

# ISU ALGEBRA SEMINAR



## FALL 2017 SCHEDULE

Thursdays, 12:00 PM-12:50 PM in Williams Hall, room 21

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**September 7, 2017**

**Speaker: Sunil Chebolu**

**Talk title: Fuchs' problem for finite  $p$ -groups : Part I**

**Abstract:** More than 50 years ago, Laszlo Fuchs asked which groups can be realized as the group of units of a ring. I will present an overview of the research which I did with Keir Lockridge over the summer. We solved this problem for all finite  $p$ -groups in odd characteristics, and also for all finite  $p$ -groups which have a cyclic subgroup of index  $p$  in all characteristics. In particular, I will show an interesting connection which I discovered recently while driving on I-57 highway! This is the connection between Fuchs' problem and a classical problem in geometry which goes back to the ancient Greeks (which regular polygons can be constructed using straightedge and compass).