



## IRENE – CD Laboratory for Image and Knowledge Driven Precision Radiation Oncology

In the frame of the Christian Doppler Laboratory of Image and Knowledge Driven Precision Radiation Oncology (IRENE) at the Department of Radiation Oncology (<https://radioonkologie.meduniwien.ac.at/irene>) we are offering **1 PhD position**. Our team consists for 3 PhD students in their first year, one Post-Doc and one study assistant under the lead of two laboratory heads combining expertise in Medical Physics and Radiation Oncology. Under the umbrella of the three-year PhD program (N094) at the Medical University of Vienna, Austria, all PhD students work together on innovative projects within a peer group and will receive broad training in for a career in academia, industry and beyond.

The **CD laboratory IRENE** aims to improve cancer care by increasing the precision of radiation oncology by integrating two major pillars in contemporary personalized medicine: Technological improvement will be combined with modern radiobiology-driven adaptive treatment concepts and innovative forms of prospective automatized data collection and outcome assessment.

### Research team and infrastructure

Located in Vienna, the most livable city in the world, the Department of Radiation Oncology at the Medical University of Vienna is a high-end equipped photon and brachytherapy department where cutting-edge research meets excellent oncological care. The interdisciplinary team in this project is put together by medical doctors, the medical radiation physics group and the large group of RTTs and study assistants.

### What We Offer

- A highly interdisciplinary and collaborative work environment.
- Access to state-of-the-art facilities and technologies
- Strong collaboration with the industrial partners Elekta, Brainlab and Philips
- Strong collaboration and network between the interdisciplinary projects
- Enrolment in the Doctoral PhD program N094 at the Medical University of Vienna
- **Funding that covers all research costs, work – related travel expenses, salary and health insurance for 3.5 years**

### What We Expect

- Analytical skills and ability to work independently on a project basis
- Good written and verbal communication skills
- Fluent in English (oral and written)

### General project and contact information

- Start of project: as soon as possible
- Place of work: Department of Radiation Oncology, Medical University of Vienna, Vienna
- Salary: 30 hours/week (according to salary scheme of the Austrian science fund FWF - <https://www.fwf.ac.at/en/research-funding/personnel-costs>)
- Closing date for application: 13.06.2025

**All detailed information on the open positions can be found on our homepage:**  
<https://radioonkologie.meduniwien.ac.at/studium-aus-und-weiterbildung/abschlussarbeiten/dissertationen/>



Please submit your application including a CV and motivation letter to Barbara Knäusl ([barbara.knaeusl@meduniwien.ac.at](mailto:barbara.knaeusl@meduniwien.ac.at)) and Maximilian Schmid ([maximilian.a.schmid@meduniwien.ac.at](mailto:maximilian.a.schmid@meduniwien.ac.at))

The employer does not discriminate on the grounds of race, colour, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age or disability.

Disabled candidates are preferentially considered in case of equal qualification. Applications from women are encouraged.

### **PhD position on “Clinical implementation of MRI and CBCT based adaptive radiation oncology”**

#### **About the Project**

This research project will focus on different pillars: (1) Evaluation of the use of MRI and CBCT in an adaptive treatment protocol for head and neck cancer patients ; (2) Clinical implementation and evaluation of MRI-guided adaptive brachytherapy for anal and rectal cancer; (3) Inclusion of CBCT image information in daily clinical routine employing deep-learning-based models for organ segmentation and workflow development

#### **Key Responsibilities**

##### **1. Workflow development**

- Contributing to clinical protocols for CBCT and X-ray based treatment adaptation
- Script development for automating clinical workflows

##### **2. Clinical studies**

- Participation in retrospective and prospective clinical studies
- Interdisciplinary collaboration with radiation oncology, radiology and medical physics.
- Organisation, support and supervision of the implementation of the clinical studies including patient monitoring.

##### **3. Data analysis and validation**

- Evaluation of CBCT-based autosegmentation
- Analysis and processing of longitudinal MRI data
- Radiotherapy treatment plan comparison

#### **Qualifications**

- MSc or equivalent degree in biomedical engineering, physics, medical informatics or other technology-oriented medical studies.
- Research interest for MRI in radiation oncology, image-guided adaptive radiotherapy, clinical workflow development
- Skills in data management and basic statistical methods required, basic knowledge in radiation oncology and radiology recommended, experience in image analysis and processing preferred.