

Biomedical Imaging From molecule to man

Biomedical imaging enables us to literally see inside the human body. It allows us to visualize and understand diseases on different scales: from molecule to cell to tissue to man. During this half minor you will learn more about advanced imaging technologies, including ultrasound, image guided interventions and advanced microscopic methods.

Introduction

Modern imaging technologies are indispensable for the diagnosis and treatment of most disease processes. Radiology is the medical specialty which is based on the use of these technologies. Radiological imaging methods are rather macroscopic than microscopic. The most common issues are cardiovascular, neurological and oncologic diseases. A basic understanding of the various pathologies is needed to select the most appropriate imaging technology to make the fastest and most cost-effective diagnosis. When selecting the most appropriate diagnostic method it is also indispensable to have some basic knowledge of the available imaging technologies. Currently, a wide array of diagnostic imaging modalities is available,



Wilhelm Röntgen

including x-ray technology, ultrasound, computer tomography (CT), magnetic resonance imaging and spectroscopy (MRI/MRS) and nuclear medicine (e.g. PET scanning).

Overview

During the first weeks of the half-minor, the broad spectrum of diagnostic imaging techniques will be discussed, while relating them to conditions they are often used for. Cardiovascular imaging and CT, neuro imaging and MRI, interventional radiology and ultrasound, will all be

highlighted. In the weeks after, other roles of radiology will be emphasized, such as oncology and nuclear medicine, pathology and microscopic imaging and image-guided surgery.

Aim of this Half-Minor; “How to choose the appropriate tools in Clinical Practice and Biomedical Research”

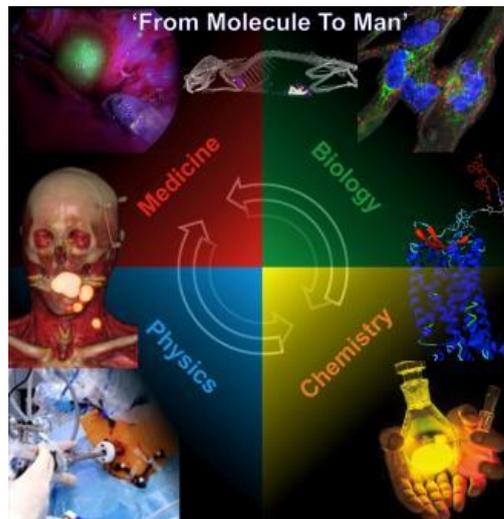
Quote

“There was close contact with the radiology department, giving students a clear view of clinical practice!”

Learning goals

At the end of this minor, students know the role and scope of the wide array of diagnostic imaging modalities in patients with cardiovascular, oncologic, or neurologic diseases. Furthermore, students can evaluate new clinical imaging research lines and envisage which diagnostic modality could be applied to a wide variety of patient cases.

“This minor teaches skills and knowledge that is useful for practically every career in the medical field.”



Special focus on

- Cardiovascular Imaging
- Interventional Radiology
- Neuro Imaging
- Oncology
- Pathology/Microscopy
- Image Guided Surgery

Assessment

- Case presentations (pass/fail)
- Exam (2x): open questions (40% of final grade)
- Oral presentation: about the role of biomedical imaging in one of the LUMC profile areas (20% of final grade)
- Radiological requests on patient cases (20% of final grade)
- Written report: opinion paper (20% of final grade)

Contact us



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