International Atomic Energy Agency  
Department of Technical Cooperation  
And  
Nuclear Medicine and Diagnostic Imaging Section  
Division of Human Health  

RAS6078  
Strengthening Nuclear Medicine Applications through Education and Training to Help Fighting Non-Communicable Diseases (ARASIA)

Workshop: Nuclear Medicine Techniques in Neurological Diseases: Emphasis on Oncology and Neurology (ICNMP-PA)

May 23-27, 2016  
Senri Life Science Center,  
Osaka, Japan

Local Course Director

HATAZAWA, Jun  
Osaka University Graduate School of Medicine  
Department of Nuclear Medicine and Tracer Kinetics  
565-0871 Osaka  
Japan

Tel: 81668793461  
Fax: 81668793469  
E-mail: hatazawa@tracer.med.osaka-u.ac.jp
IAEA TECHNICAL OFFICER

Mr. PASCUAL Thomas NB
Section of Nuclear Medicine and Diagnostic Imaging
Division of Human Health
International Atomic Energy Agency, Vienna International Centre, PO Box 100, 1400 Vienna, Australia

IAEA PROJECT MANAGEMENT OFFICER:

Mr SHAKHASHIRO, Abdulghani
Asia and the Pacific Section 1
Division for Asia and the Pacific
Department of Technical Cooperation
M.Abdullah@iaea.org
## PROGRAM
### Monday 23 May 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:30</td>
<td>Opening remarks</td>
<td>Pascual, Thomas (Technical Officer, IAEA)</td>
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<td>Pre-Course Evaluation</td>
<td>Shakhashiro, Abdulghani (IAEA Programme Management Officer)</td>
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<td>Prof. Jun Hatazawa Course Director</td>
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<tr>
<td>09:30-10:30</td>
<td>Instrumentation of SPECT and PET</td>
<td>Dr. Seiichi Yamamoto</td>
<td>Nagoya University, Nagoya, Japan</td>
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<td>ILO: Review and discuss the importance of Instrumentations used in SPECT and PET for Neurological Imaging using Nuclear Medicine techniques</td>
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<tr>
<td>10:30-11:30</td>
<td>Handling computer software, modeling, and image analysis</td>
<td>Dr. Masanori Ichise</td>
<td>National Institute of Radiological Sciences, Chiba, Japan</td>
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<tr>
<td></td>
<td>ILO: Review and discuss the importance of Handling computer software, modeling, and image analysis for Neurological Imaging using Nuclear Medicine techniques</td>
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<tr>
<td>11:30-12:30</td>
<td>Brain anatomy and molecular imaging</td>
<td>Dr. Satoshi Minoshima</td>
<td>University of Utah, Saltlake City, USA</td>
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<td>ILO:</td>
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<tr>
<td></td>
<td>1. Discuss the role of Brain Anatomy and Molecular Imaging in relation to practice of nuclear medicine</td>
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<td>2. Integrate the concepts discussed in relation to best</td>
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**SESSION 1**

**Chair**

GIESEL, Frederik  
University Hospital Heidelberg  
Department of Nuclear Medicine Clinic of Radiology  
69120 Heidelberg  
Germany

Pascual, Thomas (Technical Officer, IAEA)
<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>12:30-14:00</td>
<td>Lunch Break</td>
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</tbody>
</table>
| 14:00-15:00| Radiopharmaceuticals in brain imaging: SPECT.      | 1. Recognize the significance of radiopharmaceuticals used in SPECT brain imaging.  
               | ILO:  
               2. Integrate the concepts of radiopharmaceuticals in brain imaging within the context of best practices of the nuclear technology on the brain imaging | Dr. Hiroshi Toyama, Fujita Health University, Nagoya, Japan |
| 15:00-16:00| Radiopharmaceuticals in brain imaging: PET         | 1. Summarize the Radiopharmaceuticals used in PET/CT brain imaging  
               | ILO:  
               2. List examples of diseases that can be diagnosed by FDG-PET scans.  
               3. Discuss principal differences between FDG and non-FDG agents in brain imaging. | Dr. Tadashi Watabe, Osaka University, Osaka, Japan     |
| 16:00-17:00| SPECT and PET in stroke                          | 1. Discuss the utilization of SPECT and PET imaging modalities in the evaluation of stroke  
               | ILO:  
               2. Determine the limitations SPECT and PET imaging technique in stroke | Dr. Eku Shimosegawa, Osaka University, Osaka, Japan   |

End of session 1
**Tuesday, 24 May 2016**

**SESSION 2**

Chair:

**MINOSHIMA, Satoshi,**
Department of Radiology, University of Washington,  
1959 N.E. Pacific Street, Seattle WA, United States of America

Shakhashiro, Abdulghani  
(IAEA Programme Management Officer)

<table>
<thead>
<tr>
<th>Time</th>
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| 09:00-10:00| Alzheimer’s Disease I  
1. Understand the pathophysiology of Alzheimer’s disease.  
2. Discuss the risk factors of Alzheimer’s disease.  
3. Discuss the role of nuclear medicine imaging in Alzheimer’s disease | Dr. Kazunari Ishii  
Kinki University, Osaka, Japan                                      |                                 |
| 10:00-11:00| PET and SPECT in Dementia (other than Alzheimer’s disease)  
1. Understand the pathophysiology of other dementias  
2. Discuss the risk factors  
3. Discuss the role of nuclear medicine imaging in other dementias | Dr. Kenji Ishii  
Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan                       |                                 |
| 11:00:12:00| Case Presentation: Dementia  
ILO:  
Discuss the role of Brain Imaging using actual cases for image interpretation and its relevance in clinical practice | GIESEL, Frederik  
MINOSHIMA, Satoshi  
Local Experts                                      |                                 |
| 12:00-14:00 | Lunch Break |
| 14:00-15:00 | Seizures  
1. Understand the pathophysiology of seizures  
2. Discuss the risk factors  
3. Discuss the role of nuclear medicine imaging in seizures | Dr. Daichi Sone  
National Center of Neurology and Psychiatry, Tokyo, Japan |
| 15:00-16:00 | Brain Tumour  
1. Understand the pathophysiology/ classification of different brain tumours  
2. Discuss the risk factors  
3. Discuss the role of nuclear medicine imaging in brain tumours | GIESEL, Frederik  
University Hospital Heidelberg  
Department of Nuclear Medicine Clinic of Radiology  
69120 Heidelberg Germany |
| 16:00-17:00 | Case Presentation: Brain Tumour  
Discuss the role of Brain Imaging using actual cases for image interpretation and its relevance in clinical practice | Dr. Kenji Hirata  
Hokkaido University, Sapporo, Japan |

End of session 2
# Wednesday, 25 May 2016

## SESSION 3

**Chair:**

GIESEL, Frederik  
University Hospital Heidelberg  
Department of Nuclear Medicine Clinic of Radiology  
69120 Heidelberg  
Germany

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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</table>
| 9:00-10:00 | Movement Disorder  
1. Understand the pathophysiology of Movement disorders.  
2. Discuss the utilization of nuclear medicine imaging modalities in the evaluation of movement disorders | Dr. Hiroshi Matsuda  
National Center of Neurology and Psychiatry, Tokyo, Japan |
| 10:00-11:00| Case Presentation: Parkinson’s Disease and Related Disorders  
ILO: Discuss the role of Brain Imaging using actual cases for image interpretation and its relevance in clinical practice | Dr. Etsuko Imabayashi  
National Center of Neurology and Psychiatry, Tokyo, Japan |
| 11:00-12:00| Pediatric Nuclear Medicine  
ILO:  
1. Understand the pathophysiology/classification of different paediatric brain tumours and neurological disorders  
2. Discuss the role of nuclear medicine imaging in paediatric brain imaging | Dr. Mayuki Uchiyama  
The Jikei University School of Medicine, Tokyo, Japan |
<p>| 12:00-14:00| Lunch Break                                                        |                                                                                          |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00-15:00</td>
<td>Brain Trauma</td>
<td>Dr. Toru Shiga Hokkaido University, Sapporo, Japan</td>
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<td>Discuss the role of nuclear medicine imaging in brain trauma</td>
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<tr>
<td>16:00-17:00</td>
<td>Brain Death</td>
<td>Dr. Toshimitsu Momose The University of Tokyo, Tokyo, Japan</td>
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<td>Discuss the role of nuclear medicine imaging techniques in brain death imaging</td>
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<td>End of session 3</td>
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<tr>
<td>Time</td>
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<td>09:00-12:00</td>
<td>Case presentation (including report writing and group discussion):</td>
<td>Dr. Mitsuaki Tatsumi, Osaka University, Osaka, Japan</td>
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<td>ILO:</td>
<td>Dr. Hiroki Kato, Osaka University, Osaka, Japan</td>
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<td>1. Describe appropriate ways of report writing in neurological cases</td>
<td>Dr. Tadashi Watabe, Osaka University, Osaka, Japan</td>
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<td>2. Discuss the role of Brain Imaging using actual cases for image interpretation</td>
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<td>and its relevance in clinical practice</td>
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<td>12:00-14:00</td>
<td>Lunch Break</td>
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<td>14:00-17:00</td>
<td>Parametric image analysis of brain images (including software practice):</td>
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<td>1. Enumerate and discuss the different Parametric image analysis used in brain</td>
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<td>imaging</td>
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END OF SESSION 4
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<tr>
<td>9:00-10:00</td>
<td>SPECT and PET in Psychiatry</td>
<td>1. Understand the pathophysiology/classification of different psychiatric cases in relation to brain imaging 2. Discuss the role of nuclear medicine imaging in psychiatry</td>
<td>Dr. Tetsuya Suhara National Institute of Radiological Sciences, Chiba, Japan</td>
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<tr>
<td>10:00-11:00</td>
<td>Nuclear Medicine In New Drug Development</td>
<td>1. Describe and discuss new drug developments in relation to nuclear medicine imaging 2. Discuss the role of Brain Imaging using actual cases for image interpretation and its relevance in clinical practice</td>
<td>Dr. Jun Hatazawa Osaka University, Osaka, Japan</td>
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<tr>
<td>11:00-11:30</td>
<td>Future application of Brain Nuclear Medicine</td>
<td>1. Describe and explain future application of brain imaging using nuclear medicine techniques</td>
<td>Dr. Satoshi Minoshima, University of Utah, USA</td>
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<td>2. Explore possibilities on how these newer technologies will have a positive impact on nuclear medicine practice</td>
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| **11:30-12:00** | Closing Remarks  
Post course evaluation | Pascual, Thomas (Technical Officer, IAEA)  
Shakhashiro, Abdulghani (IAEA Programme Management Officer)  
Prof. Jun Hatazawa  
Course Director |