

Carl Magnus Nilsson

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Profile

Medical Physicist with strong focus on radiobiology in radiotherapy: NTCP/TCP modelling, EQD2 conversions, treatment planning (3D/IMRT/VMAT/SBRT), imaging workflows (MRI/CT/PET), and patient-specific/machine QA. Recent emphasis on proton therapy, DECT commissioning/validation, and development of C# tools to support biology-informed plan comparisons. Experienced educator and organiser of internal seminars for clinicians.

Key Skills

- Radiobiology & modelling: NTCP/TCP, gEUD, EQD2, risk/benefit comparisons
- Proton therapy: clinical work, patient-specific and machine QA; DECT commissioning/validation
- Imaging workflows: MRI/CT/PET responsibility & protocol optimisation (incl. prostate MRI)
- Planning & QA: 3D/IMRT/VMAT/SBRT; Portal Dosimetry; TrueBeam/Clinac QA
- Education & outreach: teaching physicists/doctors/RTTs; organising internal seminars/'Proton School' sessions
- Development: C# utilities for biology-assisted plan comparisons and workflow support

Selected Biology-focused Contributions

- Built and validated NTCP/TCP-assisted comparison tools (C#) to support clinical decision making.
- Applied EQD2/gEUD conversions for cross-plan comparisons; curated organ parameter libraries.
- Commissioned/validated Dual-Energy CT for improved tissue characterisation in treatment planning.
- Prepared and delivered radiobiology-oriented briefings for multi-disciplinary staff meetings.

Experience (selected)

Medical Physicist — Skandionkliniken, Uppsala — May 2023 – present

- Clinical work including patient-specific and machine QA; support/training for clinical staff.
- DECT commissioning/validation; adoption of new proton QA device (XRV-124).
- Development of C# tools for NTCP/TCP-assisted plan comparisons; participation in ESTRO particle/radiobiology courses.

Medical Physicist — Region Zealand, Næstved, Denmark — 2017–2019, 2020 – May 2023

- Treatment planning across disease sites; disease-site lead for prostate cancer.
- QA on TrueBeams/Clinacs; 3D/VMAT; Portal Dosimetry.
- Imaging lead: MRI/CT/PET protocols; optimisation of prostate MRI protocols.
- AI evaluation of auto-segmented OARs; participation in proton planning workshops.

Applications Specialist — IBA Dosimetry — 2019 – 2020

- Customer demos, trainings, competitor comparisons, distributor support.

Applications Specialist — Elekta — 2017

- Teaching Mosaic; HelpDesk support for Mosaic–TrueBeam communication.

Applications Specialist — Varian Medical Systems — 2011 – 2017

- Training: TrueBeam, Eclipse, Velocity, Portal Dosimetry, RapidPlan, SmartSegmentation, SmartAdapt; pre-sales/tender and customer support.

Earlier clinical roles — 2008 – 2011

- Newcastle upon Tyne (UK), Malmö, Kalmar: QA, planning, imaging QA, method development.

Publications & Conferences (selected)

Peer-reviewed article in Radiation and Environmental Biophysics; proceedings talk on QA (Medical Physics in the Baltic States, 2009).

Languages

Swedish (native) • English (fluent; CAE) • Danish (working) • German (conversational)

Service & Professional Activities

Service & professional activities: organiser of internal seminars and educational sessions; prepared course summaries for clinical audiences; union health & safety representative (Denmark). References available on request.