SIM Activities (CCRI(II)-33)

Input and Support for the CCRI Strategy in Radionuclide Metrology

- Short Term
  - SIRTI Comparisons
  - Increased NMI/DI dialogue
  - Dosimetry for diagnostic Imaging
- Medium Term
  - Public security
  - SIRTI beyond Tc-99m
  - Molecular imaging
- Long term
  - Radiation therapy
  - New radionuclides
  - Biologically related quantities
  - Non-reactor based methods

ID	Title	Section II	Next Cycle Short Term: 2013-2015 Medium Term: 2016-2019 Long Term: 2020-2023
	Short term		
a	Finish KC and SC reports quicker, focused on CMC-support	C	**Complete 2012**
b	Harmonise stringency in uncertainties	P	Short (Expect completion)
d	Activity (SIRTI) comparisons – establish ^{99m}Tc	C	**Complete 2012**
f	Brachytherapy comparisons - establish	P	**Medium**
i	Increase meaningful dialogue between NMIs and DIs	P	Short (On-going)
l	Dosimetry for diagnostic imaging - identify metrology needs	P	Short (On-going)
m	Recommended values for physical constants - publish	P	Short (On-going)
	Medium term		
g	Activity (SIRTI) comparisons – ongoing ^{99m}Tc	P	**Short (On-going)**
h	Brachytherapy comparisons - ongoing and new		**Long**
m	Instrument for maintaining the Bq	P	**Short (Expect completion)**
n	Consistent radionuclide decay schemes	P	Medium (On-going)
o	New needs in public security	P	Medium (On-going)
p	New needs in health	P	Medium (On-going)
q	New needs in industry	P	Medium (On-going)
s	Extend SIR to pure α and pure β emitters	P	**Short (Expect completion)**
t	SIRTI for more short-lived radionuclides – ^{18}F	P	Medium (On-going)
u	Molecular imaging measurement needs	P	Medium
	Long term		
a	Satisfying new needs in radiation therapy	P	Long
b	Standardization methods for new radionuclides	P	Long
c	Introduction of new biologically related quantities	P	Long
e	Evaluate non-reactor based methods of radionuclide production	P	**Medium**

SIM Awareness Event: Increasing Dialogue

Workshop on Radiation Metrology

10 November 2011

- >100 years of history, recent events
- Societal benefits and concerns
- Applications
  - Medical
  - Energy
  - Industrial processing
  - Environmental stewardship
  - Safety and security
  - Regulations and commerce

9:00 – 9:05	Welcome to the Workshop		
9:05 – 9:30	What Is Ionizing Radiation?	*Margarita Saravi, CNEA*	*Argentina*
9:30 – 10:00	Fundamentals of Radiation Dosimetry	*Malcolm McEwen, NRCC*	*Canada*
10:00 – 10:20	Modeling and Calculational Approaches	*Frédéric Tessier, NRCC*	*Canada*
10:20 – 10:50	Fundamentals of Radionuclide Metrology	*Brian Zimmerman, NIST*	*USA*
10:50 – 11:10	**Coffee Break**		
11:10 – 11:30	World-Wide Radiation Metrology	*Lisa Karam, NIST*	*USA*
11:30 – noon	Fundamentals of Neutron Physics	*M. Scott Dewey, NIST*	*USA*
noon – 13:00	**LUNCH (on your own)**		
13:00 – 13:20	Neutron Tomography for Energy Applications	*Muhammad Arif, NIST*	*USA*
13:20 – 13:40	Radiation Processing	*Malcolm McEwen, NRC*	*Canada*
13:40 – 14:00	Detecting and Using Radiation in Security Applications	*Leticia Pibida, NIST*	*USA*
14:00 – 14:20	Neutron Applications in the Petroleum Industry	*Carlos José da Silva, LNMRI/IRD*	*Brazil*
14:20 – 14:40	Alternative modes of Medical Isotope Production	*Raphael Galea, NRCC*	*Canada*
14:40 – 15:00	Toward Quantitative Medical Imaging	*Brian Zimmerman, NIST*	*USA*
15:00 – 15:20	**Coffee Break**		
15:20 – 15:40	Radiation Dosimetry in Health Care	*Margarita Saravi, CNEA*	*Argentina*
15:40 – 16:00	Quality Systems in Radiation Metrology	*M. Elizabeth Acar, LNMRI/IRD*	*Brazil*
16:00 – 16:20	Proficiency tests in the determination of activity of radionuclides in radiopharmaceuticals	*Carlos José da Silva, LNMRI/IRD*	*Brazil*
16:20 – 17:00	**Questions and Discussions**		

SIM Activities

Impacts

- SIRTI
  - NIST, CNEA, (soon) LNMRI
  - Foundation for National programs
- Improved NMI/DI communication
  - Enabling establishment of quality
  - Facilitating visibility internationally
  - Improved outreach to stakeholders
- Other down-stream impacts
  - Incoming DIs encouraged by example (3-4 new DIs anticipated)
  - International support for re-invigorated programs
  - Increased visibility on a national level (influence on policy)