

# BAMA 3

School Year 2016—2017  
Join us for a free talk...

## Jordan Schettler

*Number Theory and Music:  
How to Build a Fanned-Fret Guitar and a Xenharmonic Keyboard*



**San Jose State University\***  
**Science Building, Rm. 164**

**7:30 pm**  
**Wednesday, December 7, 2016**

There is quite a bit of mathematics underlying the sounds that various musical instruments make. Number theory, in particular, plays a special role. We will discuss (1) how a famous formula for  $\pi$  is related to a synthesizer, (2) how the frets on a guitar exhibit a strange and beautiful geometry, and (3) how continued fractions determine the number and arrangement of keys on a piano (or on other things like pianos but which have never been built).

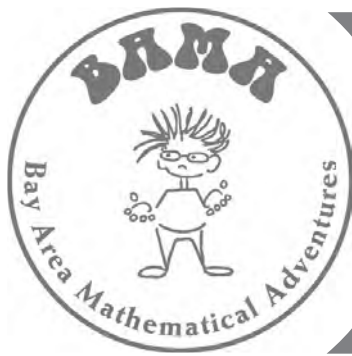
*Jordan Schettler* is an Assistant Professor at San Jose State University. His research is primarily in number theory and includes the study of numbers fields, elliptic curves, and continued fractions. He is also very much interested in the connection of mathematics to art, music, and social justice.



\* See back for map and directions.

Visit the Bay Area Mathematical Adventures (BAMA) at <http://mathematicaladventures.org>

To receive email notifications about BAMA talks, please contact Frank Farris at [ffarris@scu.edu](mailto:ffarris@scu.edu) .



# BAMA

## Bay Area Mathematical Adventures

A series of presentations on diverse topics by remarkable mathematicians. All talks are free and open to the public.

### WHY?

BAMA aims to challenge and motivate students to think mathematically. Speakers will present real mathematics, and will share with the audience modern views of mathematics. Some talks will provide students with related problems, or will enable teachers to expand later on the topics with their students.

### WHO?

BAMA is aimed at bright high-school age students. However, all are welcome: younger or older students, teachers, parents, and the general public.

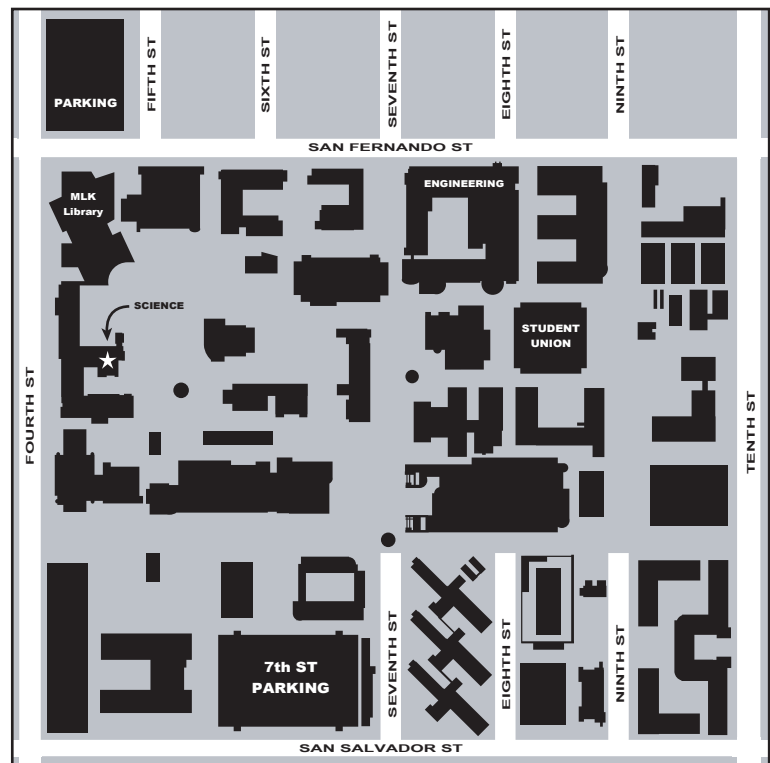
### WHEN?

Evening talks will be given approximately once a month between September and April. Each talk will be self-contained (speakers will not assume their audiences have attended previous talks).

### WHERE?

#### San Jose State University Science Building, Rm 164

- From 101 take the First Street or Guadalupe Expressway exit and go to Fourth Street.
- Take Fourth to San Salvador Street; turn left onto San Salvador and park in the South Garage. The automated pay stations located on level 3 and above accept coins, \$1, \$5 and \$10 bills, Visa or Master Cards. Parking is \$1.00 per ½ hour or \$5.00 day pass after 5:30.
- From 280 take the 7th Street exit and turn North on Seventh St. The garage is on the left after 5 or 6 blocks.



#### SPONSORS:

**San Jose State University**  
Department of Mathematics and College of Science

**Santa Clara University**  
Department of Mathematics and Computer Science

**American Institute of Mathematics**  
**Mathematical Sciences Research Institute**

#### FOR MORE INFO:

<http://www.mathematicaladventures.org>

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