

# Continuing Education

Jack Ballantyne

University of Central Florida, Orlando, Florida  
([jack.ballantyne@ucf.edu](mailto:jack.ballantyne@ucf.edu))





# Education versus Training

- *The aim of education should be to teach us rather how to think, than what to think—rather to improve our minds, so as to enable us to think for ourselves, than to load the memory with the thoughts of other men.”*

~Bill Beattie

- *Training is activity leading to skilled behavior i.e. providing an individual with specific knowledge, skills and abilities that permit an individual to perform a specific job function*
- *Continuing education can be education and/or training (CET)*
  - *Mechanism by which a person already educated and trained keeps up to date with new knowledge or methods*

# Purpose of CET in the Forensic DNA Mixture Analysis Field

To keep abreast of advances in the field and to facilitate implementation of any necessary changes in order to ensure that the laboratory's end-users are best served.

For Court purposes

- To be aware of any limitations of the the mixture analysis method actually used
- To understand the similarities and differences between the lab's method and alternative products

QAS (current Standard 5 or proposed (2019?) Standard 16 Professional Development)

- **Continuing education** is an educational activity (such as a class, lecture series, conference, seminar, or short course) that is offered by a recognized organization or individual that brings participants up to date in their relevant area of knowledge.
- **CEU (IACET)** : One (1) Continuing Education Unit (CEU) equals ten (10) contact hours of learner interaction with the content of the learning activity, which includes classroom, self-paced instruction, pre/post assignments, and/or homework in support of a learning outcome.

A contact hour is one clock hour of interaction between a learner and instructor, or between a learner and materials, which have been prepared to cause learning. Contact implies a connection between a learner and a learning source.

- Forensic science does not currently use CEUs as a CET metric  
Physicians normally require at least 2 CEUs per year (2-5)
- ‘Passive learning’ such as reading journal articles is not normally regarded as counted CET and is not counted towards CEUs  
But reading journal articles is an important part of a forensic scientist’s professional development

## Current QAS CE Requirements (2011, Standard 5 Personnel)

5.1.3 Have a documented program to ensure technical qualifications are maintained through participation in continuing education.

5.1.3.1 Continuing education: The technical leader, casework CODIS administrator, and analyst(s) shall stay abreast of developments within the Quality Assurance Standards for Forensic DNA Testing Laboratories Effective September 1, 2011 field of DNA typing by attending seminars, courses, professional meetings or documented training sessions/classes in relevant subject areas at least once each calendar year. A minimum of eight cumulative hours of continuing education are required annually and shall be documented. *(i.e. equivalent to 0.8 CEUs)*

5.1.3.2 The laboratory shall have a program approved by the technical leader for the annual review of scientific literature that documents the analysts' ongoing reading of scientific literature. The laboratory shall maintain or have physical or electronic access to a collection of current books, reviewed journals, or other literature applicable to DNA analysis.

# Professional Development

- Attendance at organized courses, seminars, professional meetings, etc.
- Familiarization with the Literature

# Some Possible Recommendations Discussed

- Time for professional development: Casework analysts should be given 5% of their paid time (e.g. two hours per week) to review articles published in the scientific literature
- Literature awareness (exposure): Analysts and TLs should register to receive regular updates on current literature (e.g. Jeff Teitelbaum's Forensic Library Service Bureau emails; new service may be needed to focus on forensic DNA issues?)
- Literature access: The laboratory should provide access to relevant journals (local university partnership?). ISFG membership provides access to *FSI Genetics*.
- Literature reading training: Funding agencies such as NIJ or NSF, should fund development of an on-line course for analysts and TLs regarding effective searching and reading of the literature to enable critical thinking; academic instructors or researchers should create such a course.
- Literature lists for relevant topics: Researchers should be encouraged to write useful review articles and publish lists of highly relevant articles; the NIST STRBase website could maintain a listing of “best” articles in particular areas (will require on-going curation)