



Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: **Thursday, 22 November 2018**
Time: **1:30 p.m.**
Location: **Physics & Astronomy Seminar Room 100**

Dr. Aaron Price

Department of Mechanical & Materials Engineering
Western University

"4D Printing and the Future of Additive Manufacturing"

ABSTRACT

3D Printing has recently emerged as a ubiquitous technology in today's manufacturing landscape. In recent years, the combination of expiring intellectual property in conjunction with advances in material science and automation technology has led to an explosion of rapid advances in Additive Manufacturing, resulting in the explicit identification of this field as a strategic research area at both the provincial and federal levels. In this seminar, the frontier of contemporary AM research is explored with a focus on recent advancements leading to specially developed printable and multifunctional materials and the corresponding innovative 3D printing processes typically required to enable their utilization.

To this end, several research initiatives conducted at Dr. Price's Organic Mechatronics and Smart Materials Laboratory will be showcased that demonstrate recent AM innovations that achieve shape-shifting 3D components realized through integrated smart material transducers through a process known as 4D Printing. Active components fabricated through these methods may be employed as sensors, actuators and energy harvesters and are particularly attractive for integration in a wide variety of potential applications including microelectromechanical systems, microfluidics/lab-on-a-chip applications, imaging and optical systems, drug-delivery platforms, corrosion protection and radiation shielding.

The talk concludes with an introduction to a selection of key additive manufacturing initiatives enabled via Western's role in Canada's recently established Advanced Manufacturing Innovation Supercluster, Next Generation Manufacturing Canada (NGen), whose aim is to develop new AM technologies and drive the industrialization of additive manufacturing in concert with Canadian industrial partners.

HOST: T. Poepping

COFFEE + light snacks will be available in the Atrium, 2nd floor, at 1:15 p.m.