1145-05-433 **Ryan R Martin**, **Abhishek Methuku**, **Andrew Uzzell** and **Shanise Walker***
(walkersg@uwec.edu). *The size of a family forbidding the $Y_{k,2}$ poset and its dual.*

The poset $Y_{k,2}$ consists of $k+2$ distinct elements x_1, x_2, $\ldots$, x_k, y_1, y_2, such that $x_1 \leq x_2 \leq \cdots \leq x_k \leq y_1$, y_2. The poset $Y'_{k,2}$ is the dual poset of $Y_{k,2}$. The sum of the k largest binomial coefficients of order n is denoted by $\Sigma(n,k)$. Let $\mathrm{La}^\sharp(n,\{Y_{k,2},Y'_{k,2}\})$ be the size of the largest family $\mathcal{F} \subset 2^{[n]}$ that contains neither $Y_{k,2}$ nor $Y'_{k,2}$ as an induced subposet. Methuku and Tompkins proved that $\mathrm{La}^\sharp(n,\{Y_{2,2},Y'_{2,2}\}) = \Sigma(n,2)$ for $n \geq 3$ and conjectured the generalization that if $k \geq 2$ is an integer and $n \geq k+1$, then $\mathrm{La}^\sharp(n,\{Y_{k,2},Y'_{k,2}\}) = \Sigma(n,k)$. On the other hand, it is known that $\mathrm{La}^\sharp(n,Y_{k,2})$ and $\mathrm{La}^\sharp(n,Y'_{k,2})$ are both strictly greater than $\Sigma(n,k)$. In this talk, we introduce a simple approach, motivated by discharging, to prove this conjecture. (Received September 06, 2018)