# Chapter 1

# Fans and Normal Complexes

## 1.1 Bergmann Fans

**1.Quick definition of a fan?**

### 1.1.1 How to make a Bergmann Fan

**2.Show definition from Chow Ring to Bergmann Fan 3.Work our small example into a fan**

### 1.1.2 Properties of Bergmann Fans

**4.Figure out their important properties. They're unimodal, so we'll include that. Oh, they're balanced as well (and so tropical). What am I missing? 5.Define star of a fan. Reference A-H-K; star of a Bergmann fan is again a Bergmann fan? Or something like that**

## 1.2 What the Hell is a Normal Complex

## 1.3 Analogues to Polytopes

### 1.3.1 Oh no, We Can Define the Faces of a Normal Complex

**6.Define facets and show they're normal complexes themselves. Show the analogues of polytope faces (mostly?) hold**

## 1.4 Computing Volumes of Normal Complexes

### 1.4.1 Recursive Definition of Volume (via Facets)

### 1.4.2 Volume as Degree Map Evaluation

## 1.5 Mixed Volumes of Normal Complexes

### 1.5.1 What is the Standard Mixed Volume

### 1.5.2 Extending Mixed Volume to Normal Complexes

### 1.5.3 Some Nice Properties of Mixed Volumes

**7.Cite Lauren. A-F Inequalities.**