Abstract: The motivating question for this work is: Can we have both a saturated ideal and the tree property on $\aleph_2$? Towards the negative direction, we show that for a regular cardinal $\kappa$, if $2^{<\kappa} \leq \kappa^+$ and there is a weakly presaturated ideal on $\kappa^+$ concentrating on cofinality $\kappa$, then $\square^*_{\kappa}$ holds. This proves a conjecture of Foreman about the approachability ideal on $\aleph_2$ under the assumption that the continuum is at most $\aleph_2$. A surprising corollary is that if there is a weakly presaturated ideal $J$ on $\aleph_2$ such that $P(\aleph_2)/J$ is a proper forcing, then CH holds. This is joint work with Sean Cox.

This meeting will be using Zoom - please write an email to fcaldero@uic.edu or sinapova@uic.ed for login information.