

# FORENSIC BIOLOGY TRAINING MANUAL

Training Program Guidelines		
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## A. Theoretical background

In addition to requiring a minimum educational background for the job title(s), the Department provides additional theoretical background necessary for trainees to understand the scientific basis behind each analytical test. The training program also includes instruction in general topic areas such as ethics, general forensic science, quality assurance/quality control, and basics of the legal system. This training takes place over a number of weeks through the required lectures and reading assignments. Most lectures are also available as computer presentations maintained in the departmental directory.

Each member of the scientific staff has access to literature references and reference books maintained by the department including methods manuals used in the laboratory which contain reference bibliographies for the scientific procedures. Publications pertaining to in-house methods are given to each trainee in the form of an online Reference Articles. Additionally, OCME professional staff has library and Internet privileges at the neighboring New York University Medical School library.

## B. Practical experience

Each analyst will be trained to perform the analytical procedures that are appropriate to the job title and specific work assignment. Practical training may include up to three phases: the trainee observes the procedure being performed; the trainee uses practice specimens to demonstrate the procedure to the trainer; and the trainee uses practice specimens to perform the procedure independently. It may be necessary for a trainee to demonstrate a procedure multiple times until a trainer determines that the trainee can perform the procedure independently. Practical training for procedures currently in use that have been updated or revised may or may not require all three training phases.

Analysts with previous experience, either from another accredited laboratory or previous OCME training, at the discretion of the Training Supervisor, Assistant Director, Technical Leader, and/or Director may have their practical training modified. This modification will be documented in the training folder.

## C. Competency testing

At the conclusion of the practical training in any particular analytical procedure, the trainee is expected to successfully complete a competency test (if applicable) using that procedure. In general, a competency test is prepared in-house with the key to the results being supplied to the supervisor, Assistant Director, Technical Leader, and/or Director. Successful completion of each module is documented on the competency tracking sheet or via a certificate of completion issued by the Training Group.

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## D. Knowledge, Skills and Ability Assessments

A written assessment will be given as a part of each module; the results of which will be graded by the appropriate trainer. A passing grade is a score of 70% or higher. A grade of less than 70% is deemed a failure. Additional questions may be provided as a result of a failing grade. Each Criminalist has a maximum of two attempts at any written assessment.

After the first failing assessment, the Criminalist will be given the opportunity to remediate on the written assessment. If a Criminalist has not passed a written assessment after two attempts, the Criminalist fails the entire module.

## E. Written assignments and oral examination

New scientific staff must complete a written assignment for each module they are trained in. The written assignment is reviewed by the Technical Leader, training supervisor or designee.

All new scientific staff or promoted interpreting analysts must take and pass an oral examination covering several areas of serology, examination, DNA theory and/or analysis. Each Criminalist has a maximum of two attempts to pass the full examination. The determination of whether or not a Criminalist passes the examination is at the discretion of the examination committee. At the examination committee's discretion, the Criminalist shall have up to two attempts to remediate each full examination. The committee is not obligated to grant any remediation.

If a Criminalist has not passed the full oral examination after two attempts, or any of their required modules, the Criminalist may be subject to demotion or termination.

A Criminalist I's oral exam is attended by their supervisor and examiner. A Criminalist II's or higher oral exam is attended by a manager and examiner.

In addition to the basic DNA oral examination, mtDNA interpreting analysts are required to take and pass a mtDNA oral exam covering mtDNA theory and methods.

## F. Court preparation

An important part of training is learning to present scientific information in court. There are several ways for trainees to prepare for court and public speaking: observing the testimony of laboratory personnel at court, attending pre-trial conferences, and testimony training. Before testifying in court or grand jury, Criminalist must successfully complete an internal courtroom testimony training module. The purpose of the courtroom

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testimony training module is to give the analyst an introduction to the courtroom process as well as practical testimony experience prior to actual testimony in a trial or grand jury. It is also a mechanism for the supervisory staff to identify and correct any problems the analyst may have in his/her knowledge or ability to communicate effectively.

Moot/Mock court training consists of practice testimony covering all areas of testimony including qualifications, voir dire, and direct and cross examination using case examples. The Criminalist practices giving testimony in those areas with the training group prior to being tested in a mock court scenario.

The Criminalist's testimony is evaluated by a jury comprised of qualified scientific staff (DNA interpreting analysts with at least two trial testimonies or training staff). Checklists are used to structure the evaluation of the trainee's performance in each mock court. After the moot/mock court, constructive criticism of the trainee's testimony is given, and, if needed, specific suggestions for improvement are provided. The "judge" will provide a written Moot Court Testimony Evaluation grade. An average grade of  $\geq 70\%$  or greater must be achieved by the Criminalist to pass. Grades should be provided in writing to the analyst, their supervisor and the training group within two business days after the moot/mock court. Successful completion of the moot/mock courts must be documented in the training record. It is possible that even with a passing grade the Criminalist's supervisor, along with the training group, may decide that the Criminalist perform an additional moot mock court for practice purposes

At any point during the moot/mock court if the trainee is severely underperforming, either the "prosecutor" or judge may stop the court by asking for a sidebar, excusing the witness and making a decision to stop or continue the moot/mock court. If all evaluators agree to stop the court, the testimony is deemed an automatic fail and no calculated score is needed. If there is ambiguity, then testimony must continue, and a final score provided.

An analyst who does not achieve an initial passing grade, must complete and pass a second moot/mock court within one month. The second moot/mock court should have the same level of complexity as the original case. If a Criminalist has not passed the DNA moot/mock court after two attempts, the Criminalist may be subject to demotion or termination.

Criminalist I's will undergo a Serology Moot Court approximately two weeks after completion of their oral exam. The serology moot/mock court covers the initial forensic biology training topics, evidence exam and serology testing.

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Criminalist II's and above will undergo a DNA Moot Court approximately two weeks after completion of the oral exam. The DNA moot/mock court covers all forensic biology training topics and should include complex cases, such as those with deconvolutions, STRmix or other statistics, a suspect comparison, more than one sample or incomplete profiles.

If a person is hired at the Criminalist II or higher level or if person is promoted to a Criminalist II (and has not undergone a Serology Moot Court prior to promotion) a Serology Moot Court must be completed within the first two weeks of training. The Serology Moot Court is considered a precursor to the DNA Mock Court. The attending staff members will critique the performance. Successful completion of the Serology Moot Court will be determined by the staff in attendance. The Serology Moot Court will be graded as Pass or Fail.

Analysts who train in specialized DNA techniques such as mitochondrial DNA testing and high-sensitivity DNA testing may be required to pass an additional moot/mock court covering the specific topic area.

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## G. Continuing and Supplemental Training

Analysts are trained in new procedures as they are added and as their job duties change. Supplemental training may include a lecture covering the theoretical and practical aspects of the new procedure; a reading list selected from the scientific literature and full (three-step) or modified practical training. Modified training for current staff may include, but is not limited to, a practical or video demonstration of the technique and a set of written questions. The modified training may or may not include a bench practice and competency of the analytical procedure. The use of modified training is determined by the Training Supervisor, Assistant Director, Technical Leader, and/or Director prior to casework implementation. Modified training may be different for the different title levels.

An analyst must pass the competency test prior to performing the procedure on casework. Successful completion of each module is documented on the competency tracking sheet or via a certificate of completion issued by the Training Group.

The specific requirements of continuing and supplemental training for each procedure are determined by the appropriate Technical Leader or training supervisor. When a new procedure or technique is established in the Laboratory, a training module is added or updated in the Training Manual appendix.

## H. Retraining

Retraining can be the result of requests from supervisors or analysts or in response to a proficiency test or casework corrective action.

The retraining program initiated at the request of an analyst or supervisor will be determined by the Training coordinator and can involve additional observations, practices or competency tests depending on the needs of the analyst.

If it is determined by the Quality Assurance Manager and/or a Technical Leader that a deficiency in proficiency testing or casework is the result of analyst's lack of understanding of the methods, procedures, and/or protocols used by the laboratory, the analyst will be prohibited from performing the test in casework until he/she has been re-trained, and a new competency test has been successfully completed. In these cases, all re-training must be performed in accordance with the general and specific training guidelines specified in the Forensic Biology Training Manual.

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## I. Continuing Education

Continuing education is an educational activity that is offered by a recognized individual or organization that brings participants up-to-date in their relevant area of knowledge. Analysts are provided the opportunity to obtain continuing education through attendance at scientific meetings and seminars both onsite at the Department of Forensic Biology and offsite.

Each analyst's earned Continuing Education hours are documented and maintained by the Training Group.

Every Forensic Biology employee is required to review the *ANAB Guiding Principles of Professional Responsibility for Forensic Service Providers and Forensic Personnel*.

Documentation of content and attendance of continuing education activities is provided by sign-in sheets, certificates of attendance, program agenda/lecture title, travel authorization, resume/publication/other documentation of the credentials of the presenter(s), and other means, depending on the type of event and the manner the continuing education is delivered. Continuing education talks presented by Forensic Biology members, as well as talks given by external presenters, are maintained on the Forensic Biology network. Continuing education delivered through multimedia or Internet delivery is subject to approval, and reviewed upon completion, by the appropriate Technical Leader.

Records are maintained by the Training Group for at least one ANAB cycle of accreditation.

## J. Review of Current Literature

The Forensic Biology Assistant Director assigned to Training or designee distributes relevant, scientific articles of interest to staff via e-mail on a regular basis, usually monthly. These articles are stored by the Training Group on the Forensic Biology server. Analysts are also encouraged to read other scientific articles of interest.

Analysts document their reading of the distributed articles and/or other scientific literature via a record distributed quarterly by the Training Group.

Records are maintained by the Training Group for at least one ANAB cycle of accreditation.