

**Fariborz Maseeh Dept. of Mathematics & Statistics**  
**Portland State University**

**ANALYSIS SEMINAR**

Friday, May 23, 2013

2 PM in NH 346

**George Nicol**

will speak on:

***Closure Systems II***

**Abstract:** A closure system  $(X, k)$ , made up of a nonempty set  $X$  and a closure function  $k$ , generates an Intersection Space  $(X, t)$ , a topological space in which the arbitrary intersection of open sets is open. An example will be presented that shows how to generate a non-discrete, non-trivial Intersection space for any group  $G$ , which then can be extended into a Boolean Algebra.

In addition, a specific type of closure function called a cfilter and how it generates an Intersection space for any group will be shown. How cfilters form a commutative, idempotent semi-group with identity will be presented.

Also to be given is a Minimal-Information Problem, the solution of which is found in a cfilter table which in turn generates an interesting class of numbers called S-Numbers.

Finally, time permitting, an example of an Automata that is both a group and an Intersection Space will be shown. There seems to be no shortage of examples of Intersection Spaces.