

My research interests lie in inner model theory and coding techniques (such as Jensen's coding theorem). Specifically, I am interested in how the methods from those fields can be combined in different applications.

An example is the following theorem by J. Steel, which provides a negative answer to the 12th Delfino problem. The 12th Delfino problem asks whether the following statement holds true:

$$ZFC + \Delta \vdash PD$$

where

$\Delta =$ every projective set is Lebesgue measurable, has the Baire property and can be projectively uniformized.

Steel proved that the consistency strength of Δ is strictly less than a *Woodin* cardinal thus the above can not hold. The proof involves the use of universally Baire sets and premice of a specific kind that are used in defining the projective uniformization functions. Coding comes into play, in the part where by collapsing certain cardinals, trees that represent universal $\mathbf{\Pi}_n^1$ sets are created.

My plans are to try to extend those results and investigate the possible types of coding into core models.