

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 practical training phases.

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. Re-competency for legacy amplification kits will be done on a bi-annual (every two years) basis or as needed. The re-training will consist of a competency test provided by the appropriate Technical Leader or designee. Legacy manuals will be provided for the competency. The

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results will be graded and approved by the appropriate Technical Leader or designee. If a person does not pass their legacy re-competency the Technical Leader will be consulted, and the analyst will not be allowed to interpret any cases with legacy kit analysis.

Based on the FBI QAS DNA Standard 6.2, 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 training modified to include demo and competency. This modification will be documented in the training folder.

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.

New scientific staff (regardless of level) will undergo a technician oral examination at the completion of their practical bench training. Promoted Criminalist II's (who did not undergo a technician oral exam prior to promotion) will undergo a technician oral exam prior to DNA analysis/interpretation training. The technician oral exam will cover the topics of serology, examination, quality control and all practical areas and theory up to DNA analysis. The technician oral exam will be attended by a supervisor and examiner.

A DNA interpreting Criminalist II or higher will undergo a DNA oral exam at the completion of their DNA analysis and interpretation training. The DNA oral exam will cover the topics of nuclear and mitochondrial DNA theory, analysis, interpretation,

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statistics, CODIS and case management. The DNA oral exam is attended by a manager and examiner.

Each Criminalist must pass the full oral examination. The determination of whether 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 the examination. The committee is not obligated to grant any remediation. If a Criminalist has not passed the oral examination after two remediations, or any of their required modules, the Criminalist may be subject to demotion or termination.

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 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 60% or greater for the serology moot court and 70% or greater for the DNA moot court 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

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moot/mock court. Successful completion of the moot/mock courts must be documented in the training record.

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 moot/mock court after two attempts, the Criminalist may be subject to demotion or termination.

Successful completion of the moot/mock courts must be documented in the training record. It is possible that even with a passing grade (performance issue, score discrepancies), the Training Manager and the DNA Technical Leader may decide that the Criminalist perform an additional moot/mock court.

New or promoted scientific staff (Criminalist II and above) will undergo a Serology Moot Court prior to beginning their DNA interpreting analyst training. Passing of the serology moot court is a requirement for an analyst to begin DNA interpreting analyst training. The serology moot/mock court covers the initial forensic biology training topics, evidence exam and serology testing.

An average grade of 60% or greater for the serology moot court must be achieved by the Criminalist to pass. An analyst who does not achieve an initial passing grade, must complete, and pass a second serology moot/mock court. If a Criminalist has not passed the serology moot court after two attempts, or any of their required modules, the Criminalist may be subject to demotion or termination.

Criminalist II's and above will undergo a DNA Moot Court approximately two weeks after completion of the DNA 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.

An analyst who does not achieve an initial passing grade of 70%, must complete, and pass a second DNA moot/mock court. The second DNA moot/mock court should have the same level of complexity as the original case. If a Criminalist has not passed the

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moot/mock court after two attempts, the Criminalist may be subject to demotion or termination.

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

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.

If an analyst or technician falls out of the proficiency test cycle, they must pass a re-competency before resuming casework. Re-competency can be established in one of two ways:

Passing an internal proficiency test administered by the QA/QC group.

Passing an external proficiency. They must wait until the results are received before being deemed re-competent in the procedure(s).

An analyst or technician can request a “refresher” demonstration and/or additional training on the technique(s) before performing the re-competency. The re-competency will be technically reviewed by the analyst’s or technician’s supervisor or manager. A second technical review will be performed by the appropriate

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Technical Leader, who will then determine if the analyst/technician has passed their re-competency.

If the analyst or technician fails their re-competency, refer to section H for retraining procedures.

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.

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

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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 on a regular basis, usually monthly. These articles will appear in the Criminalists Qualtrax inboxes and are stored within the Qualtrax Forensic Biology Training Folder, sorted by year. 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 Qualtrax.

Records from 2017 and later are maintained in Qualtrax. Records before 2017 are maintained by the Training Group for at least one ANAB cycle of accreditation.