

# MEDICAL PHYSICS SEMINAR SERIES



## David Adam

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**Monday, March 21, 2022**

**4:00PM (CT) via Webex**

**Scan to join:**



## ***Combining external beam radiotherapy and radiopharmaceutical therapy dosimetry for recurrent head and neck cancer treatment***

Approximately 50% of head and neck cancer (HNC) patients will experience locoregional disease recurrence (mouth, throat, neck) following initial courses of therapy which commonly includes primary or secondary external beam radiation therapy (EBRT). Retreatment is technically challenging due to the complex anatomy and vital physiological role of tumor-involved structures; as such, retreatment is accompanied by a significant risk of irreversible damage to normal tissues. Radiopharmaceutical therapy (RPT), in conjunction with EBRT, shows promise as a method to both offer disease control and mitigate potential high-grade toxicities associated with current re-treatment methods. The work presented has been the development of a Monte Carlo based dosimetry platform to accurately characterize the absorbed dose distributions and associated uncertainties from combined EBRT and RPT treatments to better inform treatment planning and delivery of the combination of these two types of radiotherapy. This talk will highlight the application of this workflow supporting a phase I clinical trial in humans investigating the efficacy of combining EBRT and a radio-iodinated (Iodine-131) alkylphosphocholine analog for treating relapsed HNC with curative intent.



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