



PETRA TOMSE: Slovenia

Image Analysis in Nuclear Medicine and Molecular Imaging.



Petra Tomse is a Specialist Medical Physicist from the Department of Nuclear Medicine, University Medical Centre in Ljubljana, Slovenia. At her home institution she is responsible for the planning and evaluation of quality control of nuclear medicine equipment, radiation protection of patients and department staff and reconstruction and analysis of images for the purpose of dosimetry calculations and statistical comparisons with clinical data or healthy control data. Her major interest has been in neurological SPECT and PET images. Since February 2012, Ms. Tomse has performed her research fellowship training at the Feinstein Institute for Medical Research in New York as part of the U.S. IAEA fellowship program. Her fellowship is supervised by biophysicist Dr. Vijay Dhawan, Senior Investigator at the Feinstein Institute for Medical Research.

At the Feinstein Institute Ms. Tomse works in the Functional Brain Imaging Laboratory and is involved in research as well as gaining experience in the routine work of a medical physicist in nuclear medicine. She is working with laboratory technologists, physicists and medical doctors who are distinguished researchers in the field of neuroscience. They guide her to acquire PET images of dementia patients, to perform image reconstruction using various reconstruction methods and to use the Feinstein Institute developed automated image-based classification procedure to evaluate expressions of cognitive impairment patterns in PET brain images, as well as to perform Statistical Parametric Mapping Analysis on individual subjects. Ms. Tomse is interested in how analysis results are affected by image reconstruction methods. In addition to the work at the laboratory, she had a chance to attend the ASFNR meeting in Orlando, Florida in March 2012, where she presented her poster on SPECT image analysis in neurodegenerative dementia. Her skills and new experience in routine work and research will allow her to translate the techniques to her home institution after her fellowship and also to apply in her work in PhD studies at the University of Ljubljana. Having a chance to work in a superb institution with other physicists involved in PET research is a unique opportunity for Ms. Tomse, since the role of physics professionals in Nuclear Medicine is only starting to develop, but has a significant potential for Slovenia.

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