

## ISSUE 4 SPRING 2009

Welcome to the fourth annual newsletter of the Nucleic Acids Group of the RSC. Please forward it on to anyone else who may be interested. To ensure that you receive future copies, send your name and e-mail address to Richard Bowater.

Within this newsletter we would be very happy to include discussion of topics that are relevant to scientists studying nucleic acids. If you have any information that you would like to include please send it to [r.bowater@uea.ac.uk](mailto:r.bowater@uea.ac.uk).

The main purpose of this newsletter is to provide news and information about upcoming events of interest to the Group. Several planned conferences are highlighted on pages 2 and 3 and we would especially like to draw your attention to the 5<sup>th</sup> Nucleic Acids Forum, which will be held at the University of Bristol on July 3<sup>rd</sup> - **note abstract and registration deadline of June 1<sup>st</sup> 2009**. For more details see:

<http://www.bristol.ac.uk/biochemistry/seminars/naf2009/index.html>

If you have an idea for a timely conference, please send your suggestion to one of the committee members. We are happy to take on organisational roles, but if you can suggest potential organisers this will be very helpful.

Finally, if you are not already a member of the RSC, details of how to join and the range of benefits that are available can be found at: <http://www.rsc.org/Membership/join/index.asp>

### **David Hutchinson Memorial Bursaries**

The Nucleic Acids Group has access to some funds that can be used to support attendance at meetings. For example, the David Hutchinson Memorial Bursaries are available for UK-based students to attend NAG supported meetings (eg. 5<sup>th</sup> Nucleic Acids Forum etc). Applications should be made to Mike Gait ([mgait@mrc-lmb.cam.ac.uk](mailto:mgait@mrc-lmb.cam.ac.uk)). Further details are available on the Group's web-site:

<http://www.rsc.org/Membership/Networking/InterestGroups/NucleicAcids/Awards.asp>

### **Committee member details**

Activities of the Nucleic Acids Group are organised by a committee organised following RSC guidelines. The current membership of the committee is:

**David Lilley (Chair), University of Dundee ([d.m.j.lilley@dundee.ac.uk](mailto:d.m.j.lilley@dundee.ac.uk))**

**Mike Gait (Immediate Past Chair), MRC LMB, Cambridge ([mgait@mrc-lmb.cam.ac.uk](mailto:mgait@mrc-lmb.cam.ac.uk))**

**Rick Cosstick (Treasurer), University of Liverpool ([rcosstic@liverpool.ac.uk](mailto:rcosstic@liverpool.ac.uk))**

**Richard Bowater (Secretary), University of East Anglia ([r.bowater@uea.ac.uk](mailto:r.bowater@uea.ac.uk))**

**Mark Dillingham, University of Bristol**

**Duncan Graham, University of Strathclyde**

**Jane Grasby, University of Sheffield**

**Steve Halford, University of Bristol**

**Penny Jeggo, MRC Genome Damage & Stability Centre, University of Sussex**

**Jason Micklefield, University of Manchester**

**Mark Searcey, University of East Anglia**

**Chris Smith, University of Cambridge**



## FORTHCOMING MEETINGS

The following meetings have direct links with **RSC Nucleic Acids Group**

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### **July 3<sup>rd</sup> 2009**

#### **5<sup>th</sup> Nucleic Acids Forum** (Organised by the RSC Nucleic Acids Group)

School of Chemistry, University of Bristol.

The Forum is sponsored by Link Technologies and ATDBio.

This annual one-day Forum provides an opportunity for chemists and biochemists to showcase their work on nucleic acids and to network. The meeting is for all researchers, but is aimed particularly at new academic staff, post-doctoral workers and PhD students. The meeting is intended to function as a forum of discussion. Talks will be short (15 minutes) and will be selected from submitted abstracts. Those wishing to attend and give a presentation (oral or poster) are invited to submit a short abstract (<1 page of A4) by June 1<sup>st</sup> 2009. The Organising Committee will construct a programme from the submitted abstracts and inform speakers by mid June 2009. Further details about preparing talks and posters will be sent to all attendees once the registration date has passed.

**Registration:** by June 1<sup>st</sup> 2009 by completing the form at the Forum web page - see below.

**Costs:** To cover some costs of the meeting, including tea/coffee and a light lunch, the registration fee is: £5 for members of the RSC Nucleic Acids Group and £10 for non-members. Cheques should be made payable to "The Nucleic Acids Group" and sent to the address on the registration form. With permission, arrangements can be made to pay on the day of the meeting.

**For more details and abstract submission:** visit the web site at:

<http://www.bristol.ac.uk/biochemistry/seminars/naf2009/index.html>

Further information can be obtained from Mark Dillingham ([Mark.Dillingham@bristol.ac.uk](mailto:Mark.Dillingham@bristol.ac.uk)) or Richard Bowater ([r.bowater@uea.ac.uk](mailto:r.bowater@uea.ac.uk))

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### **September 7<sup>th</sup>-8<sup>th</sup> 2009**

#### **Nucleic Acids at the Chemistry-Biology Interface**

Manchester Interdisciplinary Biocentre, The University of Manchester, Manchester, UK.

Organisers: Jason Micklefield, Mike Gait, Rick Cosstick & Sabine Flitsch.

This conference is sponsored by Integrated DNA Technologies and Link Technologies, as well as the RSC and IS3NA.

The meeting programme will be organised by the following 5 themes: *Oligonucleotide control of gene expression, RNA interference, Small molecule-nucleic acid interaction, Catalytic and regulatory RNA and Novel applications.*

Invitation is given for submission of abstracts for selection of a number of standard talks (15 min + 5 min questions). Selection will be made by the Organising Committee based on those presenting new and exciting scientific data in one of the Symposium main topics.

Deadline for submission of abstracts for short talks: **April 30<sup>th</sup> 2009**

Posters are open to the general area of the interface between nucleic acids chemistry and biology. All appropriate abstracts will be accepted. Deadline for submission of abstracts for posters: **July 15<sup>th</sup> 2009**

Reduced fees to attend the conference will be available to those who register by **June 12<sup>th</sup> 2009**. Further details are available at: <http://na-cbi2009.org/index.php>



## OTHER MEETINGS

Forthcoming events of interest to members of the Nucleic Acids Group

### 2009

#### **July 6<sup>th</sup>-8<sup>th</sup> 2009**

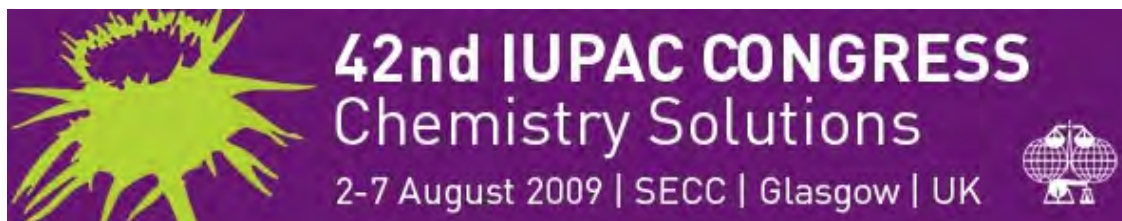
**BACR / EACR Symposia: Chromatin and Cancer**, University of Cambridge, Cambridge.

This conference will explore how chromatin influences DNA metabolic events, such as replication, repair and transcription, with a view to understanding how chromatin and its modulation contribute to genetic stability and the prevention of cancer.

Includes the 11<sup>th</sup> Nucleic Acids Award Lecture to be given by Susan Gasser (see page 4).

Registration details and more information available at:

<http://bacr.org.uk/civicrm/event/info?reset=1&id=1>



#### **August 3<sup>rd</sup>-7<sup>th</sup> 2009**

**42<sup>nd</sup> IUPAC Congress**, SECC, Glasgow, UK.

The programme has 7 themes that cover all aspects of the chemical sciences and interfaces with other scientific disciplines. There are >50 symposia, and those that are directly relevant to nucleic acids include:

**“Chemistry for Solving Biological Problems”**

**“DNA-based Electrochemical Devices and Biosensors”**

**“Heterocyclic Chemistry: Synthesis, Chemical Biology & Drug Discovery”**

Abstracts for poster presentations should be submitted by June 5<sup>th</sup> 2009. Register to attend the conference by that date and receive a £50 discount on the booking fee. The standard deadline for registration is July 3<sup>rd</sup> 2009.

Registration and submission of abstract takes place online at:

<http://www.rsc.org/ConferencesAndEvents/RSCConferences/IUPAC2009/index.asp>

### 2010

**September 12<sup>th</sup>-16<sup>th</sup> 2010. NACON VIII**, University of Sheffield, Sheffield, UK

Following earlier successful NACON meetings, the themes of the Conference will be devoted to interactions between: Nucleic Acids-Nucleic Acids; Small molecules-Nucleic Acids; DNA-Proteins; RNA-Proteins.

The Meeting will include more than twenty internationally renowned invited speakers. In addition, the organisers are eager for abstracts to be submitted for inclusion in the programme as either short (20 minute) talks or poster presentations.

For more details see: <http://www.nacon.group.shef.ac.uk/>



### *The Nucleic Acids Award Lectures*

The Nucleic Acids Group bestows a prestigious award on an annual basis. The Nucleic Acids Award Lecture has a stellar list of previous recipients (see table below), highlighting the hugely significant research that is being undertaken within this field. The Award Lecture was initially developed from funds collected by the NAG following the death of Richard Walker, who was a founder of the NAG. For the past few years it has been sponsored by Merck & Co. Awardees receive an inscribed plate and deliver an Awards Lecture at a relevant conference taking place in the UK in the year of the award.

The most recent Nucleic Acids Award Lecture – the 10<sup>th</sup> – was given by Dr Martin Gellert (NIH, Bethesda, USA) in July 2008 at TOPO 2008 – see report below. The 11<sup>th</sup> Nucleic Acids Award Lecture will be given by Prof Susan Gasser (Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland) at the BACR/EACR Symposium on Chromatin and Cancer, which will be held at Churchill College, Cambridge, UK, from 6 - 8 July 2009. Current plans are that the 12<sup>th</sup> Nucleic Acids Award Lecture will be delivered as part of NACON VIII at the University of Sheffield in September 2010; if you would like to nominate anyone for this award, please send your suggestions to David Lilley or Mike Gait.

### *Recipients of the Nucleic Acids Award*

1 <sup>st</sup> Award Lecture	Marvin Caruthers (University of Colorado, USA)	April 1998
2 <sup>nd</sup> Award Lecture	Dieter Söll (Yale University, USA)	April 2000
3 <sup>rd</sup> Award Lecture	Paul Schimmel (Scripps Institute, USA)	April 2001
4 <sup>th</sup> Award Lecture	Olke Uhlenbeck (University of Colorado, USA)	Aug 2002
5 <sup>th</sup> Award Lecture	Stephen Benkovic (Penn State University, USA)	Sept 2003
6 <sup>th</sup> Award Lecture	Tom Steitz (Yale University, USA)	April 2004
7 <sup>th</sup> Award Lecture	Greg Verdine (Harvard University, USA)	Sept 2005
8 <sup>th</sup> Award Lecture	Ignacio Tinoco (UC Berkeley, USA)	March 2006
9 <sup>th</sup> Award Lecture	Jennifer Doudna (UC Berkeley, USA)	April 2007
10 <sup>th</sup> Award Lecture	Martin Gellert (NIH, Bethesda, USA)	July 2008
11 <sup>th</sup> Award Lecture	Susan Gasser (FMI, Basel, Switzerland)	to be given July 2009

### *Nucleic Acid Award Lecture for 2008: Dr Martin Gellert*

The recipient of the 2008 Nucleic Acids Award Lecture was Dr Martin Gellert, from the National Institutes of Health, USA. The award was presented during Topo2008: DNA Topoisomerases in Biology and Medicine, a meeting organised by Tony Maxwell and Andy Bates and held in July 2008 at the John Innes Centre, Norwich, UK. Marty has had an extremely distinguished research career devoted to DNA enzymes. He was one of the co-discoverers of DNA ligase in the 60s, his group identified and characterised the bacterial type II topoisomerase DNA gyrase, the enzyme that supercoils DNA, in the 70s, and was the first to reconstitute immunoglobulin VDJ gene recombination *in vitro* in the 90s.



At TOPO 2008, Marty gave the 2008 Nucleic Acids Award Lecture, "The Twists and Turns of DNA Gyrase", in which he described the history of the discovery of gyrase and subsequent developments in the topoisomerase field. The photograph shows presentation of the award to Marty (left-right): Mike Gait, Marty Gellert, Andy Bates and Tony Maxwell.



## RSC Books

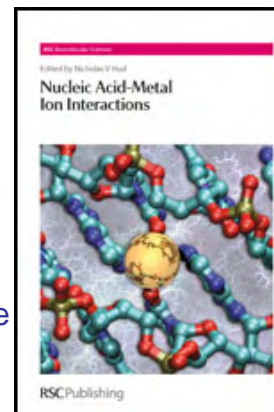
Discounts on RSC book purchases are available for RSC members

### *Nucleic Acid-Metal Ion Interactions*

Edited by Nicholas V. Hud, published 2008. Full price £89.95. This book reviews experimental studies that define our current understanding of nucleic acid-metal ion interactions, with a particular emphasis being placed on experimental biophysical studies. In addition to being a review of the literature, original material and fresh perspectives on published results are also presented. The book is sufficiently detailed to serve as a reference source for researchers active in the field of nucleic acids biophysics and molecular biology.

Orders can be placed at the book's web address:

<http://www.rsc.org/shop/books/2008/9780854041954.asp>



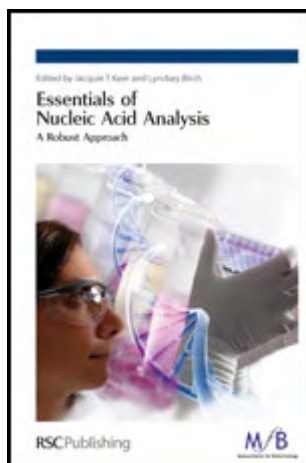
### *Essentials of Nucleic Acid Analysis: A Robust Approach*

Edited by Jacquie T Keer & Lyndsey Birch, published 2008. Full price £79.95.

Setting out as a guide through the steps needed to obtain good quality results in DNA analysis, the principles for ensuring valid analytical measurement are detailed. The authors of each chapter are practitioners of DNA analysis in areas where the quality of the result is critical. Technical details of application of key techniques in nucleic acid analysis are provided while highlighting best practice, available standards and practical advice on improving measurement quality.

Orders can be placed at the book's web address:

<http://www.rsc.org/shop/books/2008/9780854043675.asp>



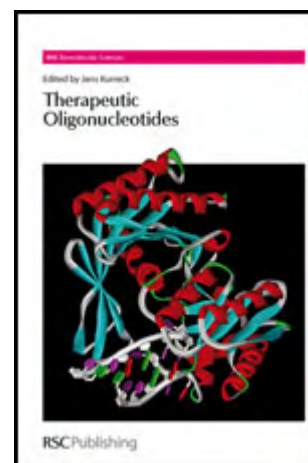
### *Therapeutic Oligonucleotides*

Edited by Jens Kurreck, published 2008. Full price £89.00.

This book provides an overview of the development of oligonucleotides for therapeutic applications, touching on a number of additional oligonucleotides including a number of small interfering RNAs currently in various phases of clinical development. Written by leading scientists from both academia and industry, the authors update on current status of RNA interference with emphasis on: antisense oligonucleotides, ribozymes, siRNAs, decoy oligonucleotides and aptamers.

Orders can be placed at the book's web address:

<http://www.rsc.org/shop/books/2008/9780854041169.asp>



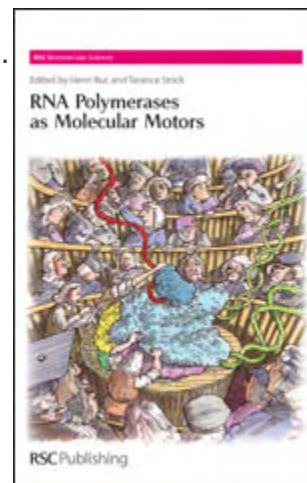
RSC books continued on next page



**RSC Books...continued**  
Discounts on RSC book purchases are available for RSC members

## ***RNA Polymerases as Molecular Motors***

Edited by Henri Buc & Terence Strick, published 2009. Full price £95.00. To observe cellular proteins in action, researchers have developed entirely new methodologies for the detection and the nanomanipulation of single molecules. This book analyses how diverse research fields involving cell biology, genetics, enzymology and structural biology interact on a specific example - RNA polymerase. The book concentrates on RNA polymerases because they play a central role in the cell and are the target of a wide range of regulatory mechanisms. They have also been the subject of spectacular advances in their structural understanding in recent years, as testified by the attribution of the Nobel prize in chemistry in 2006 to Roger Kornberg (see below). Orders can be placed at the book's web address:  
<http://www.rsc.org/shop/books/2009/9780854041343.asp>



## ***RSC Honorary Fellowship to Prof. Roger Kornberg***

A symposium was held on Wednesday 26 November 2008 to confer an RSC Honorary Fellowship on Roger Kornberg, Professor of structural biology at Stanford University School of Medicine. Professor Kornberg (born 1947) was awarded the Nobel Prize in Chemistry in 2006 "for his studies of the molecular basis of eukaryotic transcription", which is the core process by which the genetic information from DNA is copied to RNA. The symposium took place at the MRC Laboratory of Molecular Biology (LMB) in Cambridge, UK. Between 1972 and 1976, Prof. Kornberg carried out post-doctoral research at the Laboratory and so this was a fitting venue for such a celebration. The half day symposium was attended by 190 delegates, who heard lectures by Prof. David Lilley (University of Dundee), Prof. Hagan Bayley (University of Oxford) and Prof. Sir Aaron



Klug (MRC LMB), who worked with Prof. Kornberg during his time at the LMB. Following a lecture by Prof. Kornberg, Prof. Dave Garner (RSC President) presented the Honorary Fellowship to Prof. Kornberg. The photograph on the left was taken after the Symposium and shows (left-right): Hugh Pelham (Chair of Symposium), David Lilley, Aaron Klug, Dave Garner (RSC President), Roger Kornberg and Hagan Bayley.