

A dark, grainy photograph of a crime scene. In the background, a dark-colored car is parked with its driver-side door open. To the left, a wooden wall or door is visible. A sign on the wall reads "OPEN 7:45-1:00 SUNDAY 9-12". The ground is dark and littered with debris. Several yellow evidence markers are placed on the ground, with numbers 1, 2, 3, 4, 5, and 6 visible. A blue light source illuminates the scene from the left.

Eighth Edition

TECHNIQUES OF CRIME SCENE INVESTIGATION

Barry A. J. Fisher David R. Fisher

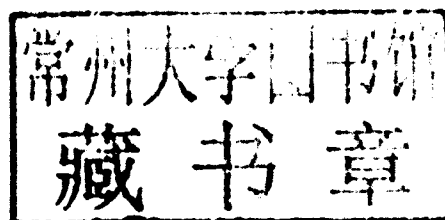


CRC Press
Taylor & Francis Group

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Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

Cover photo by Deputy Dale Falcon (Retired), Los Angeles County Sheriff's Department.

Cover design by Ms. Shayna Murry, Graphic Designer.

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CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742

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Printed in the United States of America on acid-free paper
Version Date: 20120411

International Standard Book Number: 978-1-4398-1005-7 (Hardback)

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Library of Congress Cataloging-in-Publication Data

Fisher, Barry A. J.
Techniques of crime scene investigation / Barry J. Fisher, David Fisher. -- 8th ed.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-4398-1005-7 (hardcover : alk. paper)
1. Crime scene searches. 2. Criminal investigation. I. Fisher, David. II. Title.

HV8073.F49 2012
363.25'2--dc23

2012009447

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for
Susan and Deena

Foreword

The efforts of law enforcement to stay one step ahead of those who actively choose to violate the law are part of an ongoing and evolutionary process. When there are those who are creating new ways to commit the “perfect crime,” the law enforcement community must respond and scour the evidence left behind, no matter how obscure or limited it is, to find the person(s) responsible for those crimes and bring them to justice. This process frequently involves the dedicated men and women of local, state, and federal forensic laboratories. They cannot settle for the status quo but must continue to push forward in scientific endeavors to support the judicial system in its search for truth and justice.

The education of those fine forensic science professionals is also an ongoing endeavor that can take years of study and training to reach the required level of competency, which is then followed by a lifetime of continuing education to remain proficient. This text is a resource for those who have chosen their specialty within the field but still want to keep up on the advances and capabilities of the other disciplines in the forensic sciences.

With the repercussions of the congressionally directed report by the National Academy of Sciences, *Strengthening Forensic Science in the United States: A Path Forward*, still echoing across the land, a new spotlight has been brought on those who provide forensic services for public agencies. Ensuring that the appropriate scientific techniques and principles are used to bring out the truth in criminal investigations will continue to be the task for all levels of forensic practitioners throughout the nation. Validating the science underlying those techniques will also be the responsibility of this generation’s forensic scientists. With that in mind, this text that has been a standard for years will continue to be used as a resource for those who wish to study and master the noble field of forensic science.

The Los Angeles County Sheriff’s Department was honored to have Barry A. J. Fisher as the director of our Scientific Services Bureau for more than two decades. Leaders like him have helped build it into one of the largest and most respected municipal crime laboratories in the world. I am honored to once again write a foreword for this volume, the eighth edition of *Techniques of Crime Scene Investigation* and look forward to its contribution as a trusted resource for the criminal justice community.

Leroy D. Baca
Sheriff, Los Angeles County

Preface

In the late 1970s, I was invited to revise the classic criminal justice textbook, *Techniques of Crime Scene Investigation*, which was first published in 1949 in Swedish under the title *HANDBOK I BROTTSPLOTSUNDERSÖKING* and subsequently in English in 1964. The original authors were Arne Svensson and Otto Wendel, two police investigators from Sweden. In 1981, I revised the text in the third edition and since then have served as the principal author. In this eighth edition, I have the pleasure to introduce a new collaborator, David R. Fisher, a supervising criminalist with the New York City Office of Chief Medical Examiner, Department of Forensic Biology. The reader might notice that we share the same last name; David is my elder son. It certainly makes a father feel proud to have his son follow in his career path.

You may ask why we wrote this new edition; after all, crime scene investigation is a fairly static field with few changes. True enough. However, recently there has been an increased focus on the forensic sciences due in large part to the report put out by the National Academy of Sciences, *Strengthening Forensic Science in the United States: A Path Forward*. New practitioners and students of crime scene investigations must be made aware of the increased scrutiny that they will face in the judicial system. Judges are taking a more involved role than ever before as far as the types of evidence and testimony that they allow into their courtrooms. No longer will substandard forensic science or crime scene investigations be acceptable.

Having said this, criminal investigations remain as complex as ever and require professionals from many disciplines to work cooperatively toward one common goal: the delivery of justice in a fair and impartial manner. The effective use of science and technology is critical to crime solving, reducing the number of wrongful convictions and exonerations. Police investigators, prosecutors, and defense attorneys must be able to use these resources to their fullest potential.

Science and technology applied to the solution of criminal acts solve crimes and potentially save lives. Scientific crime scene investigation aids police investigators in identifying suspects and victims of crimes, clearing innocent persons of suspicion and ultimately bringing the wrongdoers to justice. When the justice system is able to remove a criminal from society, innocent persons do not become new victims of criminal acts.

This book is about the proper and effective use of science and technology in support of justice. The eighth edition of *Techniques of Crime Scene Investigation* is written for students of crime scene investigation, police investigators, crime scene technicians, forensic scientists, and attorneys. The material presented in this text is basic, covering the proper ways to examine crime scenes and collect a wide variety of physical evidence that may be encountered at crime scenes. It is not possible to cover every imaginable situation, but this book is a guide that attempts to promote best practices. The areas are discussed in general terms to give the reader some idea of the information that can be developed from physical evidence if it is collected properly. Few of the procedures mentioned in the book are

inviolable, meaning that readers should not presume that practices referenced in the text can never be modified. On the contrary, crime scene investigation requires a degree of common sense and innovation. It is not possible to conjure up every imaginable situation a crime scene investigator may encounter in a case.

The authors of this edition do not claim to know thoroughly every discipline presented. Neither will studying the contents of this text make you an expert in all types of crime scene investigations or forensic science. Instead, we hope that it gives students, police investigators, and others engaged in or interested in the subject some insight into the field and helps interested readers to pursue further studies.

Some of the new topics in this edition include the following:

- Discussion on professional ethics
- Challenges facing forensic science laboratories and suggestions for addressing them
- Expert witness testimony
- CSI in HAZMAT environments
- Low copy number DNA/Touch DNA
- CODIS databases/familial searching
- Forensic science and terrorist acts
- National Academy of Sciences report on Forensic Science
- Digital evidence

The use of forensic science in criminal investigations depends on a number of factors. Police investigators must be knowledgeable about the capabilities of the forensic science support services available to them and appreciate how to use them effectively. Forensic practitioners must be familiar with police investigative procedures, the scientific theory that supports their own activities, and the legal aspects needed to convey the information from the crime scene to the ladies and gentlemen of the jury. Prosecutors, as well as defense attorneys, must understand the scientific and technological issues of the case and be able to work with the expert to admit expert testimony into court. Police agencies that run forensic science labs must fund them at an appropriate level to ensure quality, reliability, and timely service to the criminal justice system. All of these efforts require the cooperation and willingness of different professionals within the criminal justice system to work well together. Those of us who apply science and technology to the solution of crimes have a duty to do our best for the criminal justice system we serve in the interest of justice.

Acknowledgments

In preparing the eighth edition of *Techniques of Crime Scene Investigations*, we contacted many colleagues for interesting cases. Although we were unable to use all the material submitted to us, we do wish to thank them for their time and generosity. If we managed to miss anyone, we apologize for the oversight.

The names are listed in no particular order:

SC Leung, Former Head of Forensic Science Division of the Government Laboratory, Hong Kong, China; Roger Kahn, PhD, Forensic Biology Director, Harris County Medical Examiner's Office, Houston, TX; Andrew Singer, Product Manager, Bode Technology, Lorton, VA; Michael Lyford, Sergeant, Washoe County Sheriff's Office, Forensic Science Division, Reno, NV; Christophe Champod, PhD, Professor, School of Criminal Sciences, Institute of Forensic Science, University of Lausanne, Switzerland; Staff Inspector Richard P. Nuzzo, Division Headquarters, New York State Police, Albany, NY; Mike Havstad, Supervising Photographer, Scientific Services Bureau, Los Angeles County Sheriff's Department; Frederic A. Tulleners, Director, Forensic Science Graduate Program, University of California, Davis, CA; Steve Nash, Manager of Business Development and Customer Relations, Cogent Systems, Petaluma, CA; Joseph Almog, PhD, Professor, The Hebrew University, Casali Institute of Applied Chemistry, Jerusalem, Israel; Antonio A. Cantu, PhD, Forensic Scientist (retired), U.S. Secret Service, Washington, DC; Anna Barbaro, PhD, Chief of Forensic Genetics Dept., Office of Medical and Forensic Investigations, Messina, Italy; Angela L. Williamson, PhD, Director of Forensic Casework and Assistant Vice President, Bode Technology, Lorton, VA; Senior Criminalists Manuel Munoz, David Vidal, Deputy Dale Falicon (retired), Scientific Services Bureau, Los Angeles County Sheriff's Department; Lisa Jackson, Forensic Supervisor, Santa Monica Police Department, Santa Monica, CA; Melissa Simons, Forensic Scientist, Oregon State Police, Central Point, OR; Jeffrey C. Kercheval, Supervising Forensic Scientist, Western Maryland Regional Crime Laboratory, Hagerstown Police Department, Hagerstown, MD; Suzanne L. Noffsinger, Trace Evidence, Miami Valley Regional Crime Laboratory, Dayton, OH; Diana Faugno, Forensic Registered Nurse Consultant, San Diego, CA; Jay Jarvis, Alliance Forensics Laboratory, Inc., Ft. Worth, TX; General Jacques Hebrard and Yves Schuliar, MD, PhD, IRCGN (Institute of Criminal Research of the National Gendarmerie), France; William J. Bodziak, Bodziak Forensics, Palm Coast, FL; Tony Grissim, Public Safety & Forensic Account Manager, Leica Geosystems Inc.; Ray A. Wickenheiser, Laboratory Director, Montgomery County Crime Laboratory, Rockville, MD; Peter Diaczuk, John Jay College of Criminal Justice; Wendy van Hilst, Senior Forensic Investigator, Forensische Opsporing Amsterdam-Amstelland, Amsterdam, the Netherlands; Dan Cheswick, Suffolk County Crime Laboratory, Suffolk County, NY; Lucian C. Haag, Forensic Science Services, Inc., Carefree, AZ; and C.M. Bowers, DDS, JD, Ventura, California; Jeff Buszka and Norm Marin, Special Investigations Unit, NYC Office of Chief Medical Examiner; Doug Schiff, 3rd Tech; and Abacus Diagnostics.

Recognition also goes to Lydia deCastro, Latief Dickerson, Dan Rothenberg, and Peter Diaczuk, who reviewed portions of the manuscript and offered valuable suggestions on ways to improve it. Any mistakes, however, are solely our own.

We also wish to thank our editors Becky Masterman and Jill Jurgensen who were patient with us in making this edition a reality. We appreciate your kindness. Dennis Troutman, our project manager, and Kyle Meyer, our project editor, were instrumental in getting this book through the production process.

Alexis Anderson helped in preparing an updated bibliography and list of websites and Daniel Winderich developed end of chapter questions to be used as study materials and Powerpoint slides for use by instructors. We greatly value their efforts.

And finally to our wives, Susan and Deena, for their encouragement and support throughout this project.

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Barry Fisher served as the crime laboratory director for the Los Angeles County Sheriff's Department, a position he held from 1987 until his retirement in 2009. He began his career in criminalistics with the Sheriff's crime lab in 1969 and worked in a wide variety of assignments.

Fisher is a member of many professional organizations. He is a Distinguished Fellow and past president of the American Academy of Forensic Sciences and was awarded the Academy's highest award, the Gradwohl Medallion. He served as president of the International Association of Forensic Sciences, president of the American Society of Crime Laboratory Directors, and is a past chairman of the American Society of Crime Laboratory Directors—Laboratory Accreditation Board.

Fisher is a member of several editorial boards: *Journal of Forensic Sciences*, *Journal of Forensic Identification*, *Forensic Science Policy and Management*, and the *McGraw-Hill Encyclopedia of Science and Technology*. He is a coauthor of two other books, *Forensics Demystified* and *Introduction to Criminalistics: The Foundation of Forensic Science* and has lectured throughout the United States, Canada, England, Australia, Singapore, France, Israel, Japan, China, Turkey, and Portugal on forensic science laboratory practices, quality assurance, and related topics. In 2000, he led a forensic science delegation to lecture to forensic scientists in the People's Republic of China.

Since retiring, Fisher has consulted for the United Nations Office on Drugs and Crime, the United States Department of Justice, International Criminal Investigative Training Program (ICITAP), and Analytic Services Inc., a not-for-profit institute that provides studies and analyses to aid decision makers in national security, homeland security, and public safety.

Fisher, a native New Yorker, received his Bachelor of Science degree in chemistry from the City College of New York. He holds a Master of Science in chemistry from Purdue University and an MBA from California State University, Northridge.

David Fisher currently works as a criminalist supervisor in the Department of Forensic Biology at the Office of Chief Medical Examiner in New York City. He has worked on hundreds of homicide, sexual assault, and property crime cases and has testified in court and in the grand jury as a DNA expert on numerous occasions. He is a coauthor of *Forensics Demystified*, an introductory text about forensic science published by McGraw-Hill. Fisher is certified by the American Board of Criminalistics and is a Fellow in the American Academy of Forensic Sciences. He also maintains membership in the International Association for Identification, the Northeastern Association of Forensic Scientists and is an associate member in the International Association of Bloodstain Pattern Analysts.

Fisher also has much experience in mass fatality incidents. After the events of 9/11, he helped with the identification of victims from the World Trade Center attack. (His agency continues to identify human remains from Ground Zero.) As an intermittent federal employee with the U.S. Department of Health and Human Services Disaster Mortuary

Operational Response Team (DMORT), he was deployed to the Gulf region in 2005 to aid in the identification of victims from Hurricane Katrina.

Fisher received his BS degree in biochemistry and cell biology from the University of California, San Diego and attended graduate school in forensic science at John Jay College of Criminal Justice at the City University of New York.

“You shall investigate and search and ask diligently...”

(Deuteronomy 13:15)

“If the law has made you a witness, remain a man of science;
you have no victim to avenge, or guilty or innocent person to convict or save.
You must bear testimony within the limits of science.”

Dr. P.C.H. Brouardel

Nineteenth Century French Medicolegalist

Prologue

Crime scene investigation and forensic science operate within a legal framework. Thus, it is not surprising that a number of cases or legal rulings define some of the aspects of forensic science and crime scene investigation. The goal of any criminal investigation is not only to figure out what happened and who did it, but also to bring the wrongdoer to justice. As the final stop in a criminal investigation is in the courts, regulations, rules, legal precedents, and case law must be taken into consideration throughout the investigation. The following is a review of some of the case law and rules of evidence that deal with forensic science.

***Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).** *Frye* is one of the earliest cases in the United States to address the notion of admissibility of expert testimony. Expert testimony is used to help jurors understand complex issues generally beyond a layperson's knowledge. The *Frye* case dealt with the polygraph and whether its results were admissible. The court made the following statement in its opinion that sums up its ruling: "Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs." Polygraph evidence was not held to be admissible in this case. The *Frye* Rule essentially lays out the notion of general acceptance within the *relevant scientific community*.

Frye is still the standard in a number of states and has been modified in Federal cases by the Federal Rules of Evidence, specifically Rule 702.

- *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S.579 (1993). The *Daubert* case modified the way courts view expert testimony. The trial judge serves in the capacity of gatekeeper and decides what expert evidence may be admissible. *Daubert* also expands the requirements for admissibility beyond general acceptance and adds the notion of reliability. (The *Daubert* standard, however, is not used in all states.)
- *Federal Rules of Evidence, Rule 702* codifies *Daubert* and other later cases into the federal rules. "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skills, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." Different states use

one or more of the above standards to govern the admissibility of expert scientific testimony. Some have adopted the federal rules, while others continue to follow *Frye*, and still others have adopted a hybrid version. These legal issues are of interest to lawyers and judges who must deal with them in evidentiary hearings.

- *Melendez-Diaz v. Massachusetts*, 129 S.Ct. 2527 (2009) is a relatively new decision by the U.S. Supreme Court. The Sixth Amendment of the U.S. Constitution gives the defendant the right to confront his/her accuser. The question considered in *Melendez-Diaz* was whether lab reports constitute testimony and thus require the analyst who wrote the report to testify in court about his findings. The court concluded that the expert who wrote the lab report, not an affidavit, must testify as the witness for the State against the defendant to give the defendant the ability to examine the witness concerning the work he did in the case.
- Following the *Melendez-Diaz* case was the 2011 Supreme Court case, *Bullcoming v. New Mexico*, 131 S. Ct. 2705 (2011). The question presented in *Bullcoming* was whether the confrontation clause (Sixth Amendment) permitted the prosecution to introduce a forensic laboratory report containing a testimonial certification—made for the purpose of proving a particular fact—through the in-court testimony of another scientist who did not sign the certification or perform or observe the test reported in the certification. The Supreme Court held that surrogate testimony of that order does not meet the constitutional requirement. The accused's right is to be confronted with the analyst who made the certification, unless that analyst is unavailable at trial, and the accused has an opportunity, pretrial, to cross-examine that particular scientist. This case will have significant ramifications, particularly in cases in which the original expert and the evidence are no longer available for reexamination. Consider an old serial murder case that occurred many years prior. The pathologist who performed the autopsy might no longer be available and the deceased's remains are buried. The question yet to be determined is how evidence in such a case might be presented.
- As of this writing, the U.S. Supreme Court has also heard oral arguments in *Williams v. Illinois*, (10-8505). Although the court has not yet ruled in this case, the issue at hand is whether a defendant's rights under the confrontation clause are violated when an expert witness testifies about the results of testing conducted by another analyst who has not appeared in court to be cross examined. It remains to be seen how the ramifications of this case will affect forensic science operations throughout the country.

***Brady v. Maryland*, 373 U.S. 83 (1963).** *Brady* requires the prosecution to provide material evidence to the defense that may exculpate the defendant. *Brady* material readily adapts itself to forensic evidence and may become an issue in criminal proceedings.

What Is Required under Brady?* Prosecutors are required to disclose to the defense evidence favorable to a defendant that is either exculpatory or impeaching

* Adapted from the Los Angeles County District Attorney, Special Directive 02-08, <http://da.co.la.ca.us/sd02-08.htm>.

and is material to either guilt or punishment. Evidence is “favorable” to the defendant if it either helps the defendant or hurts the prosecution. In *Strickler v. Greene* (1999) 527 U.S. 203, 280-281, the U.S. Supreme Court stated:

In *Brady* this Court held “that the suppression by the prosecution of evidence favorable to an accused upon request violates due process where the evidence is material either to guilt or to punishment, irrespective of the good faith or bad faith of the prosecution.” *Brady v. Maryland*, supra, 373 U.S. at 87. We have since held that the duty to disclose such evidence is applicable even though there has been no request by the accused, [*United States v. Agurs* (1976) 427 U.S. 97, 107], and that the duty encompasses impeachment evidence as well as exculpatory evidence, [*United States v. Bagley*, (1985) 473 U.S. 667, 676]. Such evidence is material “if there is a reasonable probability that had the evidence been disclosed to the defense, the result of the proceeding would have been different.” Id at 682; see also [*Kyles v. Whitley* (1995) 514 U.S. 419, 433–434].

Prosecutors must determine what *Brady* evidence there may be *before* trial. The definition of “material evidence” is generally provided in the context of an appeal from a conviction. Evidence is material if there is a reasonable probability that the result of the proceeding would have been different had the evidence been disclosed. A reasonable probability of a different outcome is shown where suppression undermines confidence in the outcome. Such evidence must have a specific, plausible connection to the case and must demonstrate more than minor inaccuracies. Exculpatory evidence is evidence favorable to the defendant and material to the issue of guilt or punishment. Impeachment evidence is also included under *Brady*. For example, the California Evidence Code section 780 states in part that

Except as otherwise provided by statute, the court or jury may consider in determining the credibility of a witness any matter that has any tendency to prove or disprove the truthfulness of his testimony at the hearing including, but not limited to, any of the following:

His character for honesty or veracity or their opposites.

The existence or nonexistence of a bias, interest, or other motive.

A statement made by him that is inconsistent with any part of his testimony at the hearing.

Further examples of possible impeachment evidence of a material witness include the following:

1. False reports by a prosecution witness
2. Pending criminal charges
3. Parole or probation status of the witness
4. Evidence contradicting a prosecution witness’ statements or reports
5. Evidence undermining a prosecution witness’ expertise (e.g., inaccurate statements)
6. A finding of misconduct by a Board of Rights or Civil Service Commission that reflects on the witness’ truthfulness, bias, or moral turpitude
7. Evidence that a witness has a reputation for untruthfulness

8. Evidence that a witness has a racial, religious, or personal bias against the defendant individually or as a member of a group
9. Promises, offers, or inducements to the witnesses, including a grant of immunity

Strengthening Forensic Science in the United States: A Path Forward

In February 2009, the National Academy of Sciences issued a report, *Strengthening Forensic Science in the United States: A Path Forward*.^{*} The NAS Committee made 13 recommendations that are summarized as follows:

1. Create an independent federal forensic agency.
2. Establish standard terminology.
3. Support scientific research on forensic practices.
4. Ensure independence of forensic labs.
5. Research to minimize bias.
6. Set standards for forensic practice.
7. Require accreditation and certification.
8. Require quality assurance and quality control.
9. Establish a national code of ethics for all forensic science disciplines.
10. Students should be encouraged to pursue graduate studies to improve and develop applicable research methodologies in forensic science. Continuing legal education programs for law students, practitioners, and judges should also be established and supported.
11. The coroner system should be eliminated, and funds should be provided to establish a medical examiner system.
12. The Government should launch a new effort to achieve nationwide interoperability for fingerprint data.
13. Congress should provide funding to bring the Centers for Disease Control, FBI, forensic scientists and crime scene investigators together to develop roles as first responders in counterterrorism preparedness.

National Academy of Science reports have no force of law but are advisory. As of this writing, the White House and Congress are considering implementation of some of the recommendations made in the report but nothing is certain at the moment. The report has been cited in some court cases, most notably in *Melendez-Diaz v. Massachusetts*; however, it is not possible to say what the ultimate outcome of the NAS report will be. Furthermore, it is unclear how much influence the federal government can exert on the states, other than through the power of the purse in the form of grants. This is another example of an unfolding situation that will have to be followed closely.

Forensic science is more than just applied science. There is much more to crime scene investigation than simply proper police investigative techniques. Appearance and perception as well as the ability to communicate effectively to a jury are equally important. It is not only important to be sharp; you have to look sharp as well. To put it another way,

^{*} Readers may find this report interesting as it covers many issues concerning modern forensic science and crime scene investigation. <http://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>

appearances and perception are every bit as important as knowledge, skills, and ability, at least in the eyes of the jury and the public.

It would be naive for anyone planning a career in police work, forensic identification, or forensic science to underestimate the importance of the role of the expert witness in the courtroom. An investigator with the cleverness of Sherlock Holmes or a forensic scientist with the wisdom and understanding of Albert Einstein would be ineffective in a criminal investigation if he or she were unable to convince a jury made up of laypeople. Verbal communication skills are every bit as important as technical expertise in being a successful expert witness.

Professional ethics are also crucial. In a small number of instances, ethical failings among practitioners make restating some fundamental principles necessary. Criminal justice practitioners must know how to behave and what actions are right and honorable. For whatever reasons, notions of ethics, duty, and honor are ideals that have been forgotten by some. A brief discussion on the subject is in order because forensic practitioners and crime scene investigators occasionally forget their public duty. In addition, those new to the profession must be told what their role in the criminal justice system is in clear, unmistakable terms.

A colleague once explained ethical conduct by using a simple statement: "It takes a career to build one's reputation, and only a moment to ruin it!" In a forensic context, several examples of dishonorable conduct come to mind. These situations, unfortunately, refer to actual incidents:

- Planting evidence at a crime scene to point to a defendant
- Collecting evidence without a warrant by claiming exigent circumstances
- Falsifying laboratory examinations to enhance the prosecution's case
- Ignoring evidence at a crime scene that might exonerate a suspect or be a mitigating factor
- Reporting on forensic tests not actually done out of a misguided belief that the tests are unnecessary, or "dry labbing"
- Fabricating scientific opinions based on invalid interpretations of tests or evidence to assist the prosecution
- Examining physical evidence when not qualified to do so
- Extending expertise beyond one's knowledge
- Falsifying positive and/or negative controls
- Stealing narcotic evidence from drug cases
- Using unproven methodologies
- Misstating credentials
- Overstating an expert opinion by using "terms of art" unfamiliar to juries
- Failing to report a colleague, superior, or subordinate who engages in any of the previously listed activities to the proper authorities
- Charging for one's testimony based on the outcome of the trial

This list of wrongdoings can be categorized in several ways. Some failings are actually criminal in nature; they are felonies that could result in prison terms for the perpetrator. Others represent negligent conduct and could result in civil litigation against the expert, a superior, or the agency. Yet another class of failings constitutes professional misconduct that could result in censure, suspension, expulsion from professional organizations, or termination from employment. Occasionally, situations arise that contain an element of

ambiguity. How might one determine the best course of action? Although the answer may not be clear in every case, one method is to ask the following questions:

- Would I be proud to tell my children or my parents what I did?
- How would my actions look on the front page of the morning newspaper?

If it remains uncertain whether actions are inappropriate or improper, seek the advice of a trusted professional colleague. Every forensic discipline has members who serve as pillars of the profession; seek out those individuals and ask for guidance.

Those of us who work for public agencies and who investigate criminal acts carry a difficult burden. The consequences of our conduct are considerable. Defendants convicted of capital crimes may face the death penalty or long years of incarceration, in part from the physical evidence we collect and about which we provide expert testimony. It is troubling to think that those responsible for committing a criminal act may be set free because of actions committed or omitted by a forensic investigator. Indeed, few professions carry this amount of responsibility or hold such public trust as do forensic scientists and crime scene investigators.

Training and continuing education are important for all practitioners within the criminal justice system: uniformed officers, detectives, crime scene investigators, forensic scientists, prosecutors, defense attorneys, and judges. Continuing education and attendance at professional association seminars and workshops are essential to professional competency and professional development. To demonstrate this point, one should ask himself, “Would I consider going to a physician, dentist, accountant, lawyer, or other professional who does not periodically attend continuing education classes to keep up his or her professional competency?” Funds for professional development should be considered a priority in all law enforcement organizations that conduct forensic science testing. It cannot be overstated enough that we all need to stay abreast of current developments in our field. Practitioners should also be willing to give back to the profession by teaching, giving papers or talks at conferences, or organizing a workshop.

Written standard operating procedures must be developed and reevaluated periodically. All law enforcement personnel involved in the investigation must follow their agency’s policies and physical evidence procedures. Agencies must “say what they do and do what they say.” The reasons for this are evident. Defense attorneys will attempt to show that the written policies and procedures were not followed or, if policies and procedures do not exist, that the practices used were not generally acceptable or personnel lacked appropriate training. The results are the same; even if forensic tests point to the defendant, improper or inadequate evidence collection and preservation techniques will render the evidence inadmissible or its value will be diminished.

A better-informed defense bar will also raise questions about the quality of forensic science laboratories and their forensic practitioners. One way to evaluate a laboratory’s quality is to inquire if it is accredited. In the United States and several foreign countries, the American Society of Crime Laboratory Directors—Laboratory Accreditation Board (or ASCLD/LAB*) provides that accreditation. Other programs such as Forensic Quality Services also provide ISO 17025[†] accreditation programs. In fact, with the number of

* <http://www.ascl-d-lab.org/>

[†] ISO 17025 is the main standard used by testing and calibration laboratories.