



Dr. Daniel J. Siegwart is an Associate Professor in the Simmons Comprehensive Cancer Center and Department of Biochemistry at UT Southwestern Medical Center. He received a B.S. in Biochemistry from Lehigh University (2003), and a Ph.D. in Chemistry from Carnegie Mellon University (2008) with University Professor Krzysztof Matyjaszewski. He also studied as a Research Fellow at the University of Tokyo with Professor Kazunori Kataoka (2006). He then completed a Postdoctoral Fellowship at MIT with Institute Professor Robert Langer and Professor Daniel G. Anderson (2008-2012). The central goal of the Siegwart Lab is to use materials chemistry to solve challenges in cancer therapy and diagnosis. An array of coding and non-coding RNAs can now be used as cancer therapeutics (siRNA, miRNA, mRNA, CRISPR RNAs) because they are able to manipulate and edit expression of the essential genes that drive cancer development and progression. Although great advances have been made in the delivery of short RNAs, the ideal chemical and formulation composition is largely unknown for longer RNA cargo. The Siegwart Lab aims to discover and define the critical physical and chemical properties of synthetic carriers required for therapeutic delivery of small (e.g. ~22 base pair miRNA) to large (e.g. ~5,000 nucleotide mRNA) RNAs. Their research is grounded in chemical design and takes advantage of the unique opportunities for collaborative research at UT Southwestern.