Robert Bieri
Visiting Professor
Ph.D.
At Binghamton since 2010
Areas of Interest: Geometric, homological, combinatorial and asymptotic methods in group theory
Summary of research interests

E-mail:	rbieri@math.binghamton.edu
Phone:	(607) 777-3599
Fax:	(607) 777-2450

- **Office:** WH 130
- **Office hours:**
- **Courses:**
  - **Fall 2018**

My Course in Binghamton, Fall 2016: **Topics on infinite groups (the Cayley graph and beyond)**

Let G be a group generated by a finite set X of its elements. The *Cayley graph* $\Gamma = \Gamma(G,X)$ is the colored graph defined as follows: the vertices of Γ are the elements of G; the elements of X are the colors, and two vertices g and g' are connected by an edge of color x if g' = gx. The course is designed for graduate students in their third year. I will assume that the audience went through introductory courses on “groups”, on “rings and modules”, and on “topology”, and is interested to see (fairly elementary) algebraic and geometric techniques at work.

The idea is

1. to offer a range of examples of groups and techniques revolving around the Cayleygraph of finitely generated infinite groups,

2. to use the special case of metabelian groups to link the geometric Cayley graph view-point with commutative algebra and tropical geometry, and

3. to explain and use some elementary topological and homological techniques and show how they are used to extend consideration of the Cayley graph $\Gamma(G,X)$ to the Cayley complex $\Gamma(G,X,R)$ of a presentation $G = < X ; R >$ and beyond.

Here's a link to my previous rather outdated personal web page.

From:
https://www2.math.binghamton.edu/ - **Binghamton University Department of Mathematical Sciences**

Permanent link:
https://www2.math.binghamton.edu/p/people/rbieri/start

Last update: **2018/11/20 10:10**