

## 6th RaDIATE Collaboration Meeting



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## The ARIEL Symbiotic Target Module (ASTM)

*Tuesday, 10 December 2019 17:00 (2 hours)*

TRIUMF is currently expanding its capacity for science by developing the Advanced Rare IsotopE Laboratory (ARIEL), an Isotope Separation On-Line (ISOL) facility utilizing 500 MeV proton and up to 50 MeV electron driver beams. The ARIEL Proton Target West (APTW) has been optimized for nuclear spallation reactions – with up to 20% of the proton driver beam being deposited in the ISOL target. Instead of immediately directing the beam to a copper dump, the remaining beam will be used to produce medical isotopes, in particular  $^{225}\text{Ac}$ . Thorium targets –comprised of discs weighing up to 1.5 kg total –will be hermetically sealed and irradiated immediately upstream of the APTW beam dump. This irradiation station will be housed within the ARIEL Symbiotic Target Module (ASTM), adhering to the modular design paradigm used in ARIEL. The target will then be rapidly transported via pneumatic transfer system to a hot cell for post processing and packaging. This design effort resulted in the definition of ASTM, including equipment for remote actuation, supply of cooling water to the target, and other infrastructure essential to of the medical isotope production.

**Presenter:** Mr SMITH, Joshua (TRIUMF)

**Session Classification:** Poster session