Traditional oncological principles held that it was essential for an administered cytotoxic or signal-blocking drug to reach every single cancer cell in the body - an unattainable goal that almost inevitably results in the emergence of drug resistance. The advent of immune oncology has shifted the burden of tumor cell elimination to the adaptive immune system, which patrols everywhere in the body.

Thus, the job of an immunotherapy drug is to instruct the adaptive immune system - in other words, to act as a vaccine. This process is well understood to be a highly local one, leading to a groundswell of intratumoral immunotherapy efforts. We will present recent work from our lab developing new molecules and design principles for such intratumoral immune therapeutics.