MSRI
Mathematical Sciences Research Institute

NCTS
National Center for Theoretical Sciences

# MSRI-NCTS Joint Summer School on Toric Varieties

**Date** 2019.7.29~8.9 (Weekdays) 9:00~17:00

**Venue** National Center for Theoretical Sciences

## Speakers

**David Cox** (University of Massachusetts, Amherst)
**Henry Schenck** (Iowa State University)

## Description

Toric varieties are algebraic varieties defined by combinatorial data, and there is a wonderful interplay between algebra, combinatorics and geometry involved in their study. Many of the key concepts of abstract algebraic geometry (for example, constructing a variety by gluing affine pieces) have very concrete interpretations in the toric case, making toric varieties an ideal tool for introducing students to abstruse concepts.

## Suggested Prerequisites

- Chapters 1,2,3,4,5,8 of "Ideals, Varieties and Algorithms" and Sections 1.0, 2.0, 3.0, 4.0 and 6.0 of "Toric Varieties" (Section 0 of these chapters is a background section that discusses algebraic geometry with no knowledge of toric varieties required). An alternative to the Sections 0 would be "Introduction to Algebraic Geometry", available at https://dacox.people.amherst.edu/.
- Chapters 1,2,3,4 of Ravi Vakil's excellent text "Foundation of Algebraic Geometry", freely available at math.stanford.edu/~vakil/216blog/FOAGjun1113public.pdf
- Chapters 1 and 2 of Hartshorne's "Algebraic Geometry".

**Contact** Annie Wang E-mail seminar@ncts.tw Tel 02-33668811