

# PCXML 2025 Presentations

Please join us on **Tuesday, July 22nd, 2025** at **5:30pm** in the **Bison Conference Room** for project presentations from the PCMI Undergraduate Experimental Math Lab!

## Block 1 (5:30pm-6:20pm)

1. Homomorphism densities from alternating paths and trees into edge-colored graphs  
*June Lee, Stacey Sharfberg, Maria Wieczorek*
2. Weak saturation number of the cube  $Q_3$  in the complete graph  $K_n$   
*Tanupat Trakulthongchai, Derek Xu, Kelin Zhu*
3. Generalized extremal numbers in various ambient graphs  
*Roger Chen, Mithra Karamchedu, Lucas Waite*
4. Hypercube rainbow extremal number  
*Kenny Adeogun, Luke Hawranick, Muchen Ju, Henry Zhan*

## Block 2 (6:30pm-7:20pm)

1. Turán problems for additive prime Cayley graphs  
*Caroline Cashman, Kyle Kelley*
2. On the spectral properties of  $K_{m_1, \dots, m_r}$  and the permutohedron  
*Dmytro Antonovych, Evan Glasgow, Quinn Mayo, Nathaniel Shaffer, Niccolo Turillo*
3. Counting spanning trees of Cayley graphs  
*Diana Yang*
4. Visualizing eigenpolytopes of graphs  
*Emory Guenther, Gregory Li, Minh-Anh Nguyen-Dang, Lila Perkins, David Stephens, Marisa Zarcone*

## Block 3 (7:30pm-8:30pm)

1. Intersecting families in downsets  
*Penelope Beall, David Cortez, Agnivo Sarkar*
2. Sunflower conjecture in semi-linear set systems  
*Alex Levy, Mihir Mittal, Ijay Narang*
3. Dependent random choice  
*Isaac Assink, Sanjana Das, Srijan Sundar, Mckinley Xie*
4. Cut-off phenomenon  
*Elijah Platnick, Daniel Son, Clark Wu, Jack Xie*
5. Bisecting polyominoes and  $H$ -intersecting families  
*Richard Chen, Paul Hamrick, Gary Hu*