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Quantitative aspects of gene regulation by small RNAs
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Small, non-coding RNAs (sRNAs) play an important role as genetic regulators in both prokaryotes and eukaryotes. Many sRNAs act through base-pairing interaction with target messenger RNAs (mRNAs) to regulate transcription, translation, and mRNA stability. sRNAs represent a novel form of genetic regulation distinct from more thoroughly studied protein regulators. This talk addresses quantitative aspects of sRNA-mediated genetic regulation, focusing on noise, tunability, and feedback. In particular, we compare and contrast sRNA and protein regulators in an attempt to understand the comparative advantages of each form of regulation.