RESEARCH STATEMENT

ANDREW BROOKE-TAYLOR

My research centres around large cardinal axioms and class forcing, although I am also very interested in applications of set theory, and I have also been working on Fraïssé limits.

With Sy Friedman I have been working on the interaction between large cardinals and $\square$: we show that if some κ is α^+-*subcompact*, then $\square_\alpha$ must fail, but we can force $\square$ to hold everywhere else. Similar results hold for stationary reflection. With Joan Bagaria, I have been working on applications of large cardinal axioms in category theory and related areas. I have also been working with Benedikt Löwe and Birgit Richter on set-theoretic properties of the *Bousfield lattice*, an important construct in algebraic topology. I have a paper with Damiano Testa that we've been trying to finish for a couple of years now about Fraïssé limits for infinite relational languages that locally behave like finite ones. I am also interested in the connections between rank-to-rank embeddings and LD-systems (in algebra), which I got into working on with Sheila Miller back at the first Young Set Theory Workshop.