

## **Chemical biology on the genome**

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### *Abstract:*

In this lecture I will discuss examples of chemical advances from our laboratory that are contributing to the understanding of the chemistry, structure and function of genomic DNA. This will comprise methodology for decoding the sequence of DNA that is currently being widely used for routine human genome sequencing on a population scale, along with the implications for human health. I will discuss our work on quadruple helix-based DNA structure, which are non-canonical structural features that exist in human DNA with potential to serve as drug targets. In closing, I will discuss how large the genetic alphabet may actually be.