

RSC-NAG 8th Cambridge Symposium on Nucleic Acids Chemistry and Biology

17–20 September 2024

Queen's College, Cambridge, UK



RSC INTEREST GROUP
NUCLEIC ACIDS

Programme (P – Principal Speaker, S – Short talk speaker)

Tuesday 17th September

10.00 onwards Registration

14.00 Opening and announcements

Session 1

Chair: ZOE WALLER

14.15 **JASON CHIN (P1)**

Reprogramming the Genetic Code

14.55 **KATHARINA HOEFER (S1)**

Expanding Therapeutic Horizons: The Power of RNAylation to Shape Cellular Processes

15.20 **YANJIE CHAO (S2)**

In vivo RNA-RNA interactome profiling unveils key regulatory hub and small RNA regulator of bacterial virulence

15.45 **TAE SEOK MOON (S3)**

Engineering RNA Tools to Control Individual Microbes and Microbiota without Antibiotic Resistance Genes at a Single Strain Level

16.10 **Refreshments**

16.40 **Session 2**

Chair: PHIL HOLLIGER

16.40 **JACK SZOSTAK (P2)**

Aminoacylation-enhanced ribozyme assembly

17.20 **DAVID LILLEY (S4)**

The highly sophisticated catalytic mechanism of an alkyl transferase ribozyme

17.45 **ALEX TAYLOR (P3)**

Engineering biology with a new twist: tools and technologies composed of biostable XNA analogues

18.30 **Dinner**

19.45 **Poster session 1**

with even first hour, odd second hour

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21.45 Close

Wednesday 18th September

Session 3

Chair: KATHARINA HOEFER

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08.45	SUYANG ZHANG (P4) Structural insights into co-transcriptional splicing
09.25	GUIFENG WEI (S5) N6-methyladenosine and the NEXT complex direct Xist RNA turnover and X inactivation dynamics
09.50	PENG WU (S6) RNA-protein interaction modulation via small-molecule inhibitors of RNA-binding proteins
10.15	YORGO MODIS (S7) Variants in the RNA sensor MDA5 trade antiviral activity for autoimmune protection
10.40	Refreshments
	Session 4 Chair: MICHAEL BOOTH
11.10	EDOARDO GIANNI (S8) In vitro evolution of ribozymes for self-synthesis
11.35	JOSEPH VYLE (S9) Synthesis and anticancer activity of selenium-substituted dinucleoside pyrophosphate analogues
12.00	KELLY NGUYEN (P5) Visualisation of human telomeric complexes by cryo-electron microscopy
12.40	Lunch
	Session 5 Chair: Yamuna Krishnan
14.15	MARINA RODNINA (P6) Non-canonical mRNA translation
14.55	Dilek Guneri (S10) Modulation of insulin expression is independent of G-quadruplex stability but correlates positively with i-motif stability in reporter gene assays
15.20	CHUN YIN CHAN (S11) RNA geranylating liposomes establish a membrane-associated translation system
15.45	Jonathan Price (P7) Improving the Infrastructure of RNA structure prediction <i>in vivo</i> through experiment and analysis
16.25	Refreshments
	Session 6 Chair: DAVID LILLEY
17.15	Introduction by DAVID LILLEY
17.20	The Michael J. Gait Award lecture: ADRIAN KRAINER (P8)

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Antisense Therapy for Diffuse Midline Glioma

18.30 Dinner

19.45 Poster session 2

with odd first hour, even second hour

21.45 Close

Thursday 19th September

Session 7

Chair: MARCO DI ANTONIO

08.45 YAMUNA KRISHNAN (P9)

Intracellular Electrophysiology

09.25 FILIP BOSKOVIC (S12)

Transmembrane RNAs as enzymes and channels of primordial cells

09.50 MICHAEL BOOTH (S13)

Remote-controlled nucleic acids for biology and medicine

10.15 XIWEN JIA (S14)

Potential Role of 2-Thiocyridine in Nonenzymatic RNA Replication

10.40 Refreshments

Session 8

Chair: Shankar Balasubramanian

11.10 CHUAN HE (P10)

Chromatin regulation by reversible RNA methylation

11.50 JACK HARDWICK (S15)

Uncovering a new layer of epigenetic information in double-stranded DNA

12.15 EWELINA MALECKA (S16)

How one protein accommodates two RNAs: a dynamic assembly of RNA targeting complexes in bacteria

12.40 NEV GILHOOLY (S17)

Towards direct detection of nucleic acid secondary structures during nanopore sequencing

13.05 Lunch

Session 9

Chair: JOHN KNIGHT

14.15 CLAUDIA HÖBARTNER (P11)

Molecular evolution of RNA-modifying ribozymes

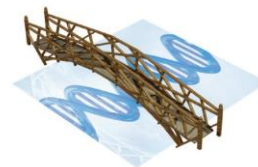
14.55 Free afternoon

19.00 Drinks reception

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19.30 Conference dinner, including
poster prizes, thanks and short speeches

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Friday 20th September

Session 10

Chair: MICHAEL GAIT

08.45 ALICE COLLINS (S18)

RNA-mediated regulation during T2 phage development in Escherichia coli

09.10 BRIONNA MCGORMAN (S19)

The Design and Development of Targeted Artificial Metallo-RNases

09.35 JULIAN TANNER (S20)

Molecular Recognition, Biosensing and Diagnostics using Nucleic Acid
Aptamers with Unusual Base Chemistries

10.00 THOMAS CARELL (P12)

The chemistry behind the second dimension of the genetic code

10.40 Refreshments

Session 11

Chair: RITWICK SAWARKAR

11.10 LUCA PELLEGRINI (P13)

Structure and function of the RAD51 monomer and filament

11.50 JONAS ROSKE (S21)

Molecular snapshots of daughter strand synthesis and proofreading by the
human leading-strand DNA polymerase Pol ϵ

12.15 AMANDA CHAPLIN (S22)

Redefining Non-Homologous End Joining DNA-repair using Cryo-electron
Microscopy

12.40 Symposium close, lunch and depart