1. Development of DNA binding molecules for chemical biology and biotechnology

- Development of small molecules that target DNA mismatch

- Hairpin primer PCR for SNP typing etc.

2. Regulation of RNA structure and function by synthetic RNA binding molecules

- Artificial RNA switches for strand cleavage

- Molecule induced translational frameshifting

- Screening of RNA binding molecules

- Regulation of RNA biogenesis

3. Chemical biology studies of triplet repeat diseases using DNA binding molecules

- Trinucleotide repeat diseases

- Control of secondary structures by repeat-binding molecules

- Development of repeat-binding molecules

- Small molecule induced repeat contraction