

ANSI/ASB Standard 154, First Edition  
2024

# Standard for Training on Testimony for Forensic Biology



**ASB**  
ACADEMY  
STANDARDS BOARD



## Standard for Training on Testimony for Forensic Biology

ASB Approved October 2022

ANSI Approved January 2024



410 North 21st Street  
Colorado Springs, CO 80904

This document may be downloaded from: [www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board)

*Users are permitted to print and download the document and extracts from the document for personal use, however the following actions are prohibited under copyright:*

- *modifying this document or its related graphics in any way;*
- *using any illustrations or any graphics separately from any accompanying text; and,*
- *failing to include an acknowledgment alongside the copied material noting the AAFS Academy Standards Board as the copyright holder and publisher.*

*Users may not reproduce, duplicate, copy, sell, resell, or exploit for any commercial purposes this document or any portion of it. Users may create a hyperlink to [www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board) to allow persons to download their individual free copy of this document. The hyperlink must not portray AAFS, the AAFS Standards Board, this document, our agents, associates and affiliates in an offensive manner, or be misleading or false. ASB trademarks may not be used as part of a link without written permission from ASB.*

*The AAFS Standards Board retains the sole right to submit this document to any other forum for any purpose.*

*Certain commercial entities, equipment or materials may be identified in this document to describe a procedure or concept adequately. Such identification is not intended to imply recommendations or endorsement by the AAFS or the AAFS Standards Board, nor is it intended to imply that the entities, materials, or equipment are necessarily the best available for the purpose.*

*Proper citation of ASB documents includes the designation, title, edition, and year of publication.*

*This document is copyrighted © by the AAFS Standards Board, LLC. 2024 All rights are reserved.  
410 North 21st Street, Colorado Springs, CO 80904, [www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board).*

## Foreword

This standard defines the minimum requirements for a forensic biology training program for testimony. The aim is to provide a framework for quality training that results in consistent, understandable, and accurate testimony.

The American Academy of Forensic Sciences established the Academy Standards Board (ASB) in 2015 with a vision of safeguarding Justice, Integrity and Fairness through Consensus Based American National Standards. To that end, the ASB develops consensus based forensic standards within a framework accredited by the American National Standards Institute (ANSI), and provides training to support those standards. ASB values integrity, scientific rigor, openness, due process, collaboration, excellence, diversity and inclusion. ASB is dedicated to developing and making freely accessible the highest quality documentary forensic science consensus Standards, Guidelines, Best Practices, and Technical Reports in a wide range of forensic science disciplines as a service to forensic practitioners and the legal system.

This document was revised, prepared, and finalized as a standard by the DNA Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Human Forensic Biology Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, [asb@aafs.org](mailto:asb@aafs.org) or 401 N 21<sup>st</sup> Street, Colorado Springs, CO 80904.

All hyperlinks and web addresses shown in this document are current as of the publication date of this standard.

ASB procedures are publicly available, free of cost, at [www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board).

**Keywords:** *expert witness, training, forensic biology testimony, DNA testimony.*

**Table of Contents**

1 Scope.....1

2 Normative References .....1

3 Terms and Definitions .....1

4 Requirements .....2

4.1 Genera .....2

4.2 Knowledge-based Training.....2

4.3 Practical Training .....4

4.5 Competency Testing.....5

5 Conformance.....6

Annex A (informative) Bibliography .....7

# Standard for Training on Testimony for Forensic Biology

## 1 Scope

This document provides minimum training program requirements for forensic biology practitioners on scientific and legal principles necessary to testify.

## 2 Normative Reference

The following reference is indispensable for the application of the standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ANSI/ASB Standard 022, *Standard for Forensic DNA Analysis Training Programs*, First Edition, 2019<sup>a</sup>

## 3 Terms and Definitions

For purposes of this document, the following definitions apply.

### 3.1 admissibility

A court determination whether the trier of fact may hear and consider the proffered evidence.

### 3.2 bench trial

A trial where the judge sits as the trier of fact.

### 3.3 cognitive bias

The class of effects through which an individual's preexisting beliefs, expectations, motives or situational context may influence the collection, perception, and interpretation of information or resulting judgments and decisions without the individual being consciously aware of this influence.

### 3.4 cross examination

The opportunity for the attorney (or an unrepresented party) to ask questions of a witness who has been called to testify by the opposing party.

### 3.5 deposition

Providing sworn testimony typically outside of a courtroom as part of discovery.

### 3.6 direct examination

The questioning of a witness by the party that has called that witness to give evidence, in order to support the case that is being made.

---

<sup>a</sup> Available from: [www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board).

### **3.7**

#### **discovery**

The exchange of materials by the parties in relation to a legal proceeding.

### **3.8**

#### **exculpatory evidence**

Evidence that may be favorable to the accused, impeach the prosecution's evidence, or mitigate the offense.

### **3.9**

#### **grand jury**

A group of citizens empaneled to investigate potential criminal conduct and/or determine whether probable cause exists to charge someone with a crime.

### **3.10**

#### **jury trial**

A trial where jurors sit as the trier of fact.

### **3.11**

#### **objection**

A lawyer's protest about the legal propriety of a question, response, or other evidence made with the purpose of obtaining a ruling from the trial judge about whether the question can be asked, the answer can be given, or the evidence can be admitted.

### **3.12**

#### **subpoena**

An order of the court for a witness to appear at a particular time and place to testify and/or produce documents in the control of the witness.

### **3.13**

#### **voir dire**

The examination of an expert witness in a court proceeding to assist the court in determining whether the expert has the necessary qualifications to testify about the subject-matter.

## **4 Requirements**

### **4.1 General**

ANSI/ASB Standard 022, *Standard for Forensic DNA Analysis Training Programs* shall be used in conjunction with this document because ANSI/ASB Standard 022 provides the foundational training program requirements upon which additional specific requirements, such as this document, will be based.

### **4.2 Knowledge-based Training**

**4.2.1** The laboratory's training program shall provide the trainee with the fundamental principles of forensic biology testimony.

**4.2.2** At a minimum, the knowledge-based training portion of the training program shall require review of the following.

- a) The laboratory's policies related to testimony and responding to discovery or other document requests.
- b) Transcripts or recordings of testimony of other analysts on analogous subject matter.
- c) Literature as assigned by the trainer, including applicable portions of case law and law on discovery.

**4.2.3** The knowledge-based training component of the laboratory's training program shall provide the trainee with a basic understanding of testimony and how to testify to include at minimum, the following topics.

- a) Courtroom terminology and legal concepts.

The training program shall cover courtroom terminology and legal concepts. Relevant terminology and legal concepts include but are not limited to the following: admissibility, bench trial, cross examination, deposition, direct examination, discovery, expert witness testimony, exculpatory evidence, court hearing, grand jury, jury trial, lay witness testimony, objection, subpoena, and voir dire.

- b) Courtroom procedures and demeanor.

The training program shall cover courtroom procedures and demeanor. Relevant subjects include but are not limited to court and jurisdictional differences (local, state, federal, military, criminal, civil, and administrative), the function of the judge, jury, courtroom personnel, expert witness and attorneys, order of court proceedings (e.g., oath, direct examination and cross examination), direction of answers to the jury or judge, conversation and behavior outside of the courtroom, appearance, attire, professionalism and tone.

- c) The ethical obligations of an expert witness.

The training program shall cover the ethical obligations of the analyst. This training is intended to supplement general ethics training received by the analyst, instructing the trainee on how ethics specifically applies to testimony or other applicable legal proceedings. Relevant subjects include but are not limited to the following.

- 1) Duty to testify truthfully, objectively and impartially without regard to which party calls the witness.
- 2) Duty to correct inaccurate or misleading testimony.
- 3) General disclosure principles including those addressed by the following cases:
  - i. *Brady v Maryland*, 373 U.S. 83 (1963),
  - ii. *Kyles v Whitley*, 514 U.S. 419 (1995),
  - iii. *Giglio v United States*, 40 U.S. 150 (1972);
- 4) Duty to testify in unambiguous terms, explain limitations/uncertainties, and clearly distinguish data from interpretation and opinion.

- 5) Duty to testify within the bounds of the analyst's education, training and area of expertise.
- d) Human factors and cognitive bias. The trainee shall gain an understanding of how human factors and cognitive bias impact analysis, interpretation, conclusions, testimony, or legal proceedings.
- e) Admissibility standards. The training program shall cover the admissibility of scientific evidence. Relevant subjects include but are not limited to the following as appropriate:
  - 1) Frye v United States, 293 F. 1013 (D.C. Cir. 1923);
  - 2) Daubert v Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993);
  - 3) General Electric v. Joiner, 522 U.S. 136 (1997);
  - 4) Kumho Tire v. Carmichael, 526 U.S. 137 (1999);
  - 5) Federal Rules of Evidence 401 through 403 and 702 through 706, or applicable jurisdictional rules or statutes governing expert testimony.
- f) Relevant law related to pretrial discovery and the responsibilities of the parties, the laboratory, and the analyst, including pretrial communication with parties and entities.
- g) Jurisdiction-specific case law applicable to forensic biology evidence (e.g., confrontation clause),

### **4.3 Practical Training**

**4.3.1** The practical component of the laboratory's training program shall provide the trainee with sufficient practical instruction for the trainee to obtain the skills for successfully testifying in court related to forensic biology. At a minimum, the practical portion of the training program shall include the training in 4.3.2 through 4.3.4.

**4.3.2** Observation and/or review of testimony.

- a) Testimony shall cover subject matter relevant to the job functions of the trainee.
- b) Live observation or testimony review (e.g., transcripts, recordings) shall include different types of legal proceedings (e.g., bench trials, jury trials, depositions).

NOTE The trainee can observe or review testimony provided by non-laboratory personnel (e.g., lay-witnesses), opening and closing arguments by both the prosecution and defense, and other court proceedings such as admissibility motions.

**4.3.3** Instruction and discussion on pre-trial preparations to include the following:

- a) review of relevant policies and procedures in place at the time of case analysis and any changes since the analysis;
- b) disclosure of special case circumstances (e.g., contamination, errors, relevant corrective actions, or procedural deviations);



- c) review and compilation of literature that may be relevant to the case;
- d) work with attorneys to develop appropriate questions for direct examination;
- e) effectively communicate with all parties in an unbiased and truthful manner;
- f) case record review including case-specific discovery documentation.

**4.3.4** Oral exercises with instructor(s) (or designees) for witness testimony to include the following:

- a) properly and completely explaining their education and qualifications;
- b) presenting the underlying scientific principles in such a manner that a trier of fact (e.g., judge or jury) will understand the subject matter of the testimony;
- c) presenting complex scientific information in a coherent, accurate and unbiased manner in various different types of proceedings (e.g., jury trials, bench trials, depositions);
- d) explaining the theoretical and factual basis for any conclusion and the reasoning on which the conclusion is based;
- e) explaining the limitations and the uncertainties of the testing and the interpretation of the data;
- f) supporting scientific testimony with background knowledge from training, scientific literature, validation studies, etc.;
- g) effectively answering questions under direct and cross examination in an unbiased and truthful manner;
- h) responding appropriately to an objection and to the judge's ruling.

NOTE Oral exercises may be accomplished via mechanisms including but not limited to informal question and answer sessions, practice testimony sessions where the questions are known to the trainee, and practice testimony sessions where the questions are unknown to the trainee.

## **4.4 Competency Testing**

### **4.4.1 General**

The competency test(s) of the laboratory's training program shall require the trainee to demonstrate knowledge-based and practical competency in providing testimony in their areas of expertise. The format of the test(s) shall meet Section 4.3 of ANSI/ASB Standard 022, *Standard for Forensic DNA Analysis Training Programs*, First Edition, 2019.

### **4.4.2 Knowledge-based Competency**

The trainee shall successfully complete a knowledge-based test covering the critical information obtained during the training on testimony for forensic biology. The format of the test(s) shall be at the discretion of the DNA Technical Leader or their equivalent. The test(s) shall cover, at a minimum, the topics outlined in section 4.2 in this document.

#### **4.4.3 Practical Competency**

The trainee shall successfully complete a mock trial exercise covering elements of 4.3.4 in this document and the successful completion of the mock trial exercise shall be documented.

### **5 Conformance**

In order to demonstrate conformance with this standard, the laboratory shall meet applicable elements of Section 5 of the ANSI/ASB Standard 022, *Standard for Forensic DNA Analysis Training Programs*.

## Annex A (informative)

### Bibliography

The following information provides a list of the literature resources that may assist the DNA Technical leader or designee in defining the breadth and scope of the materials to be reviewed by the trainee. This list is not meant to be all inclusive. A laboratory develops a list tailored to its specific needs. Updated references are added to the laboratory's list as needed.

- 1] Faigman, D. *Modern Scientific Evidence: The Law and Science of Expert Testimony*. Social and Behavioral Science, 2018.
- 2] *National Commission on Forensic Science*. Reporting and testimony documents adopted by U.S. Department of Justice.<sup>b</sup>
- 3] *National Research Council (NRC). U.S. Department of Justice*. DNA Technology in Forensic Science, 1992.<sup>c</sup>
- 4] *National Research Council (NRC). U.S. Department of Justice*. The Evaluation of Forensic DNA Evidence, National Academy Press, 1996.<sup>d</sup>
- 5] *National Research Council (NRC). Committee on Identifying the Needs of the Forensic Science Community; Committee on Applied and Theoretical Statistics*. Strengthening Forensic Science in the United States: A Path Forward, 2009.<sup>e</sup>
- 6] *President's Council of Advisors on Science and Technology, Executive Office of The President's Council of Advisors on Science and Technology*. Forensic science in criminal courts: Ensuring scientific validity of feature-comparison methods, 2016, Washington DC.<sup>f</sup>

---

<sup>b</sup> Available from: <https://www.justice.gov/archives/ncfs/work-products-adopted-commission>

<sup>c</sup> Available from: <https://www.nap.edu/read/1866/chapter/1>

<sup>d</sup> Available from: <https://www.nap.edu/read/5141/chapter/1>

<sup>e</sup> Available from: <https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>

<sup>f</sup> Available from: <https://obamawhitehouse.archives.gov/administration/eop/ostp/pcast/docsreports>



**ASB**  
**ACADEMY**  
**STANDARDS BOARD**

Academy Standards Board  
410 North 21st Street  
Colorado Springs, CO 80904

[www.aafs.org/academy-standards-board](http://www.aafs.org/academy-standards-board)