# VCU Discrete Mathematics Seminar

## *An Introduction to Discharging: Light Subgraphs in Planar Graphs*


## Prof Dan Cranston
## VCU!


Tuesday, Feb. 11
12:30–1:20
4119 Harris Hall


Abstract: The discharging method is a counting technique used to prove the existence of certain subgraphs within each graph in a given class. It has numerous applications in graph coloring (as well as other areas), and was a key tool in proving the 4 Color Theorem. In this talk we'll consider planar graphs.

An example of one result we'll prove is the following. Every planar graph with minimum degree 5 has a vertex of degree 5 with two neighbors, each of degree at most 6. No background will be assumed beyond Math 300.

Spring 2014 speakers will include Chris Manon (GMU), Hernan Abeledo (GW), Ghidewon Abay, Richard Hammack, Craig Larson, Patrick Gaskill, and Cristina Mullican. For the schedule, as well as titles and abstracts, see:
`http://www.people.vcu.edu/~dcranston/DM-seminar/`