

ACCELERATOR TECHNOLOGY

Education Course



putting innovation to work

February 26 – March 1, 2018, Toronto, Canada

Monday, February 26, 2018

11:30 – 12:00 **Registration & Lunch** **PM 1B-615**

12:00 – 12:10 **Welcome**
David Jaffray PhD

12:10 – 12:50 **Motivation for Advanced Imaging Systems on Linear Accelerators**
Mike Milosevic MD

12:50 – 1:00 Discussion

1:00 – 1:45 **COMP Webinar: SIMAC**
Marco Carlone PhD

1:45 – 2:00 **Introduction to the Course**
Bern Norrlinger & Nathan Becker PhD

2:00 – 2:15 **Break**

Session 1: Linear Accelerator Technology

2:15 – 3:00 **Introduction to ATec & Review of Background Material** **PM 1B-615**
Nathan Becker PhD

3:00 – 3:45 **Microwave Devices**
Carlos Varon P.Eng

3:45 – 4:15 **High Voltage Modulator**
Bern Norrlinger

4:15 – 4:20 **Discussion**

4:20 - 4:35 **Break**

4:35 – 6:05 **Lab #1: Beam Output** **PM 2B Skills Lab**
Bern Norrlinger, Nathan Becker PhD

6:05 **END OF DAY**

6:30 **Social Event** **Reds Midtown Tavern**
382 Yonge St

Tuesday, February 27, 2018

8:30 – 9:00

*Sign In**PM 1B-610*

Session 1 (cont'd): Linear Accelerator Technology

9:00 – 9:10

Overview for the Day

Bern Norrlinger, Nathan Becker PhD

9:10 – 9:55

Accelerator Beam Control

Bern Norrlinger

9:55 – 10:15

Synchronization Pulse

Bern Norrlinger

10:15 – 10:25

Discussion

10:25 – 10:40

Break

10:40 – 11:25

Multileaf Collimators & Dynamic Beam Delivery

Andrea McNiven PhD

11:25 – 11:30

Discussion

11:30 – 12:10

Beam Steering

Andrea McNiven PhD

12:10 – 12:15

Discussion

12:15 – 1:00

Lunch

1:00 – 3:00

Lab #2: Finding Beam

Bern Norrlinger, Nathan Becker PhD

PM 2B Skills Lab

3:00 – 3:15

Break*PM 1B-610*

3:15 – 3:45

Standard Imaging Equipment as Accessories to Medical Linacs

Jean-Pierre Bissonnette PhD

3:45 – 4:35

2D Imaging Principles

Jean-Pierre Bissonnette PhD

4:35 – 4:40

Discussion

4:40 – 5:30

Good Practices for Service Groups

Bern Norrlinger

5:30 – 5:35

Discussion

5:35

END OF DAY

Wednesday, February 28, 2018

8:30 – 9:00

Sign In

PM 1B-615

Session 1 (cont'd): Linear Accelerator Technology

9:00 – 9:10

Recap

Bern Norrlinger, Nathan Becker PhD

9:10 – 9:30

Advanced Topic: Vacuum Systems

George Parsons

9:30 – 10:30

**Demonstration: Basic Vacuum Practice,
Roughing Pumps, Leak Detection**

George Parsons

10:30 – 10:45

Break

Session 2: Linac-Based Imaging (IGRT)

10:45 – 12:25

Lab #3: Beam Steering

PM 2B Skills Lab

Bern Norrlinger, Nathan Becker PhD

12:25 – 1:25

Lunch

PM 1B-615

1:25 – 2:15

Safety with Medical Devices in Canada

Ivan Yeung PhD, Bern Norrlinger

Session 3: Quality & Safety

2:15 – 3:00

Accelerator Safety

Carlos Varon P.Eng

3:00 – 4:00

Radiation Safety

Raina Park, Dave Niven

4:00 – 4:05

Discussion

4:05 – 4:35

Patient Safety

Murray Rice P. Eng, Bern Norrlinger

4:35 – 5:20

**Quality Management: Responsibility for Holders of a
Service License**

Frank Tourneur

5:20 – 5:25

Discussion

5:25

END OF DAY

5:30 – 6:00

MRgRT Tour – Teo Stanescu PhD

Thursday, March 1, 2018

8:30 – 9:00

*Sign In***PM 1B-610**

Session 2 (cont'd) Linac-Based Imaging (IGRT)

9:00 – 9:40

3D Imaging Principles

Doug Moseley PhD

9:40 – 9:45

Discussion

9:45 – 10:30

Image Troubleshooting

Doug Moseley PhD

10:30 – 10:35

Discussion

10:35 – 10:50

Break

10:50 – 11:25

kV Beam Generation

Carlos Varon P. Eng

11:25 – 11:30

Discussion

11:30 – 12:35

Image Viewing & Evaluation Lab

Doug Moseley PhD

PM 2B Skills Lab

12:35 – 1:20

Lunch**PM 1B-610**

1:20 – 1:55

Water Systems

George Parsons

1:55 – 2:00

Discussion

Session 4: Panel Discussion

2:00 – 2:45

Linac Archaeology: Using the past to explain the present and foretell the future (maybe)

Malcolm McEwen PhD

2:45 – 2:55

Discussion

2:55 – 3:10

Break

3:10 – 4:40

Panel Discussion – Moderator: Andrea McNiven PhD

Discussants: Bern Norrlinger, Nathan Becker PhD, Malcolm McEwen PhD

4:40 – 4:50

Course Wrap Up & Evaluation**END OF COURSE**