VCU Discrete Mathematics Seminar

Star-coloring planar graphs with high girth

Prof Dan Cranston
VCU!

Tuesday, Feb. 25
12:30–1:20
4119 Harris Hall

Abstract: A star-coloring is a proper vertex-coloring with no 2-colored path on four vertices. Star-coloring has been studied extensively, even for planar graphs. However, little is known about improved upper bounds for planar graphs with large girth (the length of the shortest cycle). We prove that a planar graph with girth at least 14 has star-chromatic number at most 4. We use the discharging method to prove a structural lemma about planar graphs with girth at least 14. It is then easy to construct the 4-star-coloring using this lemma.

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/`