

Abstract Submitted  
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**Neutron Distributions Surrounding a Medical Linear Accelerator** ALLEN ALFADHEL, PAUL JOHNSON, JACK THOMAS, MOLLY MCDONOUGH, ERICK BERGSTROM, JACKSON NOLAN, MARIO ROJAS, DR. WALTER JOHNSON, DR. JACQUELINE NYAMWANDA, Suffolk University, MASS GENERAL HOSPITAL COLLABORATION<sup>1</sup> — Bubble neutron detectors and high purity metal foils were used for determining the neutron distribution in the space surrounding a medical linear accelerator (LINAC). The neutron fluence at some point depends on the direct radiation from the head with its inverse distance squared dependence and another term due to the low energy scattered and thermal neutrons. The bubble detectors provide information in the 200 Kev to 15 MEV range and neutron activation of the metal foils provides information in the 0.25 eV to 250 keV range. The neutron fluence equation with Q dependence on the inverse squared term and also on the low energy neutrons provides a means of determining Q for the machine.

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