

**CH SOP-15- Training Procedures for Chemistry and Instrumentation**

*Approved by Director: Dr. Guy Vallaro*

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**Title: Training Procedures for the Chemistry Unit**

As of January 2011 the following training outline will be followed for all persons newly assigned to the Chemistry Unit. The amount of time necessary to achieve proficiency in any area may be affected by the previous experience and training of the individual examiner, but all tasks should be completed within 12 months.

**I. Introduction:** The first chapters of this training manual are common to all Sections of the Laboratory. The trainee is responsible for knowing the general concepts of these chapters before beginning training in a specific area.

Completed

Initials

Date

**Goals:**

- Upon completion the examiner will be familiar with the A & O manual, safety manual, forensic laboratory operation, Laboratory Information System (LIMS), and individual responsibilities

**Tasks:**

- Orientation to the laboratory facility and personnel
- organization structure, code of ethics, and chain of command
- Security and confidentiality requirements.
- Introduction to quality control and quality assurance including required documentation
- Safety procedures - chemical and biohazard, incident reports,

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**fire/emergency procedures**

**Reading:**

- **Laboratory Quality Manual (given own copy)**
- **DPS A & 0 Manual**
- **Emergency and Safety Manuals (given own copy) Section QA/QC procedures**

**Assessment:**

- **Oral or written evaluation by Lead Examiner**
- **Signed receipts**

**II. Evidence Handling**

**Goals:**

- **To handle evidence in a manner appropriate for the Unit and to preserve evidence which may be analyzed by other sections of the Laboratory.**
- **To learn the operation of the JusticeTrax (JT) system, item assignment, and the maintenance of chain of custody for evidence.**
- **To demonstrate proficiency in the basic tasks necessary to complete evidence transfer functions and create a chain of evidence**

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**Reading:**

- **Quality Manual**
- **JT training documentation**

**Assessment:**

- **By appropriate Lead Examiner**

**III Foundational Scientific Knowledge**

**Goals:**

- To ensure examiners have both the formal education and working knowledge of the fundamental basis of chromatography/chemistry.

**Tasks:**

- Document [List any coursework and training-received prior to or during the training period which has been identified as essential to the well-trained person performing the analyses for that area/section] See resume.
- Reading [List any guidelines or recommendations by the scientific working groups (SWGs) or Professional organizations which are recognized as generally acceptable] See bibliography.

**Assessment:**

- **Completed by the Lead Examiner**
- **Document the review of the educational guideline/requirements**

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#### **IV. Applied Technical Knowledge**

##### **Goals:**

- To demonstrate specific knowledge related to the field of chromatography/chemistry or other job-related disciplines. Detail required should correspond to the types of testing and the level of independent work required, corresponding to the applicable job description.

##### **Tasks:**

- To provide instruction on the theory and legal challenges to the following:
- Chromatographic analysis, wet chemistry methods, GC, GC/MS, SEM/EDS and /or other instrumentation required to perform assigned duties

##### **Required reading**

- Validation studies both internal and external for the various procedures. See ASTM methods.

##### **Assessment:**

- Documentation of successful completion of each task by written &/or oral examination
- Notation on checklist/ memo that applied scientific knowledge has been achieved

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## V. Laboratory Analytical procedures

### Goals:

- To provide practical instruction to examiner on analytical procedures carried out as routine tests by persons in the job description of the examiner

### Tasks:

- To provide instruction and training in the following technical procedures: GC, GC/MS, SEM/EDS and wet chemistry methods

### Required Reading:

- Unit Technical procedures (SOP's)
- Corresponding journal articles relating to specific procedure, as applicable (see included articles)

### Assessment:

- Evaluation of each procedure in the hands of the examiner by the appropriate Lead Examiner .
- Side-by-side examination of evidence with Lead Examiner
- Competency test completion for each type of examination.  
Includes samples which correspond to a mock case, as compiled by

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the Lead Examiner or Deputy Director.

- Documentation of the readiness for casework by the Lead Examiner in the form of memo (see Quality Manual)

## VI. Report Writing

### Goals:

- To learn the laboratory protocol for report writing and review including the use of JusticeTrax

### Tasks:

- Laboratory interpretation guidelines and interpretation guidelines for the Unit
- Statistical calculations, where appropriate
- Report writing in JusticeTrax or other format
- Written examples of reports pertaining to all aspects of the Unit casework

### Required reading:

- JusticeTrax documentation and handouts on "successfully logging in closed cases" or "crystal reports"
- Review of reports with case jackets relating to various types of

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cases and scenarios as determined by the Lead Examiner.

**Assessment:**

- Sample data/results given to the examiner to interpret and write a report
- Demonstrate proficiency in Crystal reports or other necessary areas
- Complete written report of competency test results.
- Documentation of these processes by the Lead Examiner.

**VII. Legal Issues**

**Goals:**

- To become familiar with the legal requirements for testimony in Connecticut

**Tasks:**

- Examiner will receive instruction on the requirements and testimony related to:
  - Qualifications
  - Technical testimony
  - Courtroom dress & demeanor

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- Ethical responsibilities of expert witnesses
- Laboratory courtroom monitoring procedures and reports
- Presentation of evidence
- Pertinent rules of the courtroom

**Required reading:**

- Transcripts or sample testimony
- State admissibility requirements (*State v. Porter*)
- Admissibility, in general -*Frye, Daubert, etc.*

**Assessment.**

- Oral or written questions by the Lead Examiner or Deputy Director. Moot court - each examiner who is new to the laboratory or to an area shall demonstrate expertise by Moot court. Documentation of the Moot court should contain *an* evaluation in memo form of the examiner's responses and demeanor.
- Assessment method, in general: For general requirements of training, A checklist for each of the above listing the specific skills, knowledge or ability demonstrated or a particular requirement, e.g. review 20 case files, should be prepared. This would be signed



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off by for each step by the Lead Examiner doing the training and the examiner. At the end of the training program a memo would be written that all training is complete, as outlined in the Quality Manual.

- Examiners/Analysts will be authorized to perform technical reviews after gaining experience through the completion of at least one (1) case.

## VII. Bibliography

[List all important journal articles, books, or other materials which will be made available to the examiner in the area listed]