

## University of Colorado Physics Residency Master Schedule 2024 - 2025

Rotation	Topics	Rotation Mentor	First Year Resident												Second Year Resident												
			July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
<b>Rotation 1: Workflow, Equipment, Dosimetry</b>	Intro to radiation and workplace safety	<b>Tripp</b> (Adam, Leah)																									
	Intro to professionalism and ethics																										
	Intro to equipment operation																										
	Intro to workflow (clinic, sim, planning, treatment)																										
	Dosimeters and dosimetry systems																										
	OSLD calibration and patient QA in vivo measurements																										
	Dosimeters and dosimetry systems																										
Patient IMRT QA measurements																											
Communication and interpersonal skills																											
<b>Rotation 2: Treatment Planning and Physics Checks</b>	Photon/electron beam interactions and hand calculations	<b>Kelly &amp; Greg</b> (Moyed)																									
	2D planning (electrons, TBI, TSE) and shielding fabrication																										
	Palliative and definitive 3DCRT planning																										
	Physics plan and chart reviews																										
	IMRT and VMAT treatment planning																										
	Physics principles applied to treatment planning																										
	Special physics consults (pregnant patient, pacemakers, prosthesis)																										
<b>Rotation 3: SRS/SRT/SBRT Special Procedures</b>	SRS/SRT/SBRT treatment planning	<b>Christina</b> (Kelly, Cem)																									
	SRS/SRT/SBRT physics, equipment, QA, program commissioning																										
	Specialty machines: Gamma Knife, Cyber Knife																										
	Linac design principles																										
<b>Rotation 4: External Beam Machines</b>	Beam data measurements and scanning	<b>Cem</b> (Dave D)																									
	Beam calibration (TG-51)																										
	Small field dosimetry measurements																										
	Large field dosimetry (TBI/TSE measurements)																										
	Quality and safety strategies																										
	Monthly quality assurance																										
	Annual quality assurance																										
<b>Rotation 5: Brachytherapy</b>	Brachytherapy sources and dose calculation	<b>Greg &amp; Adam</b> (Cem, Quentin)																									
	HDR brachytherapy treatment, planning, QA																										
	HDR source exchange																										
	Brachytherapy commissioning																										
	LDR brachytherapy treatment, planning, QA																										
	Radioiodine and intraoperative therapy																										
	Radiation protection applied to brachytherapy																										
Hotlab QA and inventory																											
<b>Rotation 6: Clinical Projects and Emerging Topics</b>	Clinical development projects	<b>Leah</b> (David W, Moyed)																									
	Protons																										
<b>Rotation 7: Imaging in Radiation Oncology</b>	Optional: Innovations in imaging, planning, treatment, tools, etc*	<b>Dave D</b> (Tripp, Leah)																									
	Basic principles of imaging																										
	Clinical physics in radiology and nuclear medicine																										
	Image registration algorithms & informatics																										
	IGRT & SGRT																										
Motion management																											
Imaging QA																											
<b>Rotation 8: Facility Commissioning &amp; Treatment Planning Algorithms</b>	New facility commissioning	<b>Quentin &amp; Jason</b>																									
	Linac acceptance testing and commissioning																										
	Treatment planning algorithms																										
<b>Rotation 9: Beam Modeling and Shielding</b>	Beam modeling and TPS commissioning	<b>Dave W &amp; Jason</b> (Christina)																									
	Shielding and radiation safety																										
	Radiation protection applied to shielding and monitoring																										
Clinical physics practice																											

**Key**

- rotation window/observation/participation
- procedures happen rarely, so should be involved whenever they occur if possible
- responsible
- Rotation Q&A focus (other rotation topics are also included)
- practical skills exam
- Chief rotation mentor indicated in bold text
- Rotation assistants indicated in non-bold text in parenthesis
- \* = optional, not required