Professional Review and Commentary[a]

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[a] The views expressed are those of the authors and do not necessarily reflect the view, the position, or the policy of *Forensic Science Review* or members of its editorial board.

Forensic Science Review's Professional Review and Commentary section highlights contemporary issues and events in the profession of forensic science. To contribute updates or commentary or to recommend books for review, please contact Mike Baylor (mbaylor@nc.rr.com), Jeff Teitelbaum (Jeff.Teitelbaum@wsp.wa.gov), or Ray Liu (rayliu@uab.edu).

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FORENSIC SCIENCE NEWS AROUND THE WORLD

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United States of America

3-D Printed Guns, Update — *Worldwide*

The types of operable guns that can now be made at home using 3-D printers include AK-47s, Glocks, Berettas, Rugers, and various other semiautomatic weapons. With 3-D printers costing as little as $250, these guns are incredibly inexpensive to make. Using fully realized design plans that are freely available on the Internet, many guns can be made for less than $10. Particularly worrisome to law enforcement personnel is the fact that these guns are untraceable, since they have never been registered and carry no serial number, and they are virtually undetectable at airport or other types of security detectors. One of the shortcomings of guns made from printed plastic is their tendency to crack or even shatter from the explosive impact of firing a bullet. Many of these guns, in fact, are capable of firing only a single shot before they are rendered useless. Firearms enthusiasts are now experimenting with new types of ammunition that could extend the lifespan of the guns. Bullets are housed in very thick steel shells that absorb the bulk of the explosion without transferring it on to the gun itself, and early test results are proving successful.

Internet Drug Commerce After Silk Road — *Worldwide*

Last year, when the US government shut down Silk Road, the underground drug and firearms website, many in law enforcement believed that this would act as a deterrent to other black-market websites. Quite the contrary, hundreds of new sites have sprung up and are using technology in even more sophisticated ways to protect their anonymity and to thrive in the so-called "darknet". The FBI, in conjunction with other law enforcement agencies worldwide, is attempting to raid and close the sites as quickly as possible. One of the closures was the Silk Road 2 site, which came online just after the original Silk Road was seized. Even though Silk Road 2 had been operating for less than a year, the site was averaging over $8 million in monthly sales, and, like all the illicit drug sites, used bitcoins as the only accepted currency. Agora, another website still online, currently lists over 16,000 items for sale, most of them illegal. Among the items listed: fake identity documents, credit cards, counterfeit currency, firearms, ammunition, and drugs of every category and potency.

3-D Printed Designer Drugs? — *Worldwide*

As if 3-D printed guns weren't enough of a concern to those in law enforcement, two chemistry research laboratories have announced prototypes of a 3-D printer that can produce highly customized and highly sophisticated drug formulas. Chemists at Glasgow University and Louisiana Tech University imagine a future where patients will be able to purchase and download a digital prescription, purchase "chemical ink", and proceed to print out the drug at home on a 3-D printer. The molecular 3-D printers that they have developed can create chemical compounds rather than the 3-dimensional objects that are currently in vogue.

Advocates of this technology cite the many potential benefits of drug printing, such as refining a drug to meet the specific needs of a patient, but the obvious concern is that the printers could be used to create designer drugs at home, drugs that could be of any type and any potency. With the possibility of printing illegal drugs at home, probably at a fraction of the cost of purchasing them on the open market, perhaps the government will ultimately resort to something akin to the legal marijuana model where the state sells a formerly illegal product that is now produced according to strict guidelines.

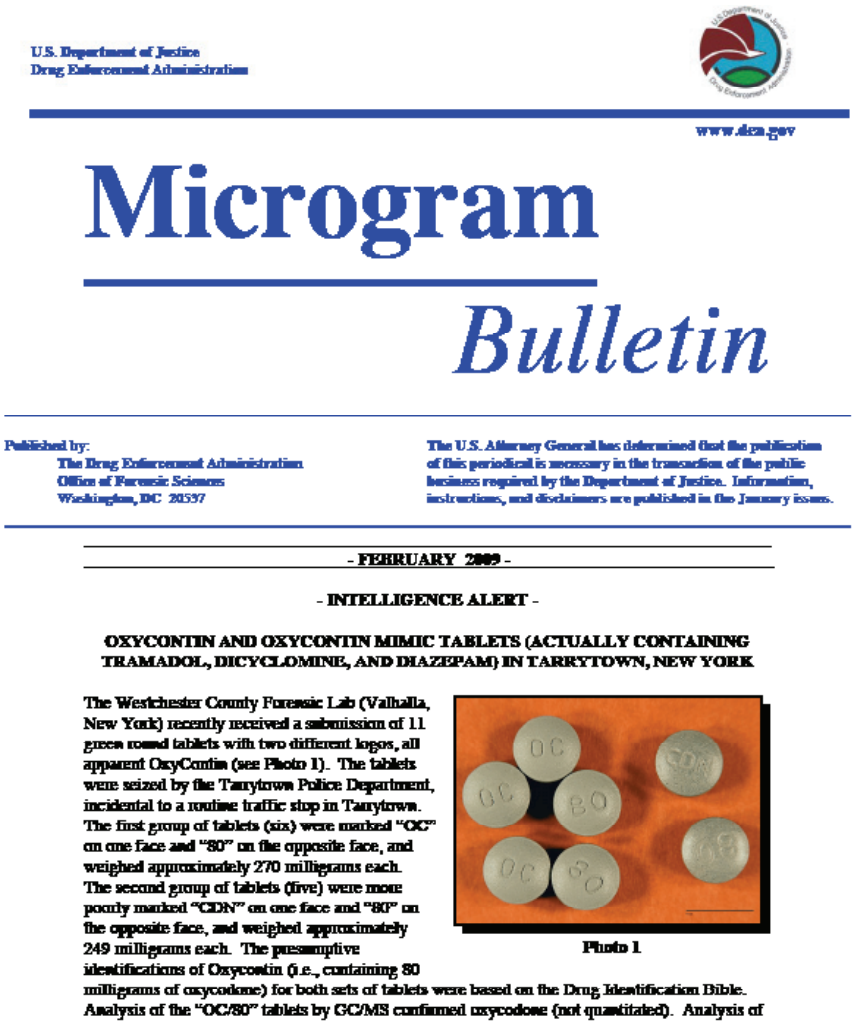
Microgram Bulletin — *United States*

A publication that has been a valuable resource to forensic chemists for many decades has been moved to a "restricted" status by the US Drug Enforcement Administration. A version of the newsletter, titled the Microgram Bulletin LE, will continue to be published, but it will not be publicly accessible.

The first issue of the newsletter, then called the Microgram, came out in 1967, a publication of the Bureau of Drug Abuse Control (which became the Bureau of Narcotics and Dangerous Drugs, which became the Drug Enforcement Administration). The newsletter was retitled the Microgram Bulletin in 2002 (**Figure 1**), and, over the years, it has presented methods for synthesizing drugs, updates on clandestine laboratories, techniques used for smuggling controlled substances, alerts about new drugs, literature references, drug scheduling actions, and many other items of topical interest. It is hoped that the Microgram Bulletin will ultimately be restored to a public access status.

FBI DNA Quality Assurance Standards Include Rapid DNA Analysis — *United States*

The FBI has updated its DNA databasing standards to include an Addendum to the Quality Assurance Standards (QAS) for DNA Databasing Laboratories Performing Rapid DNA Analysis and Modified Rapid DNA Analysis Using Rapid DNA Platforms. Rapid DNA analyses are



U.S. Department of Justice
Drug Enforcement Administration

www.dea.gov

Microgram Bulletin

Published by:
The Drug Enforcement Administration
Office of Forensic Sciences
Washington, DC 20537

The U.S. Attorney General has determined that the publication of this periodical is necessary in the transaction of the public business required by the Department of Justice. Information, instructions, and disclaimers are published in the January issues.

- FEBRUARY 2009 -

- INTELLIGENCE ALERT -

OXYCONTIN AND OXYCONTIN MIMIC TABLETS (ACTUALLY CONTAINING TRAMADOL, DICYCLOMINE, AND DIAZEPAM) IN TARRYTOWN, NEW YORK

The Westchester County Forensic Lab (Valhalla, New York) recently received a submission of 11 green round tablets with two different logos, all apparent OxyContin (see Photo 1). The tablets were seized by the Tarrytown Police Department, incidental to a routine traffic stop in Tarrytown. The first group of tablets (six) were marked "OC" on one face and "80" on the opposite face, and weighed approximately 270 milligrams each. The second group of tablets (five) were more poorly marked "CDN" on one face and "80" on the opposite face, and weighed approximately 249 milligrams each. The presumptive identifications of Oxycontin (i.e., containing 80 milligrams of oxycodone) for both sets of tablets were based on the Drug Identification Bible. Analysis of the "OC/80" tablets by GC/MS confirmed oxycodone (not quantitated). Analysis of

Photo 1

Figure 1. Cover of February 2009 issue of *Microgram*.

being used or being implemented in numerous local and regional crime laboratories across the nation to decrease the turnaround time for obtaining DNA results for law enforcement agencies.

Louis Grever, former executive assistant director of the Science and Technology Branch of the FBI, commented, "This expansion of the QAS enables improved productivity in forensic laboratories, which can aid in the reduction of the DNA testing backlogs that have been the focus of concern for law enforcement, legislators, and concerned citizens for some time now. It is an important milestone as we enable the use of rapid DNA analysis in ways that are actionable for law enforcement in our local communities."

The new addendum details the requirements and standards that accredited laboratories performing Rapid DNA analysis or modified Rapid DNA analysis must comply with in order for those results to be considered for submission to the Combined DNA Index System (CODIS). Laboratory Checklists and Auditing documents are available to ensure that the participating laboratories comply with the Quality Assurance Standards. The newly developed quality assurance standards went into effect on December 1, 2014. Laboratories may now be able to purchase Rapid DNA technology with Department of Justice grant funding for the allowable purposes outlined by the QAS.

NIST Report Details Dynamics of Deadly Chicago House Fire — *United States*

A new National Institute of Standards and Technology (NIST) computer-modeling study of a 2012 Chicago house fire reveals the conditions that unleashed a surge of searing gases, leading to the death of a veteran firefighter.

NIST examined the fire dynamics of the incident at the request of the National Institute for Occupational Safety and Health (NIOSH) and the Chicago Fire Department. Simulations conducted with NIST's Fire Dynamics Simulator examined the fire's temperature and pressure at various locations and the resulting flow path. With the agency's Smokeview visualization software, NIST

researchers also developed a graphical representation of the fire's behavior and the conditions that firefighters likely experienced during the course of their interior operations.

The simulation shows that fire in a covered back porch caused a closed steel-faced, wood-framed door to crumble, releasing pressure and causing hot gases to pour into the adjoining hallway where the victim and another firefighter were advancing a fire hose. The coincidental timing of the responders' "interior attack" and the door's failure proved to be deadly. In less than 5 seconds, the flow of gases caused the hallway temperature to soar, from about 60 °C (140 °F) to at least 260 °C (500 °F), the study found.

The victim, a 54-year-old captain, was overwhelmed by the rush of fire gases. He was removed to the exterior, revived by paramedics, and transported to a hospital, where he died.

The study is published as a NIST report (NIST Technical Note 1838) as well as a video summary. These research outputs "provide a clear start-to-finish analysis of a tragic, real-life fire event," commented Donald Hroma, district chief in the Safety Division of the Chicago Fire Department. "They afford a very useful perspective. The Chicago Fire Department and others across the country will use these tools in training and to inform decisions on how to improve the ways we approach and attack fires."

Since 1999, NIOSH has issued reports on 15 fires in which changes in flow paths have resulted in 17 "line-of-duty" deaths of firefighters, in addition to civilian deaths and injuries to responders. Failure of a door or window, collapse of a ceiling, and uncoordinated ventilation during a firefighting operation are among the variety of factors that can rapidly change a fire's flow path.

Including the Chicago tragedy, NIST has used its Fire Dynamics Simulator to study six fires that have resulted in firefighter deaths. Insights into fire behavior and thermal conditions gleaned from these studies have helped to shape research aimed at improving the safety and effectiveness of firefighters. Recent NIST research, conducted with Underwriters Laboratories, several fire departments, and other organizations, demonstrates that applying water from the exterior of a burning structure — before attacking the fire from the inside — can reduce the potential for high-speed flows of hot gases to develop and ignite. (Source: National Institute of Standards and Technology)

COMMENTARY/UPDATE
— NIST Forensic Science Research Update —

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Measurement technology has much to offer when it comes to making a positive contribution to the scientific basis for many forensic science techniques. Recent research results from the US National Institute of Standards and Technology (NIST) are a great example. Over the past five years, NIST has channeled increased resources into forensic science, partly to address concerns about the science underlying many forensic analyses.

Over the past few months, NIST researchers have published a variety of journal articles that hold potential for improving accuracy in forensic science. They have also issued reports, held conferences and training seminars, and established new committees that promise to benefit the practice of forensic science. The following few paragraphs highlight several of these contributions.

Technology Advancement and Application

Evidence Management. Retailers use radio frequency identification (RFID) to track inventory efficiently. Highway managers use it to quickly collect tolls from motorists. Could forensic evidence managers use RFID to improve how they manage and track evidence? A new report from NIST suggests that they can.

NIST recently published *RFID Technology in Forensic Evidence Management: An Assessment of Barriers, Benefits, and Costs*. The report is the result of a NIST-funded study on automated identification technology. The Technical Working Group on Biological Evidence Preservation, co-sponsored by NIST and the US National Institute of Justice, identified the need for and requested the study.

The report describes in depth the types of RFID systems that are available (passive, active, and battery-assisted), price ranges and components necessary for a complete system, and how RFID systems compare to traditional tracking technologies like barcoding. The practical question that agencies must consider is whether the new technology can produce measurable benefits and a positive return on the funds invested in a new system. The NIST report estimates that RFID systems can pay back their initial set-up cost in about two years. It is available on the NIST forensic science website at *www.nist.gov/forensics/evidence-management.cfm*.

3D Surface Mapping. The technology for matching a 3-dimensional footprint from a crime scene has not changed much in decades. Technicians often make a physical cast of the footprint impression. Mapping a footprint found in soil with lasers could potentially save time and improve accuracy. NIST researchers published a paper last fall on a new scanning imaging system they say could be applied to forensic footprint profiling.

The paper, published in *Optics Express* in October 2014, explains that the system is capable of scanning 3-dimensional images at distances of up to 10.5 m with accuracy within a micrometer and precision within 10 µm.

The system has wide dynamic range, enabling precise 3D mapping of targets with varied surface types and reflective properties (*see* **Figure 2**). NIST researchers demonstrated the range by scanning footprints in soil, vegetation such as cactus (imaging individual spines), and complex mechanical devices such as a piston for a motorcycle. Read more about the research at *www.nist.gov/pml/div686/20141007_ladar.cfm*.

Cloud Computing Forensics. The NIST Cloud Computing Forensic Science Working Group is reviewing public comments on a draft report, *NIST Cloud Computing Forensic Science Challenges*. The draft was issued for public review and comment in June 2014.

The draft report summarizes 65 challenges that cloud computing poses to forensic science investigators who uncover, gather, examine, and interpret digital evidence to help solve crimes. The NIST Cloud Computing Forensic Science Working Group is an international body of cloud and digital forensic experts from industry, government, and academia.

Through the report, the working group aims to initiate a dialogue on forensic science concerns in cloud computing ecosystems. "The long-term goal of this effort," explains NIST's Martin Herman, co-chair of the working group, "is to build a deeper understanding of, and consensus on, the high-priority challenges so that the public and private sectors can collaborate on effective responses."

Cloud computing is revolutionizing how digital data are stored, processed, and transmitted. It enables convenient, on-demand network access to a shared pool of configurable computing resources, including servers, storage, and applications. Benefits include cost savings, convenience, and greater flexibility in how businesses and other consumers employ information technology.

The characteristics that make this new technology so attractive also create challenges for forensic investigators who must track down evidence in the ever-changing, elastic, on-demand, self-provisioning cloud computing environments. Even if they seize a tablet or laptop computer at a crime scene, digital crime fighters could come up empty-handed if these devices are linked to pooled resources in the cloud.

Technical challenges — the focus of the draft report — abound, but almost all intersect with legal and organizational issues. The 65 challenges that the working group identified are divided among nine categories. These include architecture, data collection, analysis, standards, training, and "anti-forensics" such as data hiding and malware. To learn more about cloud computing at NIST and to see the draft publications, go to *http://www.nist.gov/itl/itl-cloud-computing-forensic-science.cfm*.

Center, Committee, Symposium, and Webinar

Forensic Science Center of Excellence. NIST is in the process of setting up a new Forensic Science Center of Excellence. The center's mission will be to establish a firm scientific foundation for the analytic techniques used in two important branches of forensic science, pattern evidence and digital evidence.

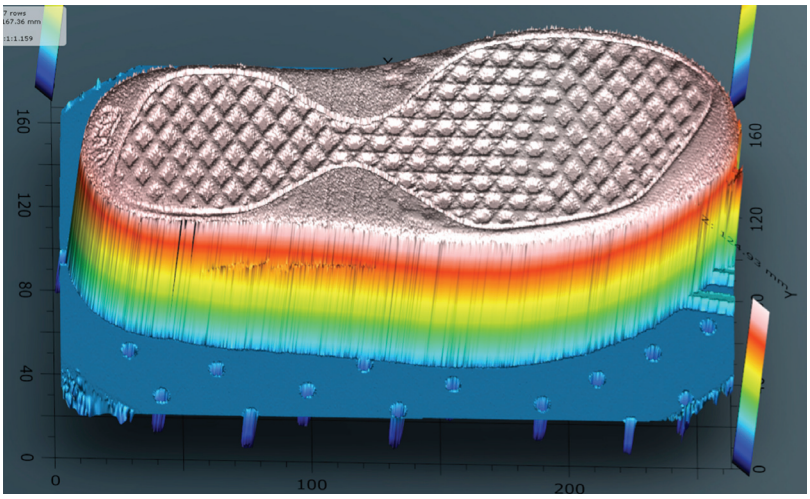

Figure 2. Detailed image of a shoe sole as mapped by NIST's 3D laser detection and ranging (LADAR) system. (Photo courtesy of National Institute of Standards and Technology.)

The planned center will work on scientific advances in probabilistic methods and information technology tools, as well as the necessary infrastructure to educate and train forensic science practitioners in using the new methods. The center will help expand NIST's expertise in the field and promote interactions among NIST, academia, and various stakeholders in the forensic science community.

The application deadline for US academic institutions and nonprofit organizations interested in funding to host the center was Dec. 11, 2014. The earliest anticipated start date for awards is March 2015. For more information, please see *www.nist.gov/coe/forensics/index.cfm*.

Organization of Scientific Area Committees. NIST's OSAC is moving forward having made more than 500 appointments to various committees and subcommittees by the end of 2014. The OSAC is working to develop discipline-specific standards of practice to improve quality and consistency in forensic science analyses.

OSAC members were chosen from more than 1,500 applicants. Most of the members, 57%, are forensic science practitioners. About 20% are researchers, and 10% are educators and trainers. The remainder is split among R&D technology partners, quality assurance managers, attorneys, and judges.

Federal employees make up 27% of OSAC, while state and local government employees make up 18% and 19%, respectively. OSAC members come from every state with the exception of North Dakota. OSAC subcommittees will meet in person for the first time in early 2015. To see the latest OSAC updates, go to *www.nist.gov/forensics/osac*.

Forensics@NIST Symposium. NIST held its third Forensics@NIST symposium in December 2014. A popular meeting to highlight NIST forensic science research, Forensics@NIST is held about every two years and is a combination of technical presentations, tours, and a poster session. This year's keynote address, "Are Judges Losing Confidence in Forensic Science?" was given by the honorable Judge Jed S. Rakoff, who serves as a US District judge for the Southern District of New York and an adjunct professor at Columbia Law School.

The technical program, which spanned the two days, included the following presentations:

- Overview to Computer Forensics and Forensic Biometrics;
- National Software Reference Library (NSRL);
- NSRL Next Generation — Diskprinting;
- Computer Forensic Tool Testing (CFTT);
- CFTT — Mobile Forensics;
- CFTT — Federated Testing;
- Biometrics Overview;
- Latent Fingerprints;
- Introduction to Forensic Genetics;
- Update in NIST SRM 2391c – PCR-based DNA Profile Testing;
- Complex DNA Mixture Interpretation;
- Rapid DNA Typing and PCR Protocols;
- Typing SNPs with Next-Generation Sequencing;
- Sequencing SNRs: Variation and Nomenclature;
- Congruent Matching Cells (CMC) — Theory and Application in Firearm and Evidence Identification;
- Estimating Error Rates for Image-Related Forensic Evidence Identification;
- Objective 2D and 3D Analysis of Consecutively Manufactured Tools;
- Development of a Ballistic Toolmark Research Database;
- Advancements in Polymer Bullet Replication Techniques;
- Introduction to Statistical Measurements;
- Decisions in the Analysis of Low-Template DNA; and
- Statistical Friction Ridge Analysis (*see* **Figure 3**).

Tours during the symposium showcased NIST's forensic research facilities for ballistics and body armor testing, national X-ray standards for bulk-explosives detection, mobile platforms/devices for fingerprints and latent prints, robotic intelligence systems, the NIST SPHERE (simulated photo degradation by high-energy radiant exposure) to mimic environmental exposure, the NIST Center for Neutron Research, the trace contraband detection, and the NIST Museum. A link to the archived webcast is available on this webpage: *www.nist.gov/forensics/forensics-at-nist-2014.cfm*.

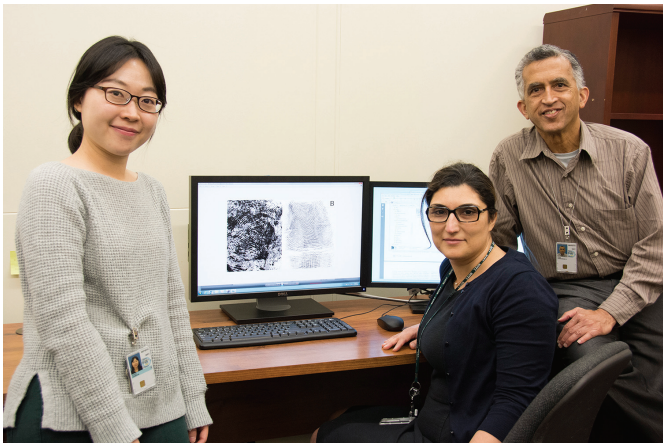

Figure 3. NIST's Soweon Yoon, Elham Tabassi, and Hari Iyer presented "Statistical Friction Ridge Analysis: Algorithms for Matching Minutiae Configurations and Evaluating Likelihood Ratios". The project is aimed at developing statistical methods for quantitating the uncertainty associated with claims of exact match between latent fingerprints obtained at crime scenes and reference prints. The approach, underlying theoretical rationale, and performance of the algorithms and likelihood ratios on real data were discussed in the presentation. (Photo courtesy of National Institute of Standards and Technology.)

DNA Analyst Webinars. The NIST Forensic Science Program held a two-part NIST DNA Analyst Webinar Series: Probabilistic Genotyping and Software Programs. During each webinar, forensic DNA experts from local, national, and international agencies gave presentations to address challenges in interpreting DNA mixtures. Forensic laboratories are increasingly analyzing samples with low levels of DNA such as evidence from burglaries and other property crimes.

The webinars were intended for anyone interested in probabilistic genotyping software packages to aid in the evaluation of mixed DNA profiles. Part 1, originally webcast on May 28, 2014, is online at *www.nist.gov/forensics/nist-dna-analyst-webinar-series-pt1.cfm*.

Part 2, webcast on Sept. 18, 2014, is online at *www.nist.gov/forensics/dna-analyst-webinar-probabilistic-genotyping-software-programs.cfm*.

NIST Forensic Science News Alerts

Interested individuals can sign up to receive NIST forensic science news alerts by going to www.nist.gov/forensics and enter their e-mail address in the shaded sign-up box on the left side of the page. Visit the NIST forensic science newsroom at *www.nist.gov/forensics/newsroom.cfm*.

FORENSIC SCIENCE EDUCATIONAL PROGRAMS — North America

In recent years, forensic science has been the subject of much public attention. It has also attracted the interest of higher educational institutions at various levels. The number of forensic science educational programs in North America has increased very significantly in the last two decades. These programs exist in a variety of academic formats. For example, some natural science departments may simply offer courses tailored to students interested in forensic applications; while other institutions may structure separate forensic science departments or programs — often with a number of the faculty members holding joint appointments with other departments.

A complete listing of all forms of forensic science educational programs in North America would require at least a comprehensive and well-planned survey. As a first attempt, this report summarizes those programs that have gained accreditation, administered by the Forensic Science Education Programs Accreditation Commission (FEPAC; *fepac-edu.org*), as updated on October 29, 2014.

Table 1. Accredited forensic science educational programs in North America

Institution; program's housing unit; city, state	Information of the program director	Program emphasis	Degree[a] offered
University of Alabama at Birmingham Department of Justice Sciences Birmingham, AL	E. A. Gardner eagard@uab.edu (205) 934-0668	Forensic science	M.S.
Albany State University College of Sciences and Health Professions Albany, GA	Z. Oommen zachariah.oommen@asurams.edu (229) 430-5079	Forensic science	B.S.
University at Albany (SUNY) Department of Chemistry Albany, NY	J. R. E. Shepard jshepard@albany.edu (518) 442-4447	Forensic chemistry	B.S.
Arcadia University College of Arts & Sciences Glenside, PA	K. S. Scott scottk@arcadia.edu (215) 517-2675	Forensic science	M.S.
Boston University School of Medicine Department of Anatomy & Neurobiology Boston, MA	R. W. Cotton rwcotton@bu.edu (617) 638-1950	Biomedical forensic science	M.S.
Buffalo State University (SUNY) Department of Chemistry Buffalo, NY	K. Jonmaire jonmaikf@buffalostate.edu (716) 878-5138	Forensic chemistry	B.S.
University of California at Davis Interdisciplinary Forensic Science Graduate Group Davis, CA	R. H. Rice rhrice@ucdavis.edu (530) 747-3912	Forensic science	M.S.

Table 1. (Continued)

Institution; program's housing unit; city, state	Information of the program director	Program emphasis	Degree[a] offered
California State University at Los Angeles School of Criminal Justice & Criminalistics Los Angeles, CA	K. A. Roberts krobert2@exchange.calstatela.edu (323) 343-4610	Criminalistics	M.S.
Cedar Crest College Department of Chemistry & Physical Sciences Allentown, PA	L. A. Quarino laquarin@cedarcrest.edu (610) 606-4666 x3567	Forensic science Genetic engineering Forensic science	B.S. B.S. M.S.
Duquesne University Bayer School of Natural & Environmental Sciences Pittsburgh, PA	F. W. Fochtman fochtman@duq.edu (412) 396-6373	Forensic science & law	M.S.
Eastern Kentucky University Chemistry Department Richmond, KY	L. J. Wilson lori.wilson@eku.edu (859) 622-3089	Forensic science, chemistry option	B.S.
The George Washington University Columbian College of Arts & Sciences Washington, DC	V. W. Weedn vweedn@gwu.edu (202) 242-5758	Forensic chemistry Forensic toxicology Forensic molecular biology	M.F.S. M.F.S. M.F.S.
University of Illinois at Chicago Department of Biopharmaceutical Sciences Chicago, IL	A. K. Larsen larsena@uic.edu (312) 996-2250	Forensic science	M.S.
Indiana Univ. Purdue Univ., Indianapolis School of Science Indianapolis, IN	J. Goodpaster jvgoodpa@iupui.edu (317) 274-6881	Forensic & investigative sciences	B.S.
Laurentian University Faculty of Science & Engineering Sudbury, ON, Canada	S. I. Fairgrieve sfairgrieve@laurentian.ca (705) 675-1151	Forensic science Forensic science & chemistry	B.S. B.S.
Loyola University at Chicago Criminal Justice Department Chicago, IL	G. J. Bombard gbombard@luc.edu (708) 508-3676	Forensic science	B.S.
Madonna University College of Science & Mathematics Livonia, MI	J. L. Barta jlbarta@madonna.edu (734) 432-5514	Forensic science	B.S.
Marshall University College of Science Huntington, WV	T. W. Fenger fenger@marshall.edu (304) 691-8931	Forensic science, digital evidence Forensic science	B.S. M.F.S.
Michigan State University School of Criminal Justice East Lansing, MI	D. R. Foran forsci@msu.edu (517) 432-5439	Forensic biology; Forensic chemistry	M.S.
University of Mississippi Department of Chemistry & Biochemistry University, MS	M. Godfrey mgodfrey@olemiss.edu (662) 915-5143	Forensic chemistry	B.S.
Nebraska Wesleyan University University College Lincoln, NE	D. J. Strydom dstrydom@nebrwesleyan.edu (402) 465-2329	Forensic science	M.F.S.
University of New Haven Henry C. Lee College of Criminal Justice and Forensic Sciences West Haven, CT	T. M. Palmbach tpalmbach@newhaven.edu (203) 932-7116	Forensic science	B.S.; M.S.
University of North Texas Department of Chemistry Denton, TX	T. D. Golden forensic@unt.edu (940) 369-8458	Certificates in biochemistry, biology, & chemistry	B.S.
University of North Texas Health Science Center at Fort Worth Graduate School of Biomedical Sciences Fort Worth, TX	A. J. Eisenberg arthur.eisenberg@unthsc.edu (817) 735-0555	Forensic genetics	M.S.

Table 1. (Continued)

Institution; program's housing unit; city, state	Information of the program director	Program emphasis	Degree[a] offered
The Ohio University Department of Chemistry & Biochemistry Athens, OH	P. de B. Harrington harringp@ohio.edu (740) 994-0265	Forensic chemistry	B.S.
Oklahoma State University Center for Health Sciences Tulsa, OK	R. W. Allen robert.w.allen@okstate.edu (918) 561-1292	Forensic science with forensic toxicology & forensic biology tracks	M.S.
University of Ontario Institute of Technology Faculty of Science Oshawa, ON, Canada	H. LeBlanc helene.leblanc@uoit.ca (905) 721-8668 x 3688	Forensic science	B.S.
The Pennsylvania State University Eberly College of Science University Park, PA	M. Maroncelli (Interim Director) maroncelli@psu.edu (814) 865-0898	Forensic science Forensic science	B.S. M.P.S.
Sam Houston State University College of Criminal Justice Huntsville, TX	S. Kerrigan sarah.kerrigan@shsu.edu (936) 294-4370	Forensic science	M.S.
Texas A&M University Department of Entomology College Station, TX	K. Heinz kmheinz@tamu.edu (979) 862-3407	Forensic & investigative sciences	B.S.
Towson University Chemistry Department Towson, MD	M. Profili mprofili@towson.edu (410) 704-2668	Forensic chemistry Forensic science	B.S. M.S.
Virginia Commonwealth Univ. College of Humanities & Sciences Richmond, VA	M. Peace mrpeace@vcu.edu (804) 828-8420	Forensic science	B.S.; M.S.
West Chester University of Pennsylvania Chemistry Department West Chester, PA	T. Starn tstarn@wcupa.edu (610) 436-2684	Forensic & toxicological chemistry	B.S.
West Virginia University Eberly College of Arts & Sciences Morgantown, WV	K. B. Morris keith.morris@mail.wvu.edu (304) 293-3169	Forensic & investigative sciences	B.S.; M.S.

[a] M.S. = Master of Science; B.S. = Bachelor of Science; M.F.S. = Master of Forensic Science; M.P.S. = Master of Professional Studies.

UPCOMING EVENTS

American Academy of Forensic Sciences — Annual Meeting
February 16–21, 2015; Hyatt Regency Orlando
Orlando, FL, US

American Society of Crime Laboratory Directors (ASCLD) — Annual Symposium
April 26–30, 2015; Marriott Wardman Park
Washington, DC, US

Computer and Enterprise Investigation Conference 2015
May 18–21, 2015; Caesars Palace
Las Vegas, NV, US

Mid-Atlantic Association of Forensic Scientists (MAAFS) — Annual Meeting
May 18–22, 2015; Hyatt Regency Chesapeake Bay
Cambridge, MD, US

European Workplace Drug Testing Society (EWDTS) 2015 Conference
May 28–29, 2015; San Malhoa Hotel
Lisbon, Portugal

Drug and Alcohol Testing Industry Association (DATIA) 2015 Annual Conference
June 2–4, 2015; Trump National Doral
Miami, FL, US

International Association for Identification (IAI) — 100th International Education Conference
August 2–8, 2015; Sacramento Convention Center
Sacramento, CA, US

The International Association of Forensic Toxicologists (TIAFT) — Annual Meeting
August 30–September 4, 2015; Palazzo dei Congressi
Florence, Italy

Midwestern Association of Forensic Scientists (MAFS) — Annual Fall Meeting
September 20–25, 2015; Mission Point Resort
Mackinac Island, MI, US

Substance Abuse Program Administrators Association (SAPAA) 2015 Conference
September 22–26, 2015; Hyatt Regency Downtown
Houston, TX, US

2015 International Sysmposium on Human Identification
October 12–15, 2015; Gaylord Texan Hotel & Convention Center
Grapevine, TX, US

Northeastern Association of Forensic Scientists (NEAFS) — Annual Meeting
October 13–17, 2015; Resort & Conference Center at Hyannis
Hyannis, MA, US

International Forum for Drug and Alcohol Testing (IFDAT) 2015 Annual Conference
October 18–20, 2015; Hyatt Regency Mission Bay
San Diego, CA, US

Society of Forensic Toxicologists (SOFT) — Annual Meeting
October 18–23, 2015; Hyatt Regency Atlanta
Atlanta, GA, US

Southwestern Association of Forensic Scientists (SWAFS) — 37th Annual Conference
October 19–23, 2015; Renaissance Oklahoma City
Oklahoma City, OK, US

American Academy of Forensic Sciences — Annual Meeting
February 22–27, 2016; Rio Las Vegas Hotel
Las Vegas, NV, US

American Society of Crime Laboratory Directors — Annual Symposium
April 23–28, 2016; Hyatt Regency Bellevue
Bellevue, WA, US

International Association for Identification — International Education Conference
August 7–13, 2016
Cincinnati, OH, US

Society of Forensic Toxicologists — Annual Meeting
October 16–21, 2016
Dallas, TX, US

NEW FORENSIC SCIENCE BOOKS/CD-ROMS

The Basics of Digital Forensics — The Primer for Getting Started in Digital Forensics**,** 2nd ed
J. Sammons
Syngress/Elsevier: Waltham, MA, US; 2014

Commingled Human Remains — Methods in Recovery, Analysis, and Identification
B. J. Adams, J. E. Byrd
Academic Press/Elsevier: Waltham, MA, US; 2014

Crime Scene Investigation Procedural Guide
M. S. Maloney, D. Housman, R. M. Gardner
CRC Press: Boca Raton, FL, US; 2014

Environmental Forensics Fundamentals: A Practical Guide
I. G. Petrisor
CRC Press: Boca Raton, FL, US; 2014

Expert Report Writing in Toxicology: Forensic, Scientific and Legal Aspects
M. D. Coleman
Wiley-Blackwell: Somerset, NJ, US; 2014

Forensic DNA Collection at Death Scenes: A Pictorial Guide
R. Williams, R. Kahn
CRC Press: Boca Raton, FL, US; 2014

Forensic Document Examination — Fundamentals and Current Trends
J. A. Lewis
Academic Press/Elsevier: Waltham, MA, US; 2014

Forensic Neuropathology**,** 3rd ed
J. E. Leestma
CRC Press: Boca Raton, FL, US; 2014

Mass Spectra of Designer Drugs 2014 (CD-ROM)
P. Rösner
Wiley-Blackwell: Somerset, NJ, US; 2014

Maurer/Wissenbach/Weber LC-MSn Library of Drugs, Poisons and Their Metabolites (CD-ROM)
H. H. Maurer, D. K. Wissenbach, A. A. Weber
Wiley-Blackwell: Somerset, NJ, US; 2014

Misleading DNA Evidence — Reasons for Miscarriages of Justice
P. Gill
Academic Press/Elsevier: Waltham, MA, US; 2014

Simpson's Forensic Medicine**,** 13th ed: Irish Version
J. Payne-James, C. McGovern, R. Jones, S. Karch, J. Manlove
CRC Press: Boca Raton, FL, US; 2014

Toxicological Aspects of Drug-Facilitated Crimes
P. Kintz (Ed)
Academic Press/Elsevier: Waltham, MA, US; 2014

BOOK REVIEW

Misleading DNA Evidence: Reasons for Miscarriages of Justice
P. Gill
Academic Press/Elsevier: Waltham, MA, US; 2014

Reviewed by: *G. G. Shutler, Washington State Patrol, Crime Laboratory Division, Seattle, WA, US*

The famous Alexander Pope quotation of "To err is human; to forgive, divine" — with the less articulate addition of "to repeat is stupid" — could be the mantra of Peter Gill's new book. My overall impression after reading this is akin to the dread of having just reviewed a complicated Quality Assurance corrective action plan for a series of nonconforming works.

The subject matter is intended for forensic scientists, lawyers, judges, and policymakers, and it will be most understood by those who are tasked with the interpretation and presentation of DNA evidence in court. It may seem puzzling to readers in the general public that crime labs in the developed world typically participate in accreditation programs and have significant resources dedicated to quality assurance of their DNA services, and yet, misleading DNA evidence can end up in the work product of these crime labs.

The book starts off by defining "Trace-DNA", which is generally associated with analysis of cells deposited by contact or touch. The sensitivity of DNA analysis has improved to a level requiring a high complexity of thought in interpreting the results. Besides deposition of DNA evidence from participants during an act of violence or contention, there are other possible explanations for the presence of DNA that are discussed. The second chapter explores root-cause analysis of error in some specific cases. Important factors concerning source-level and activity-level reporting are discussed. The essentials of statement writing alone could provide a topic for a spirited DNA section meeting. With Chapter 3 comes the beginning of corrective action, and a framework for interpreting low-level DNA evidence is presented. There is a good discussion on evidence from under fingernails as well as the use of the probabilistic approach for reporting DNA interpretations. Chapter 4 brings in considerations of national DNA databases and yes, more mathematical considerations. The final chapter includes a summary of the Meredith Kercher case and the role of trace DNA interpretation and contamination issues.

Although not best described as an entertaining read, this is a book that should be read by all who work in DNA laboratories. Since involvement in a serious nonconforming DNA analysis event is an uncommon occurrence, there is a risk of complacency and a belief that interpretation errors or serious contaminations can never happen where you work. However, history has shown that wherever people are involved, there will be errors. Risk comes with the rapidity of DNA technology advances: Change can outpace our resources to properly interpret the results. While the case examples discussed in Gill's book are from the UK/Europe, no country or lab is immune to having similar occurrences. Throughout the book there are 12 recommendations that make up preventative actions in the book's corrective action plan to help avoid the pitfalls of trace DNA interpretation and high-sensitivity DNA analysis. These may be both interesting and of value to the reader.