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# ibdg

newsletter

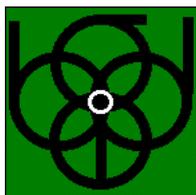
Inorganic Biochemistry Discussion Group

affiliated to:

The Royal Society of Chemistry (Dalton Division) & The British Biophysical Society

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## Message from the Chair

Welcome to this issue of the IBDG newsletter. I'd like to take this opportunity to recommend our January 2007 meeting to you. In contrast to recent years we have taken the opportunity to return to more medical aspects of inorganic biochemistry. The meeting, held in collaboration with the European Iron Club and SPRING (Special Parkinson's Research Interest Group), is entitled "**Mechanisms of Iron-Induced Neurodegeneration: A Focus on Parkinson's Disease**". The generous financial support provided by SPRING has allowed us to invite more international speakers than usual without significantly raising the registration fee for our annual meeting. Further details of the programme can be found on p. 4 and I think you will agree there is an exciting program on offer even if you are only able to attend one day. Many of the talks cover a wide range of basic and applied areas, so that even if you and your students are not focused on Parkinson's Disease you should get a lot out of the meeting. I am pleased to announce that **IBDG will be offering bursaries to students that attend** (up to a maximum of 20 on a first-come first-served basis). At present these bursaries will be £60 to cover registration and the conference dinner, although this could be revised upwards if we receive a RSC travel award. Please contact David Evans (IBDG Treasurer) to apply for a bursary ([dave.evans@bbsrc.ac.uk](mailto:dave.evans@bbsrc.ac.uk)). Hopefully the success of this meeting will enable us to stage similar collaborations in the future. So I look forward to seeing many of you at Imperial College on January 5 and 6! Our AGM will also be held during day 1 of the meeting.

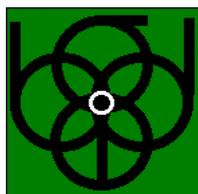
One of the highlights of the meeting will be the talk by Dr Judy Hirst (MRC Cambridge, UK) on Complex I "radical" reactivity. Judy won the IBDG Young Investigators Prize in 2006 and this is her award lecture. This reminds me that we would like everyone to start thinking of potential award recipients for 2008 and encourage them to apply. We hope to have as strong a field to choose from as in 2006. We provide details of the award later in the newsletter (the deadline is Dec 1, 2007).

I also have news about a significant new affiliation for IBDG. The Biochemical Society has agreed for IBDG to be recognized as a Biochemical Society "IT-supported Group". See [www.biochemistry.org/themes/itgroups/](http://www.biochemistry.org/themes/itgroups/) for details of what this means. This status puts IBDG on the same footing in the Biochemical Society as two other RSC subject groups – the Nucleic Acids Group and the Protein and Peptide Science Group. Essentially it provides us with access to the Biochemical Society's web pages for our publicity. It will also make it easier for us to propose Biochemical Society meetings on topics in our area of interest, thus potentially accessing a new source of funding for meetings. Now, in addition to being a Royal Society of Chemistry subject group, IBDG is affiliated to the Biophysical Society and the Biochemical Society – illustrating how interdisciplinary our work is. For up-to-date news on all our activities don't forget to check our web pages:- **[www.ibdg.org.uk](http://www.ibdg.org.uk)**

On a personal note this will be my last newsletter as Chair, before handing over to John Reglinski in the New Year. May I take this opportunity to thank all the officers and other members of the committee for making my job so easy and wish John the best of luck in the future.

Happy Christmas and best wishes for the New Year

**Chris Cooper (Chair IBDG) [ccooper@essex.ac.uk](mailto:ccooper@essex.ac.uk)**



## **The IBDG Young Investigator's Award - 2008**

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The Inorganic Biochemistry Discussion Group Young Investigator's Award is designed to highlight and promote the next generation of outstanding UK-based inorganic biochemists. The award is made every two years for outstanding contributions to any area of biological inorganic chemistry or inorganic biochemistry.

IBDG is therefore seeking nominations for the 2008 award. The award winner will receive a prize of £500 and present a lecture at an IBDG sponsored meeting in the following year; IBDG will pay travel and on-site costs at this meeting.

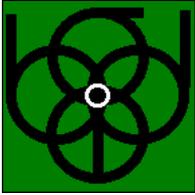
To be eligible for the award nominees must:

- normally be under the age of 35 on the 1st January 2008, although appropriate allowances will be made for career breaks
- be currently employed in the UK

Nominations for the IBDG Young Investigator's Award must be made electronically by the nominee to John Reglinski ([j.reglinski@strath.ac.uk](mailto:j.reglinski@strath.ac.uk)) and should include:

- a letter from the nominee which summarises their principal achievements in inorganic biochemistry or biological inorganic chemistry and which includes the names of two referees
- the nominee's current CV and list of publications, highlighting the 5 most significant
- the nominee is also responsible for arranging for electronic supporting letters from the two referees (to be e-mailed separately to John Reglinski) describing the area of work undertaken and highlighting the nominee's achievements in inorganic biochemistry or biological inorganic chemistry.

Nominations for the 2008 Award will close on December 1, 2007.



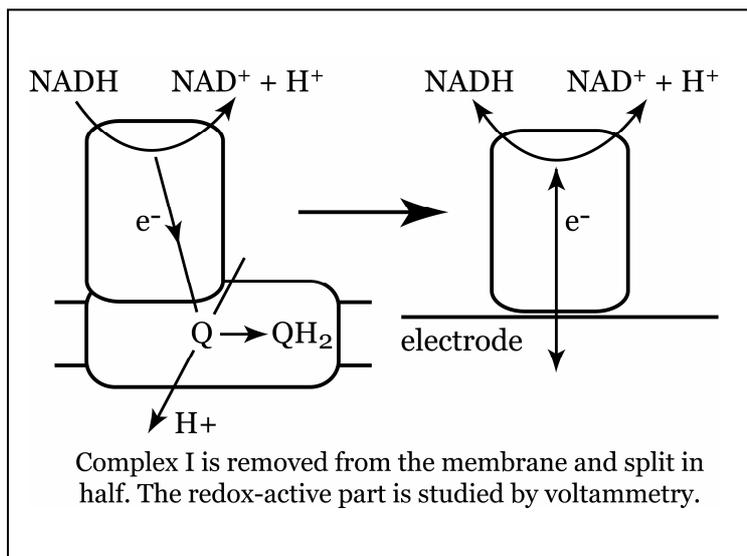
## IBDG Young Investigator's Award Winners - 2006

IBDG's inaugural Young Investigator's Award was shared by Dr Judy Hirst (MRC, Cambridge) and Dr Vasily Oganessian (UEA, Norwich).

Vasily's award was recognised at the 39<sup>th</sup> Annual ESR International Meeting held in Edinburgh earlier this year and a profile of his research featured in the July 2006 newsletter. Judy is a Research Group Leader at The Medical Research Council Dunn Human Nutrition Unit in Cambridge. Prior to this her D. Phil. studies involved voltammetric analyses of Fe-S proteins with Fraser Armstrong at Oxford University and post-doctoral studies of hemeperoxidases with David Goodin at The Scripps Research Institute in California. This training led Judy to develop an inter-disciplinary approach to her current research, which focuses on understanding mechanisms of energy transduction in the multi-centred, membrane-bound redox enzymes of the respiratory electron transport chain in mitochondria.

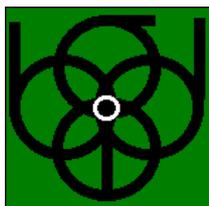


Judy's Young Investigator's Award recognises her contributions to the development of voltammetric methods for studying redox active centres in proteins. The approach, protein-film voltammetry, involves adsorbing a protein (or enzyme) onto an electrode surface in such a way that the electrode assumes the role of the protein's physiological redox partner. Integrating the electrode with appropriate electrical circuitry then allows electron flow in, out, and through the protein or enzyme to be quantified. The method is incredibly sensitive (typical experiments employ less than a picomole of protein) and versatile - simply changing the electrode environment allows a wide range of factors which influence the redox reaction to be investigated.



Of particular note are Judy's studies of mitochondrial complex I (NADH-ubiquinone oxidoreductase). This enzyme is the first enzyme of the respiratory electron transfer chain. It couples NADH oxidation to ubiquinone reduction in order to pump protons across the inner mitochondrial membrane, and employs eight Fe-S clusters and one flavin in the process. Most recently, Judy's group has shown that superoxide is produced by the reduced flavin cofactor in complex I. Complex I is a major source of reactive oxygen species in the cell, and is linked to neurodegenerative

and muscular diseases and ageing. There will be an opportunity to hear more about this work when Judy presents her award lecture at IBDG's January 2007 meeting.



## January 2007 Meeting

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### **Mechanisms of Iron-Induced Neurodegeneration: A Focus on Parkinson's Disease**

5 - 6 January 2007, Imperial College London, UK

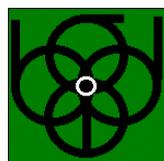
The annual Inorganic Biochemistry Discussion Group meeting will be held at Imperial College London on 5<sup>th</sup> and 6<sup>th</sup> January 2007. The meeting will focus on the role of iron in neurodegeneration and Parkinson's Disease and it reflects a joint initiative between IBDG and the Special Parkinson's Research Interest Group (SPRING), a charity run largely by sufferers of Parkinson's Disease. This is the first time that IBDG has held a joint conference with a group that directly benefits from our researches. The programme includes talks on the chemical basis of iron metabolism, the roles of iron containing enzymes in neurodegenerative disease and the development of new therapeutic iron chelating compounds. Our speakers include:

Dr Judy Hirst (IBDG Young Investigator Award Winner)  
Professor Avi Shanzer  
Professor John Porter  
Professor HM Schipper  
Professor Mike Wilson  
Professor Bob Crichton  
Professor Jim Connor  
Dr David Dexter  
Professor Tracey Rouault  
Professor Peter Jenner  
Professor M. Youdhim

This meeting provides an excellent opportunity for inorganic biochemists and medical researchers to discuss a key medical issue in which the understanding of the underlying biological inorganic chemistry ultimately contributes to the development of potential new therapies for Parkinson's Disease.

**Details of the meeting, including the scientific programme and registration details, may be found on the IBDG website, [www.ibdg.org.uk](http://www.ibdg.org.uk).**

**Dr Jon McMaster (Meetings Secretary )**



## IBDG Committee

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**Chair:** Prof Chris Cooper, Department of Biological Sciences, University of Essex.  
**Vice-Chair:** Dr John Reglinski, The Department of Pure and Applied Chemistry, University of Strathclyde. **Secretary:** Dr Julea Butt (Biophysical Society Representative), School of Chemical Sciences and Pharmacy, University of East Anglia, Norwich. **Meetings Secretary:** Dr Jon McMaster, School of Chemistry, University of Nottingham. **Treasurer:** Dr Dave Evans, Biological Chemistry Department, John Innes Centre Norwich. Dr Kate Brown, Imperial College, London. Dr Rob Evans, King's College, London. Prof. Emma Raven, University of Leicester. Dr John Viles (Queen Mary, London). Newsletter Edited by Julea Butt (j.butt@uea.ac.uk).