Discussion

Staring a Radionuclide Metrology Program:

What do you need for the Life Sciences?

IAEA Project

Brian E. Zimmerman

Physics Laboratory, National Institute of Standards and Technology,
Gaithersburg, MD 20899-20899, USA

NIST Perspective

Jeffrey T. Cessna

Physics Laboratory, National Institute of Standards and Technology,
Gaithersburg, MD 20899-20899, USA

Essential

- Mandate
  - The lab must have the authority and instruction to be the metrology laboratory for radionuclide metrology
- Support
  - There must be support and understanding of primary measurements from management
- Focus
  - Metrology must be the primary purpose
- Access to education and experience

Aspects of a Metrology Program

- Primary Measurement Methods
- Standard Reference Materials
- Calibration Services

- Traceability to Users
- Traceability to BIPM

Equipment

- Commercial LS Counter
- TDCR
- (anti) coincidence counting system
- Secondary Standard Ionization Chamber
- Radionuclide Activity Calibrators
  - Capintec
  - NPL
  - Most commonly used
- Ge detectors

Lab Equipment

- Radioactivity rated fume hood
- microbalance
- high capacity balance
  - carrier solutions
  - batch production
- ampoule sealer
- automated dispenser
- Hot Cell

Support

- Contamination monitors
- Survey meters

- Health Physics
- Radioactivity license

Personnel

- Chemistry experience
- Physics knowledge
- Equipment experience

- Technician – don’t try to work without them

Input?