Theresa C Anderson* (tcanderson@purdue.edu), Angel V Kumchev and Eyvindur A Palsson. *Discrete maximal functions over surfaces of higher codimension and sharp triangular counts.*

We unite two themes at the interface of analysis and number theory: intermediate codimensional integration and discrete operators. Along the way, we provide a circle method treatment of optimally counting triangles, in all dimensions greater than or equal to 7, thus complimenting work of Brandes, Raghavan and Ellenberg-Venkatesh using different techniques. We briefly describe how the unification of these themes leads to the triangular count as well as other connections. This is joint work with Eyvi Palsson and Angel Kumchev. (Received July 15, 2020)