

# **Geant4 School - University of Wollongong**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## **Introduction to the Geant4 School**

*Monday, December 2, 2019 9:00 AM (15 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session I

Contribution ID: 2

Type: **not specified**

## **Lecture I: Introduction to Geant4**

*Monday, December 2, 2019 9:15 AM (30 minutes)*

Intro, how to install Geant4, how to run Geant4 applications, Documentation, Examples

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session I

Contribution ID: 3

Type: **not specified**

## How to install Geant4

**Session Classification:** Session I

Contribution ID: 4

Type: **not specified**

## Lecture II: Geant4 Kernel

*Monday, December 2, 2019 9:45 AM (45 minutes)*

**Presenter:** BOLST, David (University of Wollongong)

**Session Classification:** Session I

Contribution ID: 5

Type: **not specified**

## **Lecture V: Geant4 User Interface**

*Monday, December 2, 2019 12:00 PM (30 minutes)*

**Presenter:** PROKOPOVICH, Dale (ANSTO)

**Session Classification:** Session II

Contribution ID: 6

Type: **not specified**

## **Lecture IV: Geant4 Visualisation**

*Monday, December 2, 2019 11:45 AM (15 minutes)*

**Presenter:** PROKOPOVICH, Dale (ANSTO)

**Session Classification:** Session II

Contribution ID: 7

Type: **not specified**

## **Lecture III: Geant4 Geometry**

*Monday, December 2, 2019 11:00 AM (45 minutes)*

**Presenter:** BOLST, David (University of Wollongong)

**Session Classification:** Session II



Contribution ID: 8

Type: **not specified**

## **Lecture VI: How to model radiation fields and sources**

*Tuesday, December 3, 2019 8:30 AM (15 minutes)*

**Presenter:** CUTAJAR, Dean (University of Wollongong)

**Session Classification:** Session III

Contribution ID: 9

Type: **not specified**

## Lecture VII: How to model beamlines

*Tuesday, December 3, 2019 8:45 AM (30 minutes)*

**Presenter:** BOLST, David (University of Wollongong)

**Session Classification:** Session III

Contribution ID: **10**

Type: **not specified**

## **Lecture VIII: How to model external fields**

*Tuesday, December 3, 2019 9:15 AM (20 minutes)*

**Presenter:** OBORN, Brad (University of Wollongong)

**Session Classification:** Session III

Contribution ID: 11

Type: **not specified**

## **Lecture IX: How to model human phantoms**

*Tuesday, December 3, 2019 9:35 AM (30 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session III

Contribution ID: 12

Type: **not specified**

## **Geant4 scoring**

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session III

Contribution ID: 13

Type: **not specified**

## Introduction to the physics component

Physics and physics lists

**Presenter:** INCERTI, Sebastien (CNRS/IN2P3)

**Session Classification:** Hands-on session II

Contribution ID: 14

Type: **not specified**

## **Geant4 EM physics**

**Session Classification:** Hands-on session II

Contribution ID: 15

Type: **not specified**

## **Geant4 physics and physics lists**

**Presenter:** INCERTI, Sebastien (CNRS/IN2P3)

**Session Classification:** Session IV



Contribution ID: 16

Type: **not specified**

## **Lecture XI: Geant4 EM physics**

*Tuesday, December 3, 2019 11:00 AM (30 minutes)*

**Presenter:** BROWN, Jeremy

**Session Classification:** Session IV

Contribution ID: 17

Type: **not specified**

## **Lecture XII: Modelling of optical photons**

*Tuesday, December 3, 2019 11:30 AM (30 minutes)*

Optical photons, scintillators and optical fibers

**Presenter:** BROWN, Jeremy

**Session Classification:** Session IV

Contribution ID: **18**

Type: **not specified**

## **Geant4 hadronic physics**

**Presenter:** BOLST, David (Wollongong University)

**Session Classification:** Session V

Contribution ID: 19

Type: **not specified**

## **Lecture XIV: G4-Med: a benchmarking system for medical physics**

*Wednesday, December 4, 2019 8:50 AM (30 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session V

Contribution ID: 20

Type: **not specified**

## **Lecture XV: Geant4 examples for medical applications**

*Wednesday, December 4, 2019 9:20 AM (30 minutes)*

Extended and Advanced examples for dosimetry, microdosimetry and nuclear medicine

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session V

Contribution ID: 21

Type: **not specified**

## **Lecture X: Geant4 physics component and physics lists**

*Tuesday, December 3, 2019 10:05 AM (25 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session III

Contribution ID: 22

Type: **not specified**

## **Lecture XIII: Geant4 hadronic physics**

*Tuesday, December 3, 2019 12:00 PM (30 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session IV

Contribution ID: 23

Type: **not specified**

## The Hadrontherapy Advanced Example

**Presenter:** PETRINGA, Giada (Laboratori Nazionali del Sud, INFN)

**Session Classification:** Session V



Contribution ID: 24

Type: **not specified**

## The doiPET Advanced Example

**Presenter:** AHMED, Abdella mohammednur (University of Wollongong, ANSTO)

**Session Classification:** Session V

Contribution ID: 25

Type: **not specified**

## **Lecture XIIX:The doiPET Advanced Example**

*Wednesday, December 4, 2019 11:00 AM (30 minutes)*

**Presenter:** AHMED, Abdella mohammednur (Wollongong University and ANSTO)

**Session Classification:** Session VI

Contribution ID: 26

Type: **not specified**

## Lecture XIX: Geant4 scoring

*Wednesday, December 4, 2019 11:30 AM (30 minutes)*

G4Multifunctional Detectors and scoring meshes. How to calculate dose

**Presenter:** CUTAJAR, Dean (University of Wollongong)

**Session Classification:** Session VI

Contribution ID: 27

Type: **not specified**

## **Lecture XX: Geant4 analysis component**

*Wednesday, December 4, 2019 12:00 PM (30 minutes)*

**Presenter:** OKADA, Shogo

**Session Classification:** Session VI

Contribution ID: 28

Type: **not specified**

## **Lecture-DNA-I:Physica models for track structure Monte Carlo codes**

*Thursday, December 5, 2019 8:30 AM (45 minutes)*

**Presenter:** KYRIAKOU, Ioanna (Ioannina University)

**Session Classification:** Session VII

Contribution ID: 29

Type: **not specified**

## **Lecture-DNA-II: Geant4-DNA**

*Thursday, December 5, 2019 9:15 AM (45 minutes)*

**Presenter:** INCERTI, Sebastien (CNRS/IN2P3)

**Session Classification:** Session VII

Contribution ID: **30**

Type: **not specified**

## **Lecture-DNA-IV: Track structure models for gold**

*Thursday, December 5, 2019 10:00 AM (30 minutes)*

**Presenter:** SAKATA, Dousatsu (NIRS, Japan)

**Session Classification:** Session VII

Contribution ID: **31**

Type: **not specified**

## **Geant4 examples for radiobiology**

**Presenter:** INCERTI, Sebastien (CNRS/IN2P3)

**Session Classification:** Session VIII



Contribution ID: 32

Type: **not specified**

## **Lecture-DNA-IV: Evaluation of early radiation DNA damage in a fractal cell nucleus model using Geant4-DNA**

*Thursday, December 5, 2019 11:00 AM (45 minutes)*

**Presenter:** SAKATA, Dousatsu (NIRS, Japan)

**Session Classification:** Session VIII

Contribution ID: 33

Type: **not specified**

## **Lecture-DNA-V: Bridging the gap between physical interactions and biological responses**

*Thursday, December 5, 2019 11:45 AM (45 minutes)*

**Presenter:** MCMAHON, Stephen (Queen's University Belfast)

**Session Classification:** Session VIII

Contribution ID: 34

Type: **not specified**

## **Lecture XVI: How to speed up your simulation**

*Wednesday, December 4, 2019 9:50 AM (10 minutes)*

**Presenter:** GUATELLI, Susanna

**Session Classification:** Session V

Contribution ID: 35

Type: **not specified**

## **Lecture XVII: gMocreat visualization tool**

*Wednesday, December 4, 2019 10:00 AM (30 minutes)*

**Presenter:** OKADA, Shogo

**Session Classification:** Session V