BAMA 1

School Year 2020—2021

join us for a free talk..

Edmund Harriss

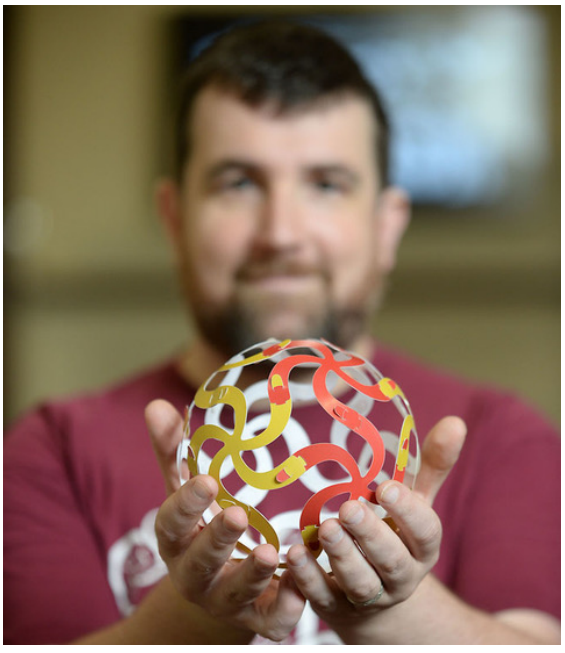
CNC Craft: The mathematics of moving machines to make

Santa Clara University

Tuesday, Oct 13, 2020, 7:30 pm

Robots that make things are an amazing way to turn mathematical ideas into physical objects. We can describe curves and surfaces in space with many different mathematical ideas, but when those curves become the path that a router takes through wood they become real in a new way. The process of converting mathematical curves into that machine movement is called CNC, short for computer numerical control. These machines are essentially vectors brought to life, and giving them a list of points to pass through makes a mathematical curve real. In this talk I will show how an understanding of geometry helps to explore what these machines are capable of, and how the movement of these machines illustrates many mathematical concepts.

Edmund Harriss is a mathematician, teacher, artist and maker, in the Department of Mathematical Sciences at the University of Arkansas. His research veers from illustrating algebraic numbers, through the differential geometry of controlling CNC machines to mathematical art and perceptualism. His research has appeared in journals including Nature, and the proceedings of the National Academy of Science, as well as in the national and international media, including New Scientist, NPR, the Guardian, and Numberphile. His artwork is installed in several universities from Imperial College in London to the University of Arkansas, including a 12′ metal sculpture currently (Fall 2020) being installed at the University of Arkansas. He has created two adult coloring books of mathematical images which open up a large range of mathematical topics to a wide range of people.



Edmund Harriss, by Andy Shupe

*** See back for Zoom link**

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 .

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?

Online via Zoom

Join Zoom Meeting between 7:15 and 7:30 pm

https://scu.zoom.us/j/98069966291?pwd=bHRvN3dLK3pweDMvZTBTL0VRM2pYdz09

Meeting ID: 980 6996 6291

Password: 048753

Join by phone:+16699006833,,98069966291#

You are welcome to share the Zoom link with trusted parties, but please do not post on social media.

If you have a disability and require reasonable accommodation, please email ffarris@scu.edu, call anyone on the steering committee, or call 1-800-735-2929 (TTY—California Relay) 24 hours in advance.

Three studies, by Edmund Harriss

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BAMA Steering Committee:

Tatiana Shubin	SJSU	408-924-5146
Frank Farris	SCU	408-554-4430
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