

# Chemistry Seminar

## “Chemical Tools for Studying Carcinogen-Induced DNA Damage”

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University of Minnesota

**Wednesday, October 7  
12:00 p.m.  
Wick Science Building 122**

### **Abstract:**

DNA damage arising from exposure to both endogenous and exogenous alkylating agents, if not effectively repaired, may lead to mutation. A common structural motif associated with DNA alkylation involves the formation of bulky  $O^6$ -alkylguanine adducts. These DNA adducts are found physiologically at very low levels, and in part because of this, it has been difficult to evaluate their specific contributions to carcinogenesis. We have pursued a strategy involving synthetic nucleoside analogs to probe the occurrence and properties of  $O^6$ -benzylguanine ( $O^6$ BnG) in DNA as a representative bulky adduct. Previous studies have shown that the Y-family polymerase dpo4 can undergo translesion DNA synthesis past these bulky  $O^6$ BnG adducts. In our lab studies are being carried out to address aspects of polymerase-mediated synthesis of DNA involving synthetic  $O^6$ BnG-modified templates and potentially complementary synthetic nucleoside triphosphates.

**Ms. Gahlon will be available to meet with students at 1:00 p.m. in WSB-344**