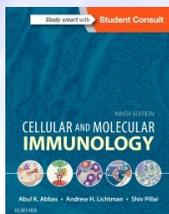


## WORKSHOP

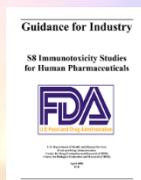
# “MOLECULAR AND CELLULAR IMMUNOLOGY: FROM BASICS TO APPLICATIONS IN PRECLINICAL DEVELOPMENT OF NANOTECHNOLOGY-FORMULATED DRUGS”

This on-line workshop includes lectures covering fundamental aspects of the immune system structure and function at both molecular and cellular levels, principles of immunotoxicology, regulatory requirements for assessing the immunotoxicity of new pharmaceutical products, methodology relevant to the immunotoxicity assessment of nanomaterials and case-studies focusing on the critical structure-activity relationship between nanoparticles and the immune system. The entire workshop spans nine (9) days and includes one 2-hour lecture per day, taking place May 18-22 and 25-28, 2020, from 11 am to 1 pm EDT. Registration is free but participants are asked to sign-up by sending an e-mail to [ncl@mail.nih.gov](mailto:ncl@mail.nih.gov) by May 14, 2020.



**The first five lectures** cover materials described in “Cellular and Molecular Immunology,” 9<sup>th</sup> edition, Abbas, A., Lichtman A., and Pillai, S. The purpose of these lectures is to create a strong foundation of basic immunology concepts. These lectures are intended for students and researchers without prior training in immunology.

**Lectures 6-9** are intended for attendees of the first five lectures and researchers with a background in immunology who want to learn applied immunotoxicology aspects of preclinical nanoparticle characterization.



**Lecture 6** covers the basic principles of immunotoxicology and reviews information summarized in the FDA guidance for industry documents.



**Lectures 7 and 8** will review immunotoxicology of engineered nanomaterials and the aspects of preclinical characterization.

**Lecture 9** will focus on practical applications of the current knowledge regarding nanoparticle immunotoxicity to translate nanomaterials from bench-to bedside

*Questions??? Contact Dr. Marina A. Dobrovolskaia,  
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