

**Accelerating the future:
Designing a Robust and
Affordable Radiation Therapy
Treatment System for
Challenging Environments**

Report of Contributions

Contribution ID: 1

Type: **not specified**

Presentation: Challenges and Solutions in Radiotherapy Treatment in ODA countries (3 of 3)

Presenter: FREMPONG, Emmanuel (Ghana)

Contribution ID: 2

Type: **not specified**

Introduction by CERN, ICEC and STFC (How we got here –the three prior workshops and Objectives of this Workshop)

Wednesday, 20 March 2019 13:15 (15 minutes)

Presenters: COLEMAN, C Norman; JAMIESON, Charlotte; COLLIER, Paul (CERN)

Session Classification: Session 1

Contribution ID: 3

Type: **not specified**

Medical physicists

Wednesday, 20 March 2019 13:45 (15 minutes)

Presenter: MAKUFA, Remi

Session Classification: Session 2

Contribution ID: 4

Type: **not specified**

Medical physicist

Wednesday, 20 March 2019 14:00 (15 minutes)

Presenter: IGE, Taofeeq

Session Classification: Session 2

Contribution ID: 5

Type: **not specified**

Summary of the key challenges from previous global survey

Wednesday, 20 March 2019 15:00 (15 minutes)

Presenter: KHADER, Jamal

Session Classification: Session 2

Contribution ID: 6

Type: **not specified**

Open Discussion: : Opportunity for other ODA participants to contribute and a recapitulation of the challenges and potential solutions

Wednesday, 20 March 2019 15:45 (45 minutes)

Session Classification: Session 2

Contribution ID: 7

Type: **not specified**

Overview of the "Novel LINAC/RTT Initiative and how it is trying to address the specific challenges raised by ODA and questionnaire

Wednesday, 20 March 2019 16:30 (20 minutes)

Presenter: COLEMAN, C Norman

Session Classification: Session 3

Contribution ID: 8

Type: **not specified**

Outlining the main outputs after the original meetings and how we are seeking to address particular challenges

Wednesday, 20 March 2019 16:50 (20 minutes)

Presenter: MCINTOSH, Peter

Session Classification: Session 3

Contribution ID: 9

Type: **not specified**

Radiation Therapy Treatment Techniques and Treatment Planning Systems

Session Classification: Session 3

Contribution ID: **10**

Type: **not specified**

Major Subsystems of Current Medical Linear Accelerators and their Shortfalls

Session Classification: Session 3

Contribution ID: 11

Type: **not specified**

Opportunities to Improve the Performance of RTT Systems with New Technologies

Wednesday, 20 March 2019 17:10 (20 minutes)

Presenter: CARLONE, Marco

Session Classification: Session 3

Contribution ID: 12

Type: **not specified**

Open Discussion

Wednesday, 20 March 2019 17:30 (30 minutes)

Session Classification: Session 3

Contribution ID: 13

Type: **not specified**

Tour of three facilities and their respective oncology departments.

Thursday, 21 March 2019 08:30 (3h 30m)

Contribution ID: 14

Type: **not specified**

Introduction

Thursday, 21 March 2019 12:55 (5 minutes)

Presenters: FOY, Hubert; VAN DYK, Jake; MCINTOSH, Peter

Session Classification: Session 4

Contribution ID: 15

Type: **not specified**

(STFC1) Linear accelerator simulations for stable and sustainable operation of developing country radiotherapy linear accelerators

Session Classification: Session 4

Contribution ID: 16

Type: **not specified**

(STFC2) Accelerator technology options study

Session Classification: Session 4

Contribution ID: 17

Type: **not specified**

Global Challenges Research Fund Accelerator Design Study (GCRF-ADS)

Session Classification: Session 5

Contribution ID: **18**

Type: **not specified**

21st Century Global Radiotherapy Access in Challenging Environments Network (GRACENet)

Session Classification: Session 5

Contribution ID: **19**

Type: **not specified**

Convening panel

Friday, 22 March 2019 08:00 (1h 30m)

Expert Panel from ODA countries:

Radiation oncologist: Emmanuel Frempong

Radiation oncologist: Memory Nsingo

Medical physicist: Ejidio Ngigi

Director of a hospital institution: Thato Moumakwa

Representative from government: Daniel Adams

Session Classification: Session 7

Contribution ID: 20

Type: **not specified**

Short presentations followed by discussion

Session Classification: Session 9

Contribution ID: 21

Type: **not specified**

Chartrounds: An Established Mentoring Network that Works

Presenter: GROVER, surbhi (University of Pennsylvania)

Session Classification: Session 9

Contribution ID: 22

Type: **not specified**

Installation of radiotherapy systems in smaller hospitals in rural settings and the operational challenges this brings

Presenter: CARLONE, Marco

Session Classification: Session 9

Contribution ID: 23

Type: **not specified**

Addressing the Need for Medical Physics Education

Presenter: VAN DYK, Jake

Session Classification: Session 9

Contribution ID: 24

Type: **not specified**

Proposal for Technical Support for Radiotherapy in West African Countries

Presenter: FOY, Hubert

Session Classification: Session 9

Contribution ID: 25

Type: **not specified**

ICEC Perspective: How the effort embodied by this workshop will improve the care of patients with cancer in UICs as well as LMICs

Friday, 22 March 2019 15:00 (20 minutes)

Presenter: COLEMAN, C Norman

Session Classification: Session 9

Contribution ID: 26

Type: **not specified**

Next Steps from STFC's perspective

Friday, 22 March 2019 15:20 (20 minutes)

Presenter: JAMIESON, Charlotte

Session Classification: Session 9

Contribution ID: 27

Type: **not specified**

Open Discussion

Friday, 22 March 2019 15:40 (40 minutes)

Session Classification: Session 9

Contribution ID: 28

Type: **not specified**

Concluding Remarks and Adjournment

Friday, 22 March 2019 16:20 (10 minutes)

Presenters: COLEMAN, C Norman; JAMIESON, Charlotte; DOSANJH, Manjit (CERN)

Session Classification: Session 9

Contribution ID: 29

Type: **not specified**

(STFC 3) Cloud-based Electronic Infrastructure in Support of Linac-based Radiotherapy in Challenging Environments

Session Classification: Session 4

Contribution ID: **30**

Type: **not specified**

(STFC4) Requirements and permanent magnet studies for LINACS

Session Classification: Session 4

Contribution ID: 31

Type: **not specified**

(STFC5) A modular, integrated electron gun and RF cavity for RTT systems in developing countries

Session Classification: Session 4

Contribution ID: 32

Type: **not specified**

(STFC6) Novel optimization framework for real-time automated radiation therapy

Session Classification: Session 4

Contribution ID: 33

Type: **not specified**

(STFC7) RF power systems and optimised RF structures for electron beam acceleration

Session Classification: Session 4

Contribution ID: 34

Type: **not specified**

(STFC8) New approaches to the design of multi-leaf collimators for medical linear accelerators

Session Classification: Session 4

Contribution ID: 35

Type: **not specified**

Welcome to Botswana

Wednesday, 20 March 2019 13:00 (15 minutes)

Presenters: Dr SINVULA, DPS MOH Dr Morrison; Prof. MASIRE, Prof. Doreen ((Acting Dean))

Session Classification: Session 1

Contribution ID: 36

Type: **not specified**

Radiation Therapy Treatment Techniques and Treatment Planning Systems

Wednesday, 20 March 2019 13:30 (15 minutes)

Presenter: VAN DYK, Jake

Session Classification: Session 1

Contribution ID: 37

Type: **not specified**

Chartrounds: An Established Mentoring Network that Works

Thursday, 21 March 2019 15:45 (15 minutes)

Presenter: GROVER, surbhi (University of Pennsylvania)

Session Classification: Session 5

Contribution ID: 38

Type: **not specified**

Installation of radiotherapy systems in smaller hospitals in rural settings and the operational challenges this brings

Thursday, 21 March 2019 16:00 (15 minutes)

Presenter: CARLONE, Marco

Session Classification: Session 5

Contribution ID: 39

Type: **not specified**

Addressing the Need for Medical Physics Education

Thursday, 21 March 2019 16:15 (15 minutes)

Presenter: VAN DYK, Jake

Session Classification: Session 5

Contribution ID: 40

Type: **not specified**

Radiographer or radiotherapy technician

Wednesday, 20 March 2019 14:15 (15 minutes)

Presenter: NHARI, Linnet

Session Classification: Session 2

Contribution ID: 41

Type: **not specified**

Radiation Oncologist

Wednesday, 20 March 2019 14:30 (15 minutes)

Presenter: NSINGO, Memory

Session Classification: Session 2

Contribution ID: 42

Type: **not specified**

Radiation Oncologist

Wednesday, 20 March 2019 14:45 (15 minutes)

Presenter: MAKWANI, Hellen

Session Classification: Session 2

Contribution ID: 43

Type: **not specified**

Overview of STFC-funded projects

Thursday, 21 March 2019 13:00 (15 minutes)

Presenter: JAMIESON, Charlotte

Session Classification: Session 4

Contribution ID: 44

Type: **not specified**

RTT System Overview: From Source to Patient

Thursday, 21 March 2019 13:15 (15 minutes)

Presenter: VAN DYK, Jake

Session Classification: Session 4

Contribution ID: 45

Type: **not specified**

Electron Gun for Radiotherapy Treatment (RTT) System

Thursday, 21 March 2019 13:30 (15 minutes)

Presenter: ANGAL-KALININ, Deepa (STFC)

Session Classification: Session 4

Contribution ID: 46

Type: **not specified**

New RF accelerating structures and dynamics for radiotherapy in challenging environments

Thursday, 21 March 2019 13:45 (15 minutes)

Presenter: BURT, Graeme Campbell (Lancaster University (GB))

Session Classification: Session 4

Contribution ID: 47

Type: **not specified**

RF Sources

Thursday, 21 March 2019 14:00 (15 minutes)

Presenter: KONOPLEV, Ivan (University of Oxford)

Session Classification: Session 4

Contribution ID: 48

Type: **not specified**

Current and future directions in the dosimetry and real-time verification of intensity modulated radiotherapy

Thursday, 21 March 2019 14:15 (15 minutes)

Presenter: HUGTENBURG, Richard (S)

Session Classification: Session 4

Contribution ID: 49

Type: **not specified**

Beam delivery

Thursday, 21 March 2019 14:30 (15 minutes)

Presenter: STEINBERG, Adam

Session Classification: Session 4

Contribution ID: 50

Type: **not specified**

Cloud technology as a mechanism for radiotherapy peer review

Thursday, 21 March 2019 14:45 (15 minutes)

Presenter: AGGARWAL, Ajay

Session Classification: Session 4

Contribution ID: 51

Type: **not specified**

Future direction, priorities, development plans - open discussion

Thursday, 21 March 2019 15:20 (25 minutes)

Session Classification: Session 4

Contribution ID: 52

Type: **not specified**

The importance of networking and future projects

Friday, 22 March 2019 14:30 (30 minutes)

Presenters: MCINTOSH, Peter; SHEEHY, Suzie (University of Oxford and STFC/ASTeC/RAL)

Session Classification: Session 9

Contribution ID: 53

Type: **not specified**

Establishing a national medical physics training programme in Zimbabwe

Thursday, 21 March 2019 16:30 (15 minutes)

Presenter: AZANGWE, Godfrey

Session Classification: Session 5

Contribution ID: 54

Type: **not specified**

Proposal for Technical Support for Radiotherapy in West African Countries

Thursday, 21 March 2019 16:45 (15 minutes)

Presenter: FOY, Hubert

Session Classification: Session 5

Contribution ID: 55

Type: **not specified**

Failure Mode Studies: Using Data to Identify and Solve Problems: Major Subsystems of Current Medical Linear Accelerators and their shortfalls

Thursday, 21 March 2019 17:00 (30 minutes)

Presenters: WROE, Laurence Matthew (University of Oxford (GB)); MAKUFA, Remi

Contribution ID: 56

Type: **not specified**

Presentation 1: Ghana

Friday, 22 March 2019 10:00 (30 minutes)

Presenter: FREMPONG, Emmanuel

Session Classification: Session 6

Contribution ID: 57

Type: **not specified**

Presentation 2: Nigeria

Friday, 22 March 2019 10:30 (30 minutes)

Presenter: CHINEDU ARUAH, Simeon

Session Classification: Session 6

Contribution ID: 58

Type: **not specified**

Presentation 3: Nepal

Friday, 22 March 2019 11:00 (30 minutes)

Presenter: ADHIKARI, Abish (Nepal)

Session Classification: Session 6

Contribution ID: 59

Type: **not specified**

R&D Areas missing in the present portfolio plus prototyping/testing

Friday, 22 March 2019 11:30 (20 minutes)

Presenter: ANGAL-KALININ, Deepa (Daresbury Laboratory)

Session Classification: Session 8

Contribution ID: **60**

Type: **not specified**

Integration and Industrial Engineering considerations

Friday, 22 March 2019 11:50 (20 minutes)

Presenter: HERRMANN, Guido

Session Classification: Session 8

Contribution ID: **61**

Type: **not specified**

Possible additional sources of financial support

Friday, 22 March 2019 12:10 (20 minutes)

Presenter: ADAMS, Daniel

Session Classification: Session 8

Contribution ID: 62

Type: **not specified**

Developing a common approach to Intellectual Property & Collaboration

Friday, 22 March 2019 12:30 (1 hour)

A Discussion animated by a series of, 2-slide contributions from the following: STFC, UK-Uni, ICEC, iThemba, CERN.

Session Classification: Session 8