Abstract: How does the paper substrate effect the visualization of infrared luminescence in ink? Does a 98 brightness paper versus a 92 brightness paper yield different results? Can you really compare inks across different paper substrates? We studied approximately 20 inks that have some luminescent properties. We looked at these inks over a wide array of different paper substrates, predominately white papers. The criteria used was the type of paper: ink jet, laser copy, recycled etc... A preliminary look at colored papers was also conducted.

Bio: Dennis Ryan is a Forensic Document Examiner with Applied Forensics LLC. He earned a BA from Long Island University in Criminal Justice and an MBA from Hofstra University. Dennis completed his 2 year training in 1990. He is member of the ASQDE, the QD section of AAFS and is certified by ABFDE

2017 ASQDE MEETING – ABSTRACT SUMMARY

Schoenberger, Katherine

A Convoluted Case: 1 Known Exemplar, 136 Questioned Documents

Abstract: Given a large number of questioned signatures and a limited number of known exemplars, is it possible to establish a range of natural variation from the questioned sets and determine whether or not one known signature fits? This is a case exploring an examination and comparison of a multitude of questioned documents with only a small number of known exemplars.

Bio: Katherine Schoenberger (“show-in-burger”) has a private practice in the Cleveland, Ohio area. She has been a Forensic Document Examiner since 1999. She received her training from the Mississippi Crime Laboratory. Katherine is a member of the ASQDE, a Diplomate and new Director of the ABFDE. She actively seeks out opportunities to embarrass her 14-year-old daughter and has been found at her daughter’s middle school espousing the brilliance and excitement of Forensic Document Examination.

2017 ASQDE MEETING – ABSTRACT SUMMARY

2017 ASQDE MEETING – ABSTRACT SUMMARY

Sugawara, Shigeru, Akane Ishida, Yoshihiko Nakayama, Hideya Taniguchi, and Ichiro Ishimaru

(POSTER) Preliminary Study of Wide-Field Near-Infrared (1000–2350 nm) Hyperspectral Imaging for Document Examination

Abstract: The conventional way of examining questioned documents and writings of obliterated writings is by using visible/near-infrared spectroscopic or fluorescent imaging in the wavelength range of 0.4 to 1.0 μm . However, some obliterated writings cannot be detected by standard methodology. Furthermore it can be difficult to authenticate and group samples of questioned documents because the sample materials have similar spectra. In this study, we verified whether samples that could not be detected by conventional methods could be distinguished by near-infrared hyperspectral imaging in the wavelength range of 1.0 to 2.5 μm . In addition, we developed a near-infrared hyperspectral imaging system that can quickly measure samples having an area of 10 cm^2 . We verified whether this system can measure questioned documents accurately and quickly. In this study, we created samples by using black, red, and blue marker pens to write letters on A4-sized paper. In addition, we painted the paper with toner, oil paints, adhesives. The system we developed is a combination of a camera, with a semiconductor element, and an imaging interferometer. Fourier transform spectroscopy with an imaging interferometer has higher light utilization efficiency than spectroscopy with a diffraction grating or a band pass filter; this results in high signal-to-noise ratio measurements. A halogen lamp was used as a light source. The measurement time was several seconds. We examined whether there were combinations of materials that could be detected by near-infrared hyperspectral imaging but not by conventional methods. As our system measures a wide area of 10 cm^2 in a short time, the amount of incident light on the sample is not spatially uniform. Therefore, we also verified that the spectrum could be measured accurately regardless of the measurement position on the sample. We also verified that accurate measurements are possible using the spectrum of paper as a background.

Bio: Shigeru Sugawara is a Forensic Document Examiner with National Research Institute of Police Science in Japan. He earned a Doctor of Engineering Degree from Tsukuba University, and completed his laboratory's 18-year career. Shigeru is a member of the Japanese Association of Forensic Science and Technology.

Akane Ishida, Yoshihiko Nakayama, Hideya Taniguchi are with Aoi Electronics Co.,LTD. Ichiro Ishimaru is from Kagawa University.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Tanaka, Tobin

(POSTER) Document Examination Training Survey

Abstract: As the author is involved in the initial training of document examiners and professional development of trained document examiners, it was thought to be beneficial to seek advice from colleagues around the world. To the extent possible, input from those working in a variety of private and public entities was sought. Survey questions to document examiners and persons in training to be document examiners were sent worldwide. The questions included topics such as post-secondary (tertiary) education, training outside of the laboratory, length of training, other continuing education, mandate of laboratory where employed and topics within the training program. The survey was intended to elicit information on training both in the initial training to become a document examiner and ongoing training during the course of a career. For trained examiners input on topics that were thought that should have been learned earlier was sought. With this information some insight into the similarity and diversity of the training and career education of those in the profession was gleaned. Potentially this may provide some guidance for anyone involved with the training and education of document examiners.

Bio: Tobin Tanaka is a forensic document examiner with the Canada Border Services Agency. He is a member of the American Society of Questioned Document Examiners, the Australasian Society of Forensic Document Examiners, Inc, the Questioned Document section of the American Academy of Forensic Science (AAFS), the Chartered Society of Forensic Science and the Canadian Society of Forensic Science. He is certified by the American Board of Forensic Document Examiners.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Tolliver, Diane

An Indiana Angel of Mercy as an LPN in the Critical Care Unit

Abstract: Many patients in the Intensive Care Unit of the Vermillion County Hospital were seemingly improving when they would take a sudden turn for the worse, and die. Orville Lynn Majors, a Licensed Practical Nurse, was on hand for a large percentage of these mysterious deaths. Prior to the time when Majors began employment at the hospital, an average of around 26 patients died annually. After Majors started working at the facility, however, this rate skyrocketed to more than 100 per year, with nearly one out of every three patients admitted to the hospital dying. This paper will present an overview of the case and how forensic document examination helped play a role in the collection of evidence.

Bio: Diane Tolliver is retired from the Indiana State Police Laboratory Division, Forensic Document Unit in March 2011, after nearly 36 years as an FDE. She maintains Tolliver Forensic Services but accepts only 1-2 cases per year. Diane maintains her certification status with the ABFDE. She is a 1975 graduate from Indiana State University (with a Bachelors of Science) and Indiana University (with a Masters in Public Administration). Diane has served as the ASQDE secretary, Vice President, and President.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Vastrick, Thomas, Ellen Schuetzner, Kelsey Osborn

Measuring the Frequency Occurrence of Handwritten Numerals

Abstract: The premise of this study was to take a valid population sampling of numerals and assess what percentage of the population residing or visiting in the United States at any given time would utilize any one of 25 characteristics within the numerals one (1) through nine (9). This work is an expansion of a frequency occurrence study conducted over the past several years and published in the Journal of Forensic Sciences in January 2017. Frequency occurrence proportions will be provided for the 25 characteristics will be provided as part of the presentation along with any analyses that are deemed significant as a result of this ongoing study.

Bio: BS Degree in Forensic Science from California State University at Sacramento. Received two-year, in-residence training with US Postal Inspection Service Crime Laboratory in Washington, DC. D-ABFDE. Board of Directors AAFS.

Ellen Schuetzner, D-ABFDE, Fellow AAFS, Trained by Maureen Casey Owens at Chicago Police Department. In private practice.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Waltke, Heather, Gerald LaPorte, Lisa Hanson and Melissa Taylor

(WORKSHOP) Forensic Science Research: Your Mission to Propose, Innovate, and Collaborate

Abstract: Rigorous research and development is the foundation of accurate, reliable, and valid methods used in forensic science. It is essential that the forensic science community address gaps that may exist in technology assessment, validation of methods, and to manage and mitigate errors in reporting and testimony. It is critical that the community embrace thoughtful research design as well as an understanding of the practical limitations of subsequent data interpretation and communication. Proposing research and applying for grant funding, however, can be a challenge, and the process may seem daunting; but, there are numerous mechanisms in which research can be approached, including both at the practitioner level in an operational laboratory and/or through academic or other institutions. The National Institute of Justice (NIJ), the research, development and evaluation agency of the US Department of Justice, will present an interactive workshop to provide a forum to share ideas about addressing research gaps, strengthening grant proposals, involving student researchers, creating partnerships, and considering research that can be integrated into an operational laboratory. There will also be an overview of the NIJ/NIST collaborative Expert Working Group on Human Factors in Handwriting Examination and the subsequent upcoming products that will serve as an additional resource.

Bio: Heather Waltke, MFS, MPH, is the Associate Director for the Office of Investigative and Forensic Sciences at the National Institute of Justice (NIJ), the research, development and evaluation agency of the US Department of Justice. She currently supervises programs related to research and development and laboratory capacity enhancement and efficiency. Prior to accepting the position at DOJ, Ms. Waltke was a forensic examiner at the US Treasury Department. Since moving to the NIJ, she has been committed to the NIJ's efforts concerning forensic evidence processing, including both research- and policy-related programs and initiatives. Ms. Waltke received a Master of Forensic Science and Master of Public Health from George Washington University. She is a member of the Expert Working Group on Human Factors in Handwriting Examination.

Mr. LaPorte is the Director in the Office of Investigative and Forensic Sciences at the National Institute of Justice (NIJ), where their mission is to improve the quality and practice of forensic science by supporting research, development, evaluation, and information exchange for the criminal justice community. Mr. LaPorte received his Master of Science in Forensic Science from the University of Alabama at Birmingham. Before joining NIJ, Mr. LaPorte was the Chief Research Forensic Chemist for the United States Secret Service. He is a member of various organizations including the American Academy of Forensic Sciences, Mid-Atlantic Association of Forensic Scientists, American Society of Questioned Document Examiners, and the American Bar Association. Mr. LaPorte served on the National Commission on Forensic Science until its close in 2017.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Melissa Taylor is a senior forensic science research manager within the Special Programs Office of the U.S. Department of Commerce's National Institute of Standards and Technology. Her work within the Forensic Science Program focuses primarily on impression and pattern evidence-related research, improving forensic science management practices, and integrating human-factors principles into forensic sciences. Ms. Taylor is the study director for the Expert Working Group on Human Factors in Handwriting Analysis. She is a member of the American Society for Quality, INTERPOL AFIS Expert Working Group, and International Association of Identification. She previously served on the US Department of Justice National Commission on Forensic Science Human Factors Subcommittee and as co-chair of the White House Subcommittee on Forensic Sciences Latent Print AFIS Interoperability Task Force.

2017 ASQDE MEETING – ABSTRACT SUMMARY

Yang, Chiew Yung and Chin Chin Lim

Chinese Handwriting and Signatures Workshop: Hanzi through the Eyes of the Forensic Document Examiner

Abstract: This is a half-day workshop for Forensic Document Examiners who may not be familiar with Chinese handwriting and its examination. Participants will be introduced to the world of Chinese handwriting by catching a glimpse into the historical development of Chinese writing systems and understanding how Chinese characters are constructed. This would be followed by a hands-on session where participants examine Chinese handwriting and signature practice samples. They will be encouraged to share their findings during the discussion. Chin Chin and CY will also highlight key learning points and share their experiences on the examination of Chinese handwriting compared with that of English handwriting.

Bio: Chiew Yung Yang (CY) and Chin Chin Lim are both forensic scientists with The Forensic Experts Group (TFEG) in Singapore. CY has a Bachelor of Science (Honours) degree in Chemistry from the University of Salford in the UK and a Master of Forensic Sciences Administration degree, Questioned Documents Track, from Oklahoma State University, USA. She started her first job as a chemist, and has about 14 years of experience in forensic document examination, including the examination of English and Chinese handwriting. She became a corresponding member of the ASQDE in 2011.

Chin Chin graduated from the National University of Singapore (NUS) with a Master of Science degree in Chemistry. She started her first job as a forensic document examiner. Her 22 years of experience in forensic science culminated in a wide range of expertise in several forensic disciplines. She was a member of various expert workgroups such as SWGMAT in North America and the European Fibres Group. She was a member of INTERPOL's Operation Storm and was recently appointed as a working member to monitor the development of ISO standards for forensic science (ISO/TC 272) in Singapore.

Chin Chin and CY were the two invited speakers at a seminar in Thailand in 2016 on the electrostatic detection of handwriting impressions and the value of such evidence. Together with the rest of their team at TFEG, they have also been providing seminars