

M & I  
Microbiology  
and Immunology  
University of North Carolina at Chapel Hill

DISSERTATION SEMINAR

**Christof Smith**

**“Adaptive immunity and the tumor immune  
microenvironment.”**

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6004 Marsico Hall

Dissertation Advisor: Dr. Jonathan Serody

Presented in partial fulfillment of the requirements for the degree of Doctor of  
Philosophy

## **ABSTRACT**

**Christof Smith:** Adaptive immunity and the tumor immune microenvironment  
(Under the direction of Jonathan Serody)

The adaptive immune system is essential for production of anti-tumor immune responses, with the majority of current immunotherapeutics designed to modulate the interaction between adaptive immunity and tumor cells within the tumor-immune microenvironment. This dissertation addresses three translational goals regarding our understanding and modulation of anti-tumor adaptive immunity: 1) Improvement of understanding for existing immunotherapies such as checkpoint inhibitor therapy; 2) Improvement of efficacy for novel immunotherapeutics currently in development including tumor neoantigen vaccines; and 3) Development of next-generation immunotherapies through identification of novel anti-tumor vaccine targets, as well as development of diagnostic tools including biomarkers of immunotherapy response and immune-imaging modalities.