

Clinical PhD Program Clinical Imaging Science (CIS), Q445

This program is especially addressed to physicians who are planning to train for radiology or nuclear medicine. However, it is also open to physicians from other departments who are scientifically or clinically interested in imaging science.

Besides the basic knowledge required for independent scientific work, recent knowledge of modern imaging methods in nuclear medicine and radiology will be taught, including molecular imaging. Comprehension of the technical backgrounds, the ability of independent and focused planning of a project, as well as the application of the available methods and their post-processing are parts of the three-year apprenticeship curriculum. Besides diagnostic applications of imaging methods, their implementation for the planning of minimal-invasive, interventional methods are taught.

After finalizing the program the graduate should feature the following skills:

- Independent application of the different imaging and molecular methods such as magnetic resonance imaging (MRI), computed tomography, ultrasound, digital radiography / fluoroscopy, positron emission tomography or single photon emission computed tomography. The entire area of utilization, including that exceeding clinical practice, should be covered. In the case of MRI, this covers structural imaging, imaging of movements, i.e. the heart in a macroscopic or diffusion-weighted imaging at a microscopic level, as well as MR spectroscopy or functional MRI.
- Independent utilization of the post-processing methods for the different modalities.
- Knowledge of the imaging methods applicable for animal studies.
- Substantiated knowledge about the existent intravasal contrast agents and tracers.

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