Course Day ONE:
November 28th 2016, Monday

07:00 – 07:30  N. Alshafai, Introduction

“Spine Surgery Chapter”

07:30 – 08:00  N. Alshafai, Biomechanics of the spine

08:00 – 08:45  F. Roser, Decompressing the spine – When and How?

08:45 – 09:30  A. Levi, Reconstructing the spine – When and How?

09:30 – 09:45  Coffee Break

09:45 – 10:15  N. Alshafai, Spinal column tumors- A to Z

10:15 – 10:30  N. Thomas, Case discussion

10:30 – 11:00  A. Levi, Spinal cord injury and beyond

11:00 – 11:30  N. Thomas, Cervical Spinal column trauma - Classification and surgical management

11:30 – 12:00  A. Levi, Thoracolumbar Spinal column trauma - Classification and surgical management

12:00 – 13:00  Lunch Break

“Peripheral Nerve Surgery Chapter”

13:00 – 13:30  R. Spinner, How to do a peripheral nerve clinical examination- illustration

13:30 – 14:15  R. Spinner, Diagnosis and surgical management of Peripheral nerves (Brachial plexus)

14:15 – 14:45  R. Spinner, Diagnosis and surgical management of Peripheral nerves (Upper extremities)

14:45 – 15:00  Anna Jaron, Stretch Exercises

15:00 – 15:30  R. Spinner, Diagnosis and surgical management of Peripheral nerves (Lumbosacral plexus and Lower extremities)
15:30 – 16:30  Peripheral Nerve - Station:
R. Spinner (Rochester)
A. Levi (Miami)
M. Cusimano (Toronto) - Auditor

16:30:  Participants will divide into five small groups
(Will rotate attending 4 out of 5 stations)

55 minutes each station
Small Groups
Four cases in each station
Round table Discussions of clinical case scenarios
(Dinner will be served at 18:00)

Spine Imaging and Pathology – Station 1
(All groups will have to attend station 1):
J. Rossiter (Kingston)
A. Lin (Toronto)
P. McGeoch (Edinburgh) - Auditor

Spine – Station 2:
(All groups will have to attend station 2):
A. Levi (Miami)
F. Roser (Abu Dhabi)
R. Czepko (Krakow) - Auditor

Spine - Station 3:
(All groups will have to attend station 3):
N. Thomas (London)
J. Schramm (Bonn)

Spine - Station 4:
D. Schul (Munich)
MC Wallace (Kingston)

Spine - Station 5:
TBA (TBA)
M. Cusimano (Toronto)

20:30  Adjourn
Course Day Two:
November 29th 2016, Tuesday

“Skull base & Oncologic Surgery Chapter”

07:30 – 08:30  J. Rossiter, Brain tumor pathology
08:30 – 08:40  N. Alshafai, Evaluation of Day 1
08:40 – 09:00  N. Alshafai, Anatomico-radiological approach to the gyri and sulci
09:00 – 09:15  Coffee Break
09:15 – 10:00  B. Lippitz, Neurosurgical principals of radiosurgery
10:00 – 11:30  M. Cusimano, Skull base lesions. Cases and pearls from the frontal sinus to the foramen magnum

11:30 - 12:00  Neuro-oncology cases with expert faculty discussion
Moderator (will audit voting): N. Alshafai
Presenters:
N. Thomas (London)  15:45 – 16:00
F. Roser (Abu Dhabi)  16:00 – 16:15

12:00 – 13:00  Lunch Break

“Functional & Pain Surgery Chapter”

13:00 – 13:30  A. Lozano, Introduction to Surgical anatomy and physiology for the Pain and functional neurosurgeon
13:30 – 14:15  A. Lozano, Surgical management of movement disorders and stereotactic surgery
14:15 – 15:00  A. Lozano, Surgical management of pain and spasticity
15:00 – 15:15  Anna Jaron, Stretch Exercises
15:15 – 16:00  Pain and movement disorders Station:
A. Lozano (Toronto)
B. Lippitz (Hamburg)
P. McGeoch (Edinburgh) - Auditor
16:00 – 16:30  **T. Krings**, Tumor Mimics

16:30 – 17:00  **N. Alshafai**, Exam review

17:00  **Participants will divide into five small groups**
(Will rotate attending 4 out of 5 stations)

**55 minutes each station**

**Small Groups**

**Four cases in each station**

**Round table Discussions of clinical case scenarios**
(Dinner will be served at 18:30)

Brain tumors Imaging and pathology – differentials to working diagnosis - Station 1:
(All groups will have to attend station 1):

  J. Rossiter (Kingston)
  T. Krings (Toronto)
  D. Schul (Munich) - Auditor

Skull-base- Station 2:
(All groups will have to attend station 2):

  M. Cusimano (Toronto)
  F. Roser (Abu Dhabi)
  R. Czepko (Krakow) - Auditor

Pituitary disorders – Station 3:
(All groups will have to attend station 3):

  A. Grotenhuis (Neijmegan)
  W.T. Couldwell (Salt Lake)

Neuro-oncology - Station 4:

  N. Thomas (London)
  J. Schramm (Bonn)

Neuro-oncology – Station 5:

  R. Kirollos (Cambridge)
  MC Wallace (Kingston)

21:00  **Adjourn**
Course Day Three:
November 30th 2016, Wednesday

“Cerebrovascular & Endovascular Chapter”

07:30 – 08:00  T. Krings, Surgical anatomy and physiology “The Venous System”

08:00 – 08:30  MC Wallace, Surgical anatomy and physiology “The Arterial System”

08:30 – 09:00  T. Krings & MC Wallace Surgical and endovascular management of Stroke

09:00 – 09:15  Coffee Break

09:15 – 10:30  R. Kirollos, M.C. Wallace & T. Krings, Intra-cerebral Hemorrhage, pearls of brain vascular malformation, Surgical and Endovascular management

10:30 – 10:45  N. Alshafai, Evaluation of Day 2

10:45 – 11:15  M.C. Wallace, Cavernous malformation

11:15 – 12:00  The Wallace – Cusimano Honorary Lectureship: W.T. Couldwell, Surgical approaches to deep brain lesions

12:00 – 13:00  Lunch Break

13:00 – 14:30  L. Regli, M.C. Wallace & T. Krings, Pearls in the management of Aneurysms and Sub arachnoid hemorrhage

14:30 – 14:45  Anna Jaron, Stretch Exercises

14:45 – 15:15  L. Regli, vascular Bypass surgery (Why, When and how)

15:15 – 15:45  Cerebrovascular cases with expert faculty discussion
Moderator (will audit voting): N. Alshafai
Presenters:
R. Kirollos 15:45 – 16:00
M. Wiedmann 16:00 – 16:15

15:45 – 16:15  N. Alshafai, Exam review
16:30  Participants will divide into five small groups
(Will rotate attending 4 out of 5 stations)

55 minutes each station
Small Groups
Four cases in each station
Round table Discussions of clinical case scenarios
(Dinner will be served at 18:15)

Endovascular and Interventional Neuroradiology - Station 1:
(All groups will have to attend station 1):
  T. Krings (Toronto)
  M. Wiedmann (Oslo)
  A. Lin (Toronto) - Auditor

Deep Cranial lesions - Station 2:
(All groups will have to attend station 2):
  W.T. Couldwell (Salt Lake)
  A. Grotenhuis (Nijmegen)
  P. Gonzalez (Alicante) - Auditor

Cerebrovascular - Station 3:
(All groups will have to attend station 3):
  MC Wallace (Kingston)
  D. Schul (Munich)

Cerebrovascular – Station 4:
  L. Regli (Zurich)
  M. Cusimano (Toronto)

Cerebrovascular - Station 5:
  R. Kirollos (Cambridge)
  J. Schramm (Bonn)

20:30  Adjourn

21:15 – 24:00  “Networking Reception”
Meet your colleagues and faculty from all-around the world
in a relaxed atmosphere. “Complimentary event”
Course Day Four:
December 1st 2016, Thursday

“Epilepsy Surgery Chapter”

07:30 – 08:00  T. Krings, Imaging in epilepsy
08:00 – 08:15  J. Rossiter, Pathology in epilepsy
08:15 – 08:45  J. Schramm, Drug resistant epilepsy: Evaluation
08:45 – 09:00  Coffee Break
09:00 – 10:00  J. Schramm, Drug resistant epilepsy: Surgical management

“Miscellaneous Chapter”

10:00 - 10:45  A. Grotenhuis, Surgical management of ventricular lesions (open and endoscopic)

“Pediatric Neurosurgery Chapter”

10:55 – 11:15  J. Rossiter, Pediatric specific Neuropathology
11:15 – 12:00  P. Dirks, The surgical management of Pediatric Brain tumors
12:00 – 13:00  Lunch Break
13:00 – 13:15  P. Dirks, The management of encephalo-coeles
13:15 – 13:45  P. Steinbok, Pediatric Hydrocephalus
13:45 – 14:15  A. Grotenhuis, Surgical management of Intra-cranial cysts
14:15 – 14:45  P. Dirks, Cranio-synostosis
14:45 – 15:00  Anna Jaron, Stretch Exercises
15:00 – 16:00  P. Steinbok, Chiari-malformation & Spinal Dys-raphism
16:00 – 16:30  Pediatric cases with expert faculty discussion  
Moderator (will audit voting): N. Alshafai  
Presenters:  
F. Sala (Verona)  16:00 – 16:15  
V. Fernandez (Alicante)  16:15 – 16:30  

16:30:  Participants will divide into five small groups  
(Will rotate attending 4 out of 5 stations)  

55 minutes each station  
Small Groups  
Four cases in each station  
Round table Discussions of clinical case scenarios  
(Dinner will be served at 18:00)  

Pediatrics pathology-radiology correlation - Station 1:  
(All groups will have to attend station 1):  
J. Rossiter (Kingston)  
A. Lin (Toronto)  
V. Fernandez (Alicante) - Auditor  

Epilepsy (Pediatrics & adults) - Station 2:  
(All groups will have to attend station 2):  
J. Schramm (Bonn)  
W. Couldwell (Salt Lake)  
R. Kirollos (Cambridge) - Auditor  

Neuro-endoscopy – Station 3:  
(All groups will have to attend station 3):  
A. Grotenhuis (Neijmegen)  
M. Cusimano (Toronto)  

Pediatrics - Station 4:  
P. Dirks (Toronto)  
F. Sala (Verona)  

Pediatrics - Station 5:  
P. Steinbok (Vancouver)  
P. Gonzales (Alicante)  

20:30  Adjourn
Course Day Five:  
December 2\textsuperscript{nd} 2016, Friday

“Head injury and Neuro critical care Chapter”

07:30 – 08:00  J. Rossiter, Neuropathology in head injury
08:00 – 08:45  G. Hawrlyk, The management of traumatic brain injury I
08:45 – 09:00  G. Hawrlyk, Penetrating Non-Missile Case Discussion
09:00 – 09:15  Coffee Break
09:15 – 10:00  A. Belli, The management of traumatic brain injury II
10:00 – 11:00 Brain Trauma - Station:
              A. Belli (Birmingham)
              G. Hawrlyk (Salt Lake)
              R. Kirollos (Cambridge) - Auditor

“Miscellaneous Chapter”

11:00 – 11:30  P. Gonzalez, Brain White-matter anatomy for the oncologic and functional neurosurgeon
11:30 – 12:00  F. Sala, Intra-operative Neuro-monitoring (Cranial & Spinal)
12:00 – 13:00  Lunch Break

“Neuro-oncology Chapter”

13:00 – 14:30  M. Sabel, Management of Brain Infiltration (Primary & Secondary)
14:30 – 14:45  N. Alshafai, Evaluation of Day 4 & Trauma/Critical care chapter
14:45 – 15:00  M. Sabel, Brain mapping and awake craniotomy
15:00 – 15:15  Anna Jaron, Stretch Exercises

15:15 – 16:15  Oncology Station:
M. Sabel (Dusseldorf)
MC Wallace (Kingston)
P. Dirks (Toronto) - Auditor

“Miscellaneous Chapter”

16:15 – 17:00  J Lazarou, Neurology for the neurosurgeons

17:00 – 18:00  General Neurosurgery Station:
J. Lazarou (Toronto)
MC Wallace (Kingston)
G. Hawrlyk (Salt Lake) - Auditor

18:00 – 18:45  N. Alshafai,
Feedback distribution to all participants for their performance during the week

18:45 – 19:15  Break
Certificates will be distributed
“Dinner will be served”

19:15 – 21:00  The CCN Review Challenge
“Mandatory attendance”

21:00  Adjourn, End of Course

21:30 - Open  End of the course party