

Friday, November 30, 2018, 4:10 pm

COLLOQUIUM TALK

Speaker: **Amin Bahmanian (ISU)**

Old Main 2210

## Connected Fair Detachments of Hypergraphs

### Abstract:

A hypergraph  $G$  is an ordered pair  $(V(G), E(G))$ , where  $V(G)$  is the set of vertices of  $G$  and  $E(G)$  is the edge multiset of  $G$ . Moreover, each edge is a multi-subset of  $V(G)$ , in the sense that it can contain several copies of each vertex. A  $(v, n)$ -detachment of a hypergraph is formed by splitting the vertex  $v$  into  $v_1, \dots, v_n$ , and sharing the incident edges arbitrarily among the subvertices. Let  $G$  be a hypergraph whose edges are colored with  $k$  different colors. We prove that there exists a  $(v, n)$ -detachment  $F$  such that the degree of each vertex and the multiplicity of each edge in  $G$  (and each color class of  $G$ ) are shared fairly among the subvertices in  $F$  (and each color class of  $F$ , respectively). Moreover, we provide necessary and sufficient conditions under which each color class of  $F$  is connected. Some applications of this result will be discussed.

SNACKS IN FACULTY LOUNGE AT 3:30 PM.  
EVERYONE WELCOME (EVEN IF YOU ARE UNABLE TO ATTEND THE TALK)

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