

## **Oligonucleotides and Nucleic Acids Interest Group Workshop**

Laixin Wang (Vice President of Bioanalytical at NovaBioassays) and  
Samuel Wainhaus (Associate Director of Bioanalytical at Alnylam Pharmaceuticals)

“Nucleic Acid-Based therapeutics: Structure Identification and Bioanalysis”

The Oligonucleotides and Nucleic Acid Interest Group meeting for ASMS 2017 was held on Wednesday, June 7 from 5:45 to 7:00pm. There were approximately 70 attendees for the session. The workshop focused on the challenges and new developments in quantitative analysis and structure identification of oligonucleotides and their metabolites in biological matrices using LC-MS/MS and/or LC-HRAM technologies. Three presenters shared recent developments from their respective laboratories or companies. Professor Michael Bartlett, Director of College of Pharmacy at The University of Georgia, discussed the pros and cons of several commonly used sample preparation techniques to extract oligonucleotides out of complex biological matrices for LC-MS analysis. Dr. Samuel Wainhaus, Associate Director of Bioanalytical Sciences at Alnylam Pharmaceuticals, described the importance and approach of structure determination of major *in vivo* metabolites of siRNA therapeutics using a case study. Dr. Laixin Wang, the Vice President of Bioanalytical at NovaBioAssays, presented the challenges and solutions of regulated bioanalysis of oligonucleotides therapeutics and biomarkers using LC-MS/MS or LC-HRAM assays. A useful, interactive discussion among the workshop attendees occurred throughout these three presentations. The workshop concluded with an open discussion on future topics and areas of challenge in the field. Chromatographic separation of large oligonucleotides ( $\geq 90$ -mer) in MS compatible LC conditions is still a big challenge.