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Forensic Science Ethics: Developing an Integrated System of Support and Enforcement

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ABSTRACT: This article reviews rules and codes adopted by operating agencies and professional societies which regulate the professional conduct of forensic scientists. The purpose, origin, and content of these codes are examined, with particular emphasis on their ability to address the major ethics-related problems confronting the field. The recently adopted ethics and management guidelines of the American Society of Crime Laboratory Directors are discussed as a major new policy having the potential of ensuring that benchworkers, managers, supervisors, and parent agency executives all subscribe to a common and comprehensive set of ethical standards.

KEYWORDS: forensic sciences, symposium, ethics

Background

With the rapid increase in the uses of science in the legal system over the past two decades, cases of abuse of science in legal fact-finding have been brought to our attention. Cases in which forensic science experts have overstepped their scientific authority in reviewing and interpreting evidence in civil and criminal cases appear in the popular and scientific literature [*1,2*]. Given the preferred status accorded forensic scientists by our legal system and the high stakes of the criminal justice process, charges of unprofessional conduct on the part of forensic scientists are a serious problem.

Other papers in this symposium have addressed various aspects of the interface between law and science, including the adequacy of existing laws and procedures regulating the legal system's use of science and expert witnesses [*3*]. The law per se does little to regulate the quality of expert testimony and professional status of forensic scientists. Fundamentally, if the proferred expert in a particular case has greater knowledge in a given area than the average lay person, and if that expert's testimony is predicted to "assist the trier of fact" [*4*], the trial court is likely to accept it. The court then looks to the adversary process and particularly the cross-examination of expert witnesses as the primary means to correct or remedy faulty findings that may be delivered to the court.

Data indicate, however, that such a potentiality rarely occurs in routine criminal cases [*5*]. In the great majority of criminal cases in which scientific evidence is used, the prosecution

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offers this evidence without serious review or cross-examination by the defense. Since, too, the vast majority of criminal cases are resolved through plea bargaining, the prosecution's employment of scientific findings is rarely challenged by the defense. The absence of a review (scientific or procedural) means that the prosecution's expert seldom has his/her credentials challenged, scientific procedures reviewed, and results or interpretations of findings questioned by the opposition.

As a consequence, the primary responsibility for verifying an expert's credentials shifts from the court to the agency which employs the scientist. Responsibility also centers on the professional society to which the scientist may belong to see that individual members adhere to standards of professional practice. Ultimately, of course, responsibility rests with the individual scientist to see that he/she is competent and satisfies generally accepted standards of conduct. For forensic scientists who practice independently and are not a part of scientific or law enforcement organizations that have adopted professional standards, individual standards are of paramount importance.

This paper focuses on rules adopted by laboratories and professional societies which define, promote, and regulate the ethical conduct of scientific employees. In particular, it reviews the recently adopted guidelines of the American Society of Crime Laboratory Directors (ASCLD) which address the ethical obligations of both crime laboratory managers and supervisors. Also examined in the paper are how these guidelines, and the ethics codes of professional societies, may be employed by laboratory organizations in promoting and enforcing professional behavior.

Professional Goals and Shortcomings

Historically, the forensic sciences have devoted considerable energy to defining the professional obligations of its members. Several well-established principles have evolved.

- Forensic scientists should be technically competent and employ reliable methods of analysis.
- Forensic scientists are to be honest with respect to their qualifications and confine their examinations to their area(s) of expertise.
- They should be intellectually honest with respect to the scientific data upon which they base their conclusions and opinions.
- Scientists are to be objective and remain nonpartisan in their review of evidence and delivery of expert testimony understandable to nonscientific fact finders.

In practice, however, forensic scientists are faced with a number of scientific, organizational, and legal pitfalls which severely test their ability to meet these high expectations. Among the central problems are:

- An adversary system ill-suited to the objective presentation of scientific results and opinions. Scientists are often pressured by case adversaries to present findings in the most favorable light possible to their client. Indeed, this is the attorney's role. The rules of the legal system promote these values, often at the expense of long held scientific values of openness and objectivity.
- The placement of most forensic science/crime laboratories within partisan (law enforcement) units of the legal system, often headed by a nonscientist. As a result, some forensic scientists are required to practice within laboratory environments that fail to place a high premium on scientific excellence, independence, and close association with relevant professional organizations. These conditions, coupled with salaries not competitive with private industry, have created difficulties for some laboratories in attracting highly qualified scientific personnel to its ranks.
- The failure of the forensic science profession and legal system to set and enforce minimum standards governing the qualifications of forensic scientists, the accuracy and reliabil-

ity of findings, and the neutrality of expert witnesses. Although courts retain ultimate authority for evaluating an expert's credentials, the field has failed to provide the legal system with adequate standards and data to evaluate these potential experts. As a result, courts are required to accept or reject the expert's own claim of expertise, or that of his employer, without the benefit of an impartial and rigorous assessment of his or her capabilities.

In February 1987 the author (Peterson) conducted interviews with several scientists and lawyers in attendance at the Annual Meeting of the American Academy of Forensic Sciences. The purpose of the interviews was to engage in preliminary field work to define with greater clarity the range of ethical problems facing the field. Interviewees were asked to rank order different types of ethical problems in terms of their prevalence and severity. Seven problems had been formulated, based on a review of various literature sources and professional association codes of ethics, as well as consultation with members of the profession. The seven problems were:

1. forensic scientists who misrepresent their education, training, experience, or area of expertise;
2. forensic scientists who are dishonest or knowingly falsify their reports, examination procedures, data, or opinions or both;
3. forensic scientists who are incompetent, that is, those who either lack the necessary theoretical understanding of testing procedures, or use inappropriate or unreliable tests or procedures;
4. forensic scientists who write reports or deliver opinions that exceed the limits of their data;
5. forensic scientists who are not objective and whose opinions are influenced by their employers, case adversaries, or other nonscientific considerations of a case;
6. forensic scientists who fail to take adequate steps to ensure that fact finders appreciate both the strengths and weaknesses of their evidence or prepare reports/deliver testimony that are misleading and likely to implant false impressions in the minds of nonscientific fact finders; and
7. forensic scientists who fail to report serious unethical conduct of fellow scientists.

Members were given seven cards, each containing one of the problem statements, and were asked to select the two or three statements that represented what they thought were the major ethical problems facing the forensic science field today. They were requested to take into account both their perception of the *severity* of the problem, as well as its *prevalence.*

Eleven persons provided ratings at the meeting which form the basis for the following rankings. Subsequently, the interviews and rankings were summarized, circulated, and discussed with various other professionals.[3] The following brief overview reflects the above rankings and comments supplied by those consulted.

There was consensus among the persons interviewed that Problems 3, 4, 5, and 6 were of greatest concern. Members believed these problems both to be inherently serious and to occur with some regularity. Some of the issues of lesser concern were thought to be serious, but occurred with such infrequency that they would not be ranked as major problems facing the field today. (See, also, the paper by Saks [*6*] in this symposium for his discussion of the following three problem areas.)

- Ranked number one was the problem of incompetency, which was perceived as not only a function of inferior qualifications and performance of individual scientists, but also the result of an *organization's* failure to provide individual scientists with the necessary resources, training, and supervision.
- Ranked second were a series of problems, the origin of which center in what can be

[3]Two additional individuals supplied rankings which were in basic agreement with the initial set.

termed "practicing science in the legal system." These include the failure of scientists to express both the strengths and weaknesses of their data, giving opinions which exceed the limits of their data, and a failure to remain objective in their evaluation of evidence and delivery of testimony. These problems become particularly acute when scientists are expected to practice under severe caseload pressures. The temptation and need to cut corners and "grind out" case results can pressure scientists to sacrifice the goals of competency, thoroughness, and objectivity.

- At the lower end of the scale were concerns over misrepresentation of credentials, falsification of findings, and the failure to report unethical conduct on the part of colleagues. These failings at the individual level were perceived as occurring far less often than ones cited earlier and not unique to the forensic sciences. Nonetheless, they are serious and, as we will see, among the more common infractions brought before ethics committees of professional societies.

Initiatives

The primary initiatives taken by the forensic science profession in the past decade to address such professional challenges fall into four primary areas.

Proficiency Testing Programs

Begun in 1974 by the Forensic Sciences Foundation under a grant from the National Institute of Law Enforcement and Criminal Justice, efforts to test the proficiencies of laboratory examiners have grown substantially. The national level program, now administered by the Collaborative Testing Service of McLean, Virginia, with the cosponsorship of the Forensic Sciences Foundation and the American Society of Crime Laboratory Directors, administers simulated evidence test specimens to more than 140 laboratories annually [7]. This program has spawned many other testing efforts at federal, state, and local levels.

Professional Society Codes of Ethics

Most professional associations of forensic scientists have developed their own codes of ethics governing the behavior of their members. Saks article [6] includes an interesting classification scheme and summary of the central tenets of the various codes. In a later section of this paper we will review the experiences of associations, and particularly the California Association of Criminalists, in enforcing such codes.

Accreditation Guidelines of the ASCLD

The American Society of Crime Laboratory Directors (ASCLD) conducts a voluntary accreditation process through which a crime laboratory may apply to have its operations, management, physical plant and safety, and security procedures evaluated.

The four principal objectives of the Accreditation Board are:

1. to improve the quality of laboratory services provided to the criminal justice system,
2. to offer to the general public and to users of laboratory services a means of identifying throughout the nation those laboratory facilities which satisfy accreditation criteria,
3. to develop and maintain criteria that can be used by a laboratory to assess its level of performance and strengthen its operation, and
4. to provide an independent, impartial and objective system by which laboratory facilities can benefit from a total organizational review [8].

With respect to laboratory personnel, this accreditation program focuses on the *system* which should be in place in the laboratory. It does not evaluate the competency of individuals.

Management Guidelines of ASCLD

In response to growing concern by its membership that laboratory directors are faced with quite a different set of professional problems and demands than are bench workers, ASCLD adopted a statement of ethics and set of management guidelines. These guidelines will be discussed in detail in a subsequent section of this paper.

Codes of Ethics

Professions have assumed a prominent role in modern society and are characterized by the pursuit of high moral standards, competency, collegiality, and the delivery of "value-free" service to all who might desire such expertise [*9*]. The codes range from the general, such as the American Academy of Forensic Sciences' [*10*], to the detailed as perhaps best illustrated by the California Association of Criminalists' (CAC).

Some years ago John Davis, one of the founding members of the CAC sketched a brief history of the CAC code of ethics—which stands as one of the most comprehensive codes in all the forensic sciences. Mr. Davis noted that in 1954 the CAC had the choice of adopting either a very general statement of guiding principles (much like an oath) that could be committed to memory and publicized to those outside the profession or to develop a much more detailed set of behaviors. The CAC chose to prepare a detailed code, specifying areas of conduct and responsibility which embodied the association's philosophy toward issues of ethical conduct.

Davis and his colleagues believed that a code of ethics could serve several purposes, among them:

- "Assure those *outside* the profession that they can expect to receive from members of the profession a certain degree of uniformity in standards of performance or moral conduct from any member of the profession who subscribes to the code."
- "Assures members *within* the profession that they can similarly rely on their colleagues to maintain certain levels of technical and moral standards in exchange for which each member, in effect, covenants or contracts to conduct his own activities in accordance with the same principles."
- "Serve notice on those both *outside* and *within* the professional association that while those persons engaged in the profession in question, but *not* members of the association, *may* have high moral and ethical standards, they are not *bound* to the code, and so their conduct *may* be of a lower order, and (unless actually illegal) may not be subject to penalty, or correction; hence cannot validly be *relied* on to the same degree."[4]

In large measure the CAC founders wrote particular code provisions in response to specific violations that had come to light and which tended to "lower the standards of the profession, or bring disrepute upon it."[4] "Other sections were included in anticipation of potential violations in certain areas, or as means of more specifically detailing our 'philosophy' as it applied to the profession, ..."[4] The group decided, also, that it would be easier to enforce the specific provisions where the code actually illustrates "meanings and intents."[4]

In practical terms, forensic science association codes of ethics generally contain provisions which fall into four principal areas: (1) obligations to follow the scientific method in performing examinations and formulating conclusions; (2) requirements concerning the impartial interpretation and presentation of laboratory results; (3) behavior concerning courtroom demeanor and delivery of expert testimony; and (4) obligations to the profession as a whole and maintenance of one's own professional skills.

Note, as well, that some forensic science associations have no ethics codes per se, but have provisions in their bylaws to investigate and sanction members who engage in behavior deemed unethical. The definition of unethical conduct is determined in an ad hoc fashion.

[4]J. E. Davis, Letter to Gerald Mitosinka, 24 June 1970, "Notes," pp. 2-4.

Enforcement

One of the nagging issues surrounding the effectiveness of ethics codes concerns their enforcement. Very little data are available which describe the enforcement experience of associations—relatively few complaints are brought to professional societies, and associations seldom maintain detailed information on dispositions. Those that do maintain complete records seldom release findings because of their confidential nature. A further limitation of data from professional societies is that they cover only *members* of particular organizations for conduct specified in their codes and which have resulted in a complaint.

An earlier study by Saks and Van Duizend [*11*] included interviews with the heads of ethics committees of four professional associations, including the American Academy of Forensic Sciences. The chair of the AAFS ethics committee noted two general types of complaints brought against members: those concerning misrepresentations of qualifications, and those alleging misrepresentation of data followed by unwarranted conclusions or opinions. The Saks [*6*] paper summarizes charges brought against Academy members for an eight-year period beginning in 1978 and notes particular concern over complaints alleging "misrepresentation or distortion of evidence" as conduct that is potentially most injurious to the profession.

Of all forensic science associations, the California Association of Criminalists (CAC) has the most detailed code and enforcement provisions. The code contains a preamble and a listing of more than 40 guidelines to which its membership subscribes [*12*]. The 40 guidelines are broken into 5 basic subdivisions: ethics relating to the scientific method, ethics relating to opinions and conclusions, the ethical aspects of court presentation, ethics relating to the general practice of criminalistics, and ethical responsibilities to the profession. This code remained essentially unchanged from the time it was adopted in 1957 until it was slightly modified in 1985.

In addition to its detail, the CAC code is unique because of the effort placed on enforcement. Originally adopted in 1980 and revised in 1985, the provisions for enforcement are contained in an eleven-page addendum to the code. Before 1980, the CAC Ethics Committee not only investigated ethics charges but made a determination whether the charges were founded or not. Founded charges were then brought before the membership and put to a vote.

In 1980, the CAC adopted a procedure whereby the accused is afforded due process of law while allowing the organization to enforce its code. Under the new procedure, the ethics committee only investigates the charge and makes a report to the Board of Directors, which holds a hearing (in closed session) and determines the action to be taken. If it determines that a basis for consideration of an ethics violation exists, another hearing is scheduled. The general membership is invited to this meeting, but may not participate. The Board may also decide either that no basis for consideration of a violation exists or that the matter has been dealt with in a constructive manner and requires no further action. While the Board makes the finding if a hearing is held, the accused has the option of appealing the decision to the full membership.

The CAC has considerable experience in enforcing this code. Preliminary research has revealed that since 1957 the CAC has received twenty allegations of unethical conduct. Eight allegations involved misrepresentation of credentials or data or both; four involved questions of competency or testifying outside one's area of expertise; three involved failing to examine the best evidence available; one involved conduct not in keeping with standards described in the preamble; one involved making public comments not in the best interests of the profession; another involved a number of sections of the ethics code but the overriding issue was alleged perjurious testimony; and two involved charges against supervisors. One supervisor was charged with not resolving significant differences of opinion among staff members regarding analytical results, while the other supervisor was charged with removing documents from case files, changing reports, and requiring staff to use questionable analytical methods.

Thirteen of these cases were dismissed, either because the charges were determined to represent conduct not covered by the code or a finding of no ethical liability was rendered. In another four, the members charged resigned from CAC, thus suspending these cases. In the remaining three cases, a finding of unethical conduct was rendered and members were sanctioned. Two were reprimanded and one was expelled.

ASCLD Code and Guidelines

The American Society of Crime Laboratory Directors was founded in 1973 and, among other accomplishments, has instituted the program of laboratory accreditation previously described. In 1984 the ASCLD board of directors asked its ethics committee to review the various regional forensic science association codes to determine if it should develop its own. The ASCLD membership was surveyed a year later and practically 90% of those responding indicated a need for such a code. Most felt a special code was needed since laboratory managers and supervisors encounter different sets of problems from those faced by benchworkers who are mainly involved with casework, most of whom were governed by codes in regional or national forensic science associations. Laboratory directors felt ASCLD had a duty to define standards and provide direction to its membership in problem areas not covered by these other codes.

There were some laboratory directors who opposed development of this code and believed a separate set of guidelines was unnecessary and that it was better to leave questions of professional ethics to the regional associations. These directors were clearly in the minority, however, and the organization proceeded to draft a set of guidelines.

In September 1987 ASCLD approved a one-page statement of "Ethical Guidelines" which in turn, refers to a more detailed set of "Guidelines for Forensic Laboratory Management Practices" [*13*] that had been approved a year earlier. The "Ethical Guidelines" statement is as follows:

> The American Society of Crime Laboratory Directors recognizes the existence of ethics issues arising from activities unique to managers, such as hiring, training and supervising subordinates, establishing procedures for evidence handling and analysis, and providing quality assurance. These management responsibilities have a profound effect on the integrity and quality of the work product of a crime laboratory, yet are generally not addressed in the ethics codes of other forensic science associations.
>
> Therefore, as members of the American Society of Crime Laboratory Directors, we will strive to foster an atmosphere within our laboratories which will actively encourage our employees to understand and follow ethical practices. Further, we shall endeavor to discharge our responsibilities toward the public, our employers, our employees and the profession of forensic science in accordance with the ASCLD Guidelines for Forensic Laboratory Management Practices [*14*].

Thus—for the first time—laboratory directors have gone on record as taking responsibility for the quality and integrity of the casework produced in their laboratories. They may also be held accountable by their employees for fostering an atmosphere within their laboratories which encourages the understanding and adherence to sound ethical practices. The above referenced "ASCLD Management Guidelines" provide very specific provisions which should enable laboratories to meet these responsibilities.

ASCLD Guidelines for Forensic Laboratory Management Practices

Recognizing the great trust legal practitioners and the general public place in forensic scientists, this document was designed to provide guidelines for the conduct of managers and supervisors of crime laboratories so as "to safeguard the integrity and objectives of the profession and to ensure the faith of the public in the quality of its practice" [*13*, p. 39]. The guidelines are divided into five major sections: responsibility to the employer, responsibility to employees, responsibility to the public interest, responsibility to the profession, and a major section on quality assurance. We will examine these specific sections more carefully.

Responsibility to the Employer

Directors have an obligation to follow sound management principles, to be "honest and trustworthy," to maximize organizational efficiency, and to otherwise pursue the goals and policies of their parent organization. Managers also have a responsibility to maintain quality assurance practices and focus their resources on casework which "if successfully concluded, (will) have an effective impact on the enforcement or adjudication process" [*13*, p. 40].

Responsibility to the Employees

This section is subdivided into four units addressing internal relationships; supervision, management, and working environment; education, training, and professional development; and management support. Key provisions advise managers it is their responsibility to "provide the professional staff with the means necessary to maintain their professional and scientific skills and insist that they do so" [*13*, p. 40]. Managers must acknowledge this responsibility since they are ultimately accountable for the performance of all their employees. In addition to maintaining safe and healthy work conditions, the necessary resources and equipment, and reasonable workload assignments, managers must also formulate realistic performance goals and inform scientific staff of them. On the other hand, managers may reasonably hold employees accountable "to a high level of professional conduct." Managers are also advised they must be realistic in their expectations of benchworkers and "not promise examinations that are beyond the capability of the staff." This latter guideline is important since many ethics codes warn that scientists must not deliver results or opinions "which exceed the limits of their data."

Education, Training, and Professional Development

This key provision states that managers should only place individuals in positions of scientific responsibility who have the necessary training and experience, plus have demonstrated their proficiency in that area. Managers are also advised they must support their staffs in acquiring, maintaining, and upgrading their skills and not assign casework beyond an employee's expertise.

Management Support

One of the core ethical expectations of forensic scientists is that they maintain their objectivity and not be influenced by case adversaries. In this section, guidelines advise managers they must protect their employees from "unreasonable external pressure" which may be applied to an employee "to give directed or slanted testimony."

Responsibilities to the Public Interest

There are a number of provisions in this section which address potentially unethical behavior. Managers and employees alike are expected to avoid any activities which, in reality or appearance, interfere with their independent judgment. Managers must also verify the academic and experience credentials of employees and hire only those they believe "have the integrity necessary to the practice of forensic science." Managers are also advised to be "open and honest" with all those having a "legitimate interest" in laboratory matters, "avoid misrepresentations and/or obstructions" [*13*, p. 41], and allow reasonable access to evidence and related information. These guidelines are in response to problems experienced by defense attorneys and experts who are occasionally denied access to evidence or results in the hands of a police crime laboratory.

A final section addresses the obligations of laboratories to provide a "quality work product" to the public. Although noting it is impossible to guarantee error free examinations, it is not only possible but an obligation to institute a system of checks and balances to detect most errors. Managerial responsibility not only encompasses the "competency and reliability" of work performed, but also the validity of test methods employed, reports issued, and testimony delivered, and of the quality assurance system designed to detect such problems.

Responsibilities to the Profession

Managers are advised they should support the participation of their employees in professional activities and to support professional societies' efforts "to deal with matters of professional ethics." It is expected that managers will also support formal forensic science academic programs, student internships, and in-house applied research. In furtherance of efforts to enforce "minimum standards of competence and laboratory practice," managers are encouraged to participate in laboratory accreditation and peer certification programs.

Quality Assurance

The final, and most detailed, section of the guidelines addresses the necessary steps in maintaining a quality assurance program [*13*, p. 42]. Included are provisions to maintain the integrity and chain of custody of evidence received by the laboratory; ascertain the competence of analysts and the reliability of equipment and methods employed; plus document casework procedures in reports as well as monitor the quality of testimony offered by employees in courts of law. Although members of the profession may debate if ensuring "competency" is a bona fide ethical obligation, it is clear that laboratory managers believe it to be one of their most important obligations to the public.

As indicated in earlier sections of these guidelines, laboratories must exercise care in hiring and training new employees and have in place a system for verifying and monitoring the proficiency of its employees. Laboratories "should maintain records of the testing, its results and any corrective action taken." *Written* laboratory procedures should be in place that meet acceptable scientific standards. The guidelines acknowledge that forensic scientists be given reasonable flexibility in choosing the appropriate method to suit the needs of a particular case, but they also state managers should be sure the procedures are followed and applied properly. Procedures for validating new or significantly modified old methods are included in the guidelines.

Finally, several guidelines are offered concerning casework documentation, reporting, and testimony. For example, although the analyst is expected to remain objective throughout the examination and interpretation process, he/she nonetheless should have access to all relevant case information (for example, about the crime scene, evidence collection procedures, and statements of witnesses) that may contribute to the proper interpretation of the physical evidence. Notekeeping should be sufficiently thorough that a knowledgeable analyst, unfamiliar with the case, would be able to evaluate the results and conclusions by reading the case report and notes.

With respect to the writing of laboratory reports, analysts must strive to prepare accurate and clearly written summaries of the analyses performed. Since laboratory reports often "stand alone" and are not accompanied by the analyst's verbal testimony, reports should contain both laboratory results and the examiner's interpretations. The interpretation of results should express "what the examination results do (or do not) mean in the context of the case in question." "Limitations of the results should be clearly stated" [*13*, p. 43]. The analyst performing the examinations and forming the conclusions should be identified and should sign the report.

Managers are advised that a review process should be in place so that all reports are reviewed "if possible;" routine analyses may be spot-checked. Where the analyst possesses greater technical knowledge in an area than a supervisor, a review by peers is appropriate.

Courtroom activities of analysts should also be monitored by supervisors. This would not only include actual testimony, but also the review of transcripts and evaluations by adversaries in particular cases. Supervisors are responsible for seeing that employees "state their qualifications accurately and honestly and avoid offering opinions in areas in which they are not qualified" [*13*, p. 43]. The analysts should not "mislead the trier of fact and must qualify their opinions where necessary."

Comprehensiveness of ASCLD Guidelines

When the ASCLD Guidelines are compared with the seven ethical problems cited earlier in this article, we find that virtually all the problem areas are addressed to a greater or less extent.

Misrepresentation of Credentials

Crime laboratory managers belonging to ASCLD are called upon to check and verify the credentials of their employees.

Dishonesty/Falsification of Reports

Within the quality assurance section of the guidelines, managers are advised that a system of notekeeping is to be maintained that documents all case reports. All materials are to be prepared "accurately and honestly" and never reported in a manner that may "mislead or misinform those who receive it." Managers are also advised to oversee the courtroom testimony of scientists to ensure their qualifications are stated accurately and testimony does not mislead the judicial decision makers.

Incompetency

Managers are told they must ensure employees receive the necessary training to maintain and upgrade their skills and not be asked to conduct examinations beyond their expertise. Laboratories are advised they must have a quality assurance program which verifies the competency of its examiners.

Opinions Which Exceed the Limits of the Data

This problem is addressed in several locations throughout the guidelines, which stress the preparation of clear reports supportable by laboratory documentation. The guidelines are explicit in warning examiners that "limitations of the results should be clearly stated."

Scientists Who Lack Objectivity

Managers are advised to protect staff from "unreasonable external pressures," which may be applied to influence an examiner's opinion and also to ensure that analysts explain what results mean and do not mean.

Failure to Convey Both Strengths and Weaknesses of Data

Managers are advised in several different sections to ensure that reports and testimony convey a balanced view of the data.

Failure to Report Unethical Behavior of Fellow Forensic Scientists

Although not addressed explicitly, the guidelines do advise managers they have an obligation to hear and attempt to resolve professional conflicts among laboratory staff.

Integrating Existing Rules and Codes

Before the development of the ASCLD *Ethical Guidelines* and the *Management Guidelines* which it references, only a handful of crime laboratory organizations around the country had adopted codes of their own. A survey of 50 criminalistics laboratories in the summer of 1987 yielded returns of only 6 such codes, many of which were of the parent police agency and not particularly relevant to forensic science matters. Some managers also reported that their laboratory had adopted the cognizant regional forensic association code and made it binding on its employees regardless of the individual analyst's membership status with that organization. In neither such provision—adoption of the regional association code or creation of individual laboratory regulations—were the special obligations of managers and supervisors specified; consequently, the ASCLD Management Guidelines assume great importance.

A growing number of laboratories around the country are adopting the ASCLD guidelines as official policy of their organizations. We believe such recognition and formal adoption is important.

- It commits management to see that written, validated procedures are in place and that they are followed. It also commits management to steps (proficiency testing, review of credentials, and verification of casework) that ensure the validity and objectivity of work performed and testified to in court.
- It commits the laboratory to provide a proper scientific working environment for its employees, including the equipment, resources, and opportunities for continuing education.
- It also commits the management of laboratories to see that employees are encouraged to participate in the activities of professional societies, including matters of ethics.
- In addition to the many useful guidelines for managers and supervisors, it informs caseworkers and higher administrative officials in the parent organization that the laboratory management is committed to achieving specified goals. Bench workers know what is expected of them and what they should expect from their supervisors; parent agency administrators are more likely to make good faith efforts to provide the laboratory with the resources required to achieve those ends.

Feasibility of Local Laboratories Adopting Codes

In earlier papers by Frankel [*15*] and Lucas [*16*] in this symposium, the critical importance of professional association codes in countering some of the adversarial qualities of the criminal justice system were described. Since, however, not every forensic scientist belongs to a regional or national forensic science association and not every supervisor/manager belongs to ASCLD, it is desirable for every public and private laboratory, to adopt such codes—and appropriate enforcement mechanisms—as official policy. Professional association codes of ethics may seem to be fairly abstract provisions to many benchworkers, but if they are adopted by the employing organization, their relevance will become much more apparent.

Most organizations, especially those in the public sector, are governed by personnel management regulations. Although procedures may differ, many contain a provision that the appointing authority may demote, suspend, dismiss, or otherwise sanction an employee for cause. Cause usually includes types of behavior including criminal or disgraceful conduct, falsification of information about one's credentials or employment, gross inefficiency or ne-

glect of duty, forms of behavior that may bring discredit to the employing agency, as well as the violation of any reasonable policy, procedure, or lawful order given by a supervisor [*17*]. Even if an agency chooses to include an association's code as one of the above "reasonable policies," the agency is not usually able to sanction an employee who violates a specific provision(s) because it will not usually be a charging offense. Even so, the violation of a specific ethics requirement can, however, be charged indirectly though the use of one of the broad charging offenses noted above.

Appendix A contains a description of a policy adopted by the Contra Costa County Criminalistics Laboratory in December 1987 which incorporates the ethics code of its regional association (the California Association of Criminalists) and the *Management Guidelines* of the American Society of Crime Laboratory Directors into its policies and procedures manual. Through recognition and adoption of both sets of guidelines for benchworkers *and* managers/supervisors, crime laboratories have the opportunity to implement a comprehensive set of standards for creating an environment in which individual scientists may pursue the highest professional status with the assurance that the parent agency will strive to provide the requisite resources and advancement opportunities.

APPENDIX A

The Contra Costa County Criminalistics Laboratory of Martinez, California, is one organization that has integrated the ethics code of its regional association, the California Association of Criminalists, and the guidelines of the American Society of Crime Laboratory Directors into its policy and procedures manual. This policy, dated 16 Dec. 1987, reads as follows:

Subject	*Code of Ethics*
Policy	Laboratory members will abide by the California Association of Criminalists Code of Ethics in so far as it applies to them, whether members or not, within the statutory and judicial constraints of the State of California and the United States. In addition, the management employees will perform their management duties in keeping with the American Society of Crime Laboratory Directors' Management Guidelines.
Reference	ASCLD Guidelines for Forensic Laboratory Management Practices, *Crime Laboratory Digest*, Vol. 14, No. 2, April 1987.
General Information	*A. Ethics Related to Scientific Activities* The Code of Ethics of the California Association of Criminalistics (Attachment A) expresses the philosophy of the laboratory management regarding the professional and technical conduct expected of all laboratory members. This Code is not a set of hard and fast rules, but rather a guideline to govern the employee's decisions in matters of ethics. The Code of Ethics may not supersede state or federal statutory or judicial laws. Consequently, when a conflict is perceived between the Code of Ethics and judicial proceedings, the decision of the court will control the actions of the employee. Employees are cautioned about relying *solely* on the prosecutor or defense counsel for interpretation of judicial requirements because of the adversarial nature of the attorneys and their respec-

tive biases. Where the requests of one attorney appear to require unethical behavior of the employee, it is appropriate and necessary to seek guidance from another knowledgeable source, including the employee's supervisor.

Because the nature of ethical standards is such that they are highly subjective, it is expected that employees may occasionally be unsure of the proper ethical conduct. In such instances, he/she is expected to confer with his/her supervisor for assistance. Ignorance is seldom an acceptable excuse for inappropriate professional conduct by the employee. An employee who abides by the California Association of Criminalists Code of Ethics, acts in a fair and objective manner toward all parties to the judicial system, and seeks guidance when in doubt will protect himself/herself from criticism for unprofessional conduct.

B. Ethics Related to Management Activities

The Guidelines for Forensic Laboratory Management Practices from the American Society of Crime Laboratory Directors expresses the guiding principles for this laboratory's management in conducting management activities. These guidelines require management employees to balance responsibilities to their employees, their employers, the public, and the profession. The best interests of each of these must be considered when making management decisions.

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