



#### Leiden University Medical Center

LUMC is a modern university medical center for research, education and patient care with a high quality profile and a strong scientific orientation. Its unique research practice, ranging from pure fundamental medical research to applied clinical research, places LUMC among the world top. This enables LUMC to offer patient care and education that is in line with the latest international insights and standards – and helps it to improve medicine and healthcare both internally and externally ([www.lumc.nl](http://www.lumc.nl)).

#### Faculty

- > **J. Geleijns, PhD**  
Medical Physicist, LUMC, Leiden, The Netherlands
- > **W. Veldkamp, PhD**  
Medical Physicist, LUMC, Leiden, The Netherlands
- > **I. Hernandez-Giron, PhD**  
Visiting researcher, LUMC, Leiden, The Netherlands
- > **R. Irwan, PhD**  
CT Physicist, Toshiba Medical Systems Europe, Zoetermeer, The Netherlands
- > **L.J.M. Kroft, MD, PhD**  
Radiologist, LUMC, Leiden, The Netherlands
- > **L. Oostveen, MSc**  
Physicist, Radboud University Medical Center, Nijmegen, The Netherlands
- > **E. Smit, MD, PhD**  
Radiologist, Radboud University Medical Center, Nijmegen, The Netherlands
- > **A. van Erkel, MD, PhD**  
LUMC, Leiden, The Netherlands

#### Who should attend

Medical physicists, physicists, radiographers, and physicians with an interest in CT physics.

#### Fee

€550,- for the 2-day course. The fee includes lecture materials, coffee, lunches and a dinner.

#### Registration

For more information or to register, please contact:  
Mrs. Anna Carien van der Plas  
Email: [A.L.C.van\\_der\\_Plas@lumc.nl](mailto:A.L.C.van_der_Plas@lumc.nl)  
Phone: +31 71 526 2993

#### Hotel

Hotel accommodation nearby the venue (2 minutes walking distance) can be arranged with a discount. Please contact Mrs. Anna Carien van der Plas for more information.

#### Venue

Leiden University Medical Center  
Department of Radiology  
Albinusdreef 2  
2333 ZA Leiden  
The Netherlands

#### Website

[www.lumc.nl/org/radiologie/onderwijs/BijEnNascholing/](http://www.lumc.nl/org/radiologie/onderwijs/BijEnNascholing/)

Certificate of attendance will be provided.

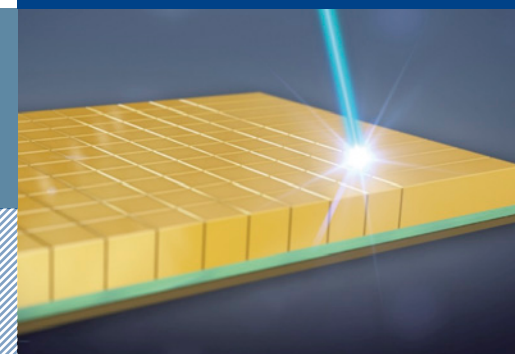


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**TOSHIBA**



Leiden University  
Medical Center

## Computed Tomography Physics



2-day workshop

**9 – 10 November 2017**





Toshiba's Aquilion ONE GENESIS

### Welcome

It is our pleasure to invite you to our unique course on CT physics for high-end CT scanners. This 2-day course aims to provide knowledge of CT physics with hands-on assignments on CT. The course provides for the participants understanding of acquisition, reconstruction, automatic exposure control, dosimetry, radiation exposure and image quality. Dosimetry of wide cone beam CT scanners, and new developments in image quality assessment like model observers will be covered. An experienced faculty will guide you from theory to phantom scanning. We are looking forward to meeting you in Leiden, and welcoming you at our radiology department. On behalf of the faculty, Koos Geleijns, Wouter Veldkamp (medical physicists) and Anna-Carien van der Plas (local organisation).

We look forward to welcoming you to Leiden!



Dr. J. Geleijns



Dr. W. Veldkamp

## First Day (CT dose and Image Quality)

- 10:00 – 10:30 Registration
- 10:30 – 11:00 CT from radiologists' perspective  
*Dr. L. Kroft*
- 11:00 – 11:30 Standard and Regulation from Industry's perspective  
*Dr. R. Irwan*
- 11:30 – 12:00 CT acquisition  
*Dr. J. Geleijns*
- 12:00 – 13:00 Lunch
- 13:00 – 13:30 CT Reconstruction theory  
*Dr. J. Geleijns*
- 13:30 – 14:00 CT Reconstruction practice  
*Dr. R. Irwan*
- 14:00 – 14:30 Tea / Coffee break
- 14:30 – 15:00 Automatic Exposure Control  
*Mr. C. Verlooiij & Dr. J. Geleijns*
- 15:00 – 15:30 CT Dosimetry  
*Dr. J. Geleijns*
- 15:30 – 16:00 Patient Dosimetry  
*Dr. J. Geleijns*
- 16:00 – 16:30 Physical image quality assessment: noise and spatial resolution  
*Dr. W. Veldkamp*
- 16:30 – 17:00 New trends in image quality assessment  
*Dr. I. Hernandez-Giron*
- 17:00 – 18:00 Practical session\*
- 19:00 – 22:00 Dinner

\* MTF/NPS and Dose measurement

## Second Day (CT Advanced Applications)

- 09:00 – 09:30 Dual Energy  
*Ir. L. Oostveen*
- 09:30 – 10:00 Perfusion Imaging  
*Dr. E. Smit*
- 10:00 – 10:30 Cardiac Imaging  
*Dr. J. Geleijns*
- 10:30 – 11:00 Tea / Coffee break
- 11:00 – 11:30 4D DSA and Subtraction  
*Ir. L. Oostveen*
- 11:30 – 12:00 Interventional imaging  
*Dr. A. van Erkel*
- 12:00 – 12:30 Vitrea Workstation
- 12:30 – 13:00 Lunch + Adjourn



Lung phantom with 3D printed insert



CT dosimetry with an ionization chamber and a solid state detector