

# VIGRE Research group: **Circle Packing**

## Fall 2009 and Spring 2010

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- **Time and Place:** T 12:30 - 1 :30 , Boyd 410
  - **Instructor:** Sa'ar Hersonsky
    - **E-mail:** saarh@math.uga.edu      No email w/o Javascript.
    - **Office:** Boyd 408      **Office Phone:** 2-2587
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### Description

I lead a research oriented focus group on circle packing. Circle packing were first introduced by Koebe (1930), forgotten for along time, re-discovered by Andreev (1970) and got their publicity by Thurston (1980's).

Circle packing are very useful in understanding various aspects of conformal and low dimensional topology.

We will pretty much follow the group interests. Topics for further research may include:

- Discrete analytic Functions
- Approximation of conformal maps by circle mapping maps
- Creating new discrete analytic maps using circle packing
- Apollonian packing
- Random walks and Circle packing

and much more. This is a field which leads quickly to open questions and so far the techniques in the field have been a beautiful mix of combinatorics, conformal maps, differential geometry and topology. If you can program and enjoy it, you will have many opportunities to use your skills and experiment mathematics.

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### Prerequisites

While the very first definitions in this field are simple, the theory becomes quite involved and tricky very quickly.

You definitely need to be beyond your series of Linear Algebra and Calculus. Exposure to Differential geometry and/or complex analysis and/or programming is highly desired.

Equally important for me (and probably even more) is how self motivated and self starter you are.

In order for you to see if the subject is of interest to you and for me to get a gauge of your compatibility with what I require, please do the following:

1. Have a look at the [Gallery](#) ; if the pictures are something you would like to understand, read a little bit from [Notices article](#) or from [ACS revised](#).

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