

BAMA 1

School Year 2022—2023
Join us for a free talk...

Sara Krehbiel, Santa Clara U *All the Ways to Color a Graph*

**Via Zoom at 7:30 pm
September 27, 2022**

<https://scu.zoom.us/j/97937836316?pwd=TGRWCXJER1U5d0tWR1VmUU9nVkZPZz09>

Please join meeting between 7:15 and 7:30 pm

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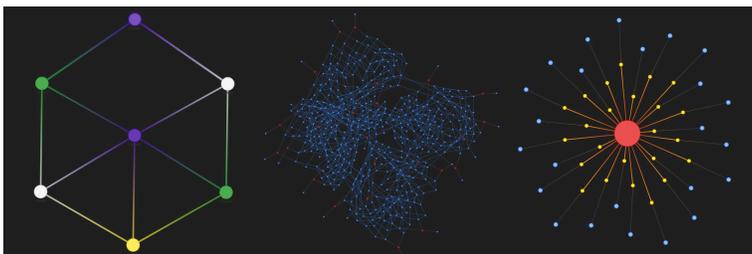
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Suppose you need to schedule several sports practices to allow people who play multiple sports to attend all their practices. What are all the ways to do this, and how are different ways related? Graph coloring can help! Each sport corresponds to a node, two sports with overlapping rosters have an edge between their nodes, and times are represented by colors. A proper coloring is an assignment of colors to nodes so that no two adjacent nodes get the same color.

In this talk I will introduce the graph coloring problem and related mathematical objects. We'll see a visualization tool developed by several undergraduates to help us explore structural properties of colorings, and show how symmetry plays an important role in this problem. I will also talk about why connectivity of the solution space matters for computational tasks such as sampling. This talk is targeted toward anyone interested in patterns and puzzles!

Sara Krehbiel is an assistant professor in the department of mathematics and computer science at Santa Clara University. Her research involves several areas of math and theoretical computer science, including data privacy and graph theory. Outside of work, Sara enjoys hiking, rock climbing, and exploring the amazing Bay Area.



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