



***RNA Innovation Seminar
Monday, March 11th at 3:00pm
ABC Seminar rooms, Biomedical Research
Science Building (BSRB), 109 Zina Pitcher***

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“A novel mode of RNA maturation in viruses...and beyond?”

Abstract: RNA is a very functionally diverse macromolecule, performing a large variety of tasks in the cell. Viruses also use RNA to manipulate the cellular machinery in unexpected ways, and the remarkable variety of RNA-based strategies used by viruses thus gives a window into the RNA world and its capabilities. How is RNA able to perform so many different tasks? The answer lies, in part, in the ability of RNA elements to fold into complex and unexpected three-dimensional conformations that then interact with their cellular targets and alter the target’s function. By combining structural biology, virology, biochemistry, bioinformatics, and biophysics, we seek to understand the three-dimensional folds of these RNA elements, their conformational dynamics, how they manipulate the cellular machinery, and how this relates to viral infection. In this presentation, I will present discoveries from my lab regarding RNA elements that have the ability to specifically block the ability of exonucleases to degrade RNA, leading to the production of pathogenic viral non-coding RNAs. I will reveal the structural basis for this ability, and also how we are finding these RNAs in diverse places, how we are using them to engineer novel research tools, and how we believe we have discovered a general mode of RNA maturation that may exist beyond the viral RNA world, in cellular RNAs.