出國報告（出國類別：國際會議）

參加第七屆亞洲生物無機化學研討會(7th Asian Biological Inorganic Chemistry Conference，AsBIC7)

服務機關：科技部自然科學及永續研究發展司
姓名職稱：高世平研究員
派赴國家：澳大利亞，黃金海岸
出國期間：103 年 12 月 01 日至 103 年 12 月 05 日
報告日期：103 年 12 月 30 日

第七屆亞洲生物無機化學研討會報告

1. 出國目的

亞洲生物無機化學會議是一個提供研究化學與生物相關領域的研究學者互相討論分享的大型研討會，藉由參加該項會議進一步了解國際上無機與生物化學間跨領域之最新發展趨勢，以利規劃推展國內跨領域業務。

2. 會議議程

詳如附件

3. 心得

第七屆亞洲生物無機化學研討會於澳洲舉行，與會者來自於 23 個國家。雖然每個國家之研究取向有所不同，但都強調在無機金屬化合物在醫藥上之應用、診斷用影像探針、MRI 之應用、金屬離子之傳遞、金屬離子於神經退化之疾病、生物材料、金屬蛋白質結構與功能、光譜分析、小分子催化及生化擬態化合物在能源上之應用等。如 Dr. Double 及 Dr. Jones 之演講所敘述 Cu^{+}/Cu^{2+}金屬離子在神經退化與腦神經退化所扮演之角色。Dr. Che 之研究說明金屬化合物在抗腫瘤方面之進展。Dr. Sherry 說明 MRI 於過去在醫學檢測上之應用及未來可能在對人體重要 Zn(II)離子之影像檢測，而 Dr. Hambley 在設計以金屬為主之抗癌藥物上已能接上目標靶，在此方面頗有進展。Dr. Kamiya 對於產生氧

(oxygen-evolving photosystem II) 之蛋白質結構中之 [MnCa] 活化中心結構已有更進一步之了解。同時，Dr. Pace 利用 ^{55}Mn ENDOR 之技術對 photosystem II 之電子結構已證實。Dr. Nam 探討小分子 O_2 之催化，對金屬化合物催化 O_2 所形成之各種鍵結形式做一整理與回顧。Cis-platin 在抗癌上之應用持續受到很多研究群在這方面之努力，成果亦逐漸顯現出來，如 Dr. Guo、Dr. Zou。在小分子 CO_2 活化轉換成 formic acid 上，Dr. Amao 之研究有些進展。Dr. Fuzukami 說明其研究群在 O_2 轉換成 H_2O_2 及其後續轉換成 H_2 與 O_2 之最新發展。Dr. Kitagawa 在利用 Resonance Raman 光譜證實 O_2 鍵結到金屬上之鍵結方式有些進展。[Ni-Fe] Hydrogenase 仍受到研究群 Dr. Zamble 之關注，不只是探討其電子轉移與氫分子之活化，同時更探討其應用到產氫之技術及探討生物合成方面。可以理解到各國研究單位在這些領域之投資，我科技部過去幾年來也相當鼓勵在這些方面之研究，並獲得一些成果，符合科技部推動學術與促進提升產業發展之目標。韓國在此方面有作一整體性之規劃，其性質類似我國，針對上述特殊領域擇一至三特殊研究領域發展，有別於日本或中國大陸企圖作全面性的發展。在上述這些研究領域，亞洲國家中以日本、韓國與我國較為領先。然而中國大陸挾大量之研究人員與經費之優勢，相

信將後來居上。我國往後發展方向宜著重在目前佔優勢且有產業應用之領域。亞洲生物無機協會之組成，我國為創始會員國之一，占有一定之地位。我國已舉辦過第五屆亞洲生物無機化學研討會，期望將來有機會再爭取在台舉辦之機會。科技部往後宜繼續培養優秀年青一輩接棒，年青一輩之研究學者相當團結且相互合作研究，相信日後我國在生物無機領域之研究定能更上一層樓。

Program Overview

SUNDAY, November 30

11.30 am	Registration (registration desk)					
			Workshop - High Resolution Multifrequency EPR and its Applications in Biology			
			Room: Kauri/Cypress			
1.00 - 1.10 pm			Welcome			
1.10 - 2.00 pm			Daniella Goldfarb			
2.00 - 2.30 pm			Jeffrey Harmer			
2.30 - 3.00 pm			Graeme Hanson			
3.00 - 3.30 pm			Afternoon Tea			
3.30 - 4.00 pm			Peter Lay			
4.00 - 4.30 pm			José Moura			
4.30 - 4.35 pm			Closing Remarks			
5.00 - 6.00 pm	Room: Norfolk	Opening Ceremony				
6.00 - 7.00 pm	PL1	Room: Norfolk	**Wolfgang Lubitz**			
7.00 pm -	Room: Cristels Room	Welcome Reception				

MONDAY, December 1

8.30 - 9.30 am	PL2	Room: Norfolk	**Peter Sadler**			
	Room: Phoenix		Room: Norfolk		Room: Kauri/Cypress	
	Metal Ion Transport and Homeostasis		**Metals in Medicine**		**Imaging - Synchrotron and Other Techniques**	
9.30 - 10.00 am	KL1	**Deborah Zamble**	KL2	**Chi-Ming Che**	IL6	Martin de Jonge
10.00 - 10.30 am	IL1	Gawain McColl	IL4	Xiaoda Yang	KL3	**Peter Lay**
10.30 - 11.00 am			Morning Tea			
11.00 - 11.30 am	IL2	Christopher McDevitt	OP3	Muhammad Hanif	IL7	Hugh Harris
11.30 - 12.00 am	IL3	Xuesong Sun	IL5	Christian Hartinger	IL8	Dirk-Peter Herten
12.00 - 12.20 pm	OP1	Karrera Djoko	OP4	Philip Andrews	OP6	Aviva Levina
12.20 - 12.40 pm	OP2	Xiaoyong Wang	OP5	Xiaoming Liu	OP7	Carolyn Dillon
12.40 - 2.00 pm			Lunch (Relish Restaurant)			
2.00 - 3.00 pm	PL3	Room: Norfolk	**Lucia Banci**			
	Room: Norfolk		Room: Phoenix		Room: Kauri/Cypress	
	Diversity of Metalloenzymes in Nature		**Metals in Neurodegenerative Diseases**		**Imaging - MRI**	
3.00 - 3.30 pm	IL9	Teizo Kitagawa	KL4	**Mi Hee Lim**	KL6	**Kishore Bhakoo**
3.30 - 4.00 pm	IL10	Luke Guddat	IL11	Kevin Barnham	IL14	Yun-Ming Wang
4.00 - 4.20 pm	OP8	Magdalena Rowińska-Żyrek	OP13	Xiubo Du	OP15	Jacek Kolanowski
4.20 - 4.50 pm			Afternoon Tea			
4.50 - 5.20 pm	OP9	Jeffrey Harmer	KL5	**James Camakaris**	IL15	Kazuya Kikuchi
5.20 - 5.50 pm	OP10	Nobutaka Fujieda	IL12	Kay Double	IL16	Matthew Allen
5.50 - 6.20 pm	OP11	Yoshiaki Furukawa	IL13	Anthony White	IL17	Markus Barth
6.20 - 6.40 pm	OP12	Yin-Cheng Hsieh	OP14	Christopher Jones	OP16	Karina Pombo Garcia
7.00 pm -	Dinner Cruise (optional activity)					

TUESDAY, December 2

8.00 - 8.30 am	ECR1	Room: Norfolk	**Filip Kielar**			
8.30 - 9.30 am	PL4 Room: Norfolk		**Anthony Wedd**			
	Room: Norfolk		Room: Kauri/Cypress		Room: Phoenix	
	Copper Transport and Homeostasis		**Metals in Medicine - Biomolecular interactions**		**Bioinspired Active Site Model Complexes**	
9.30 - 10.00 am	KL7	**David Giedroc**	OP50	Eduardo Sousa	IL25	Jaeheung Cho
10.00 - 10.30 am	IL18	Sharon La Fontaine	IL22	Guangyu Zhu	OP21	Way-Zen Lee
10.30 - 11.00 am			Morning Tea			
11.00 - 11.30 am	IL19	Peng Chen	IL23	Janice Aldrich-Wright	KL8	**Shinobu Itoh**
11.30 - 12.00 am	IL20	Aixin Yan	IL24	Zong-Wan Mao	IL26	Masahito Kodera
12.00 - 12.20 pm	OP17	Zhiguang Xiao	OP19	Daniela Donghi	OP22	Steve Colbran
12.20 - 12.40 pm	OP18	Shu-Pao Wu	OP20	Zhen-Feng Chen	OP23	Hideki Sugimoto
12.40 - 2.00 pm			Lunch (Relish Restaurant)			
2.00 - 3.00 pm	PL5	Room: Norfolk	**Jiangyun Wang**			
	Room: Norfolk		Room: Phoenix		Room: Kauri/Cypress	
	Bionanomaterials		**Imaging - PET**		**Spectroscopy & Computational Chemistry**	
3.00 - 3.30 pm	IL27	Takafumi Ueno	KL10	**Paul Donnelly**	KL11	**Peter Comba**
3.30 - 4.00 pm	IL28	Ruikang Tang	IL29	Holger Stephan	IL30	Guy Jameson
4.00 - 4.30 pm	KL9	**Lei Jiang**	OP24	Peter Barnard	IL31	Gopalan Rajaraman
4.30 - 6.30 pm	Afternoon Tea and Poster Session (in rooms Monaco I, Monaco II and Cristels, located in the walkway to the Gold Tower). EVEN numbered Posters 4.30 - 5.30 pm, ODD numbered Posters 5.30 - 6.30 pm					
7.00 pm -	Outback Spectacular Experience (optional activity)					

Program Overview

WEDNESDAY, December 3

8.00 - 9.00 am	PL6	Room: Norfolk	**Greg Anderson**			
	Room: Phoenix		Room: Norfolk		Room: Kauri/Cypress	
	Metalloenzymes and Metallomics		**Iron in Physiology and Disease**		**Native and Modified Enzyme Catalysis**	
9.00 - 9.30 am	KL12	**Hongzhe Sun**	IL35	Debbie Trinder	IL38	David Ollis
9.30 - 10.00 am	IL32	José Moura	IL36	David Frazer	IL39	Takashi Hayashi
10.00 - 10.30 am	Morning Tea					
10.30 - 11.00 am	IL33	Paul Bernhardt	OP27	Danuta Kalinowski	IL40	Steve S.-F Yu,
11.00 - 11.30 am	IL34	Megan Maher	IL37	Fudi Wang	OP30	Takahiko Kojima
11.30 - 11.50 am	OP25	Ulrike Kappler	OP28	Junxia Min	OP31	Trevor Rapson
11.50 - 12.10 pm	OP26	Blaine Roberts	OP29	Angelica Merlot	OP32	Yutaka Amao
12.10 - 1.00 pm	Lunch (Relish Restaurant)					
1.00 - 5.30 pm	Conference Tours (optional activity: Lamington National Park / Sea World half day tour / Movie World half day experience, meet in Hotel lobby)					
5.30 pm -	Four Winds 360 Revolving Resturant (optional activity)					

THURSDAY, December 4

8.30 - 9.30 am	OAA1	Room: Norfolk	**Wonwoo Nam**			
9.30 - 10.30 am	Room: Norfolk		Poster Slam Presentations			
10.30 - 11.00 am	Morning Tea					
	Room: Norfolk		Room: Cypress		Room: Kauri	
	Zinc in Physiology and Disease		**Metals in Medicine**		**Spectroscopy & Computational Chemistry**	
11.00 - 11.30 am	IL41	Taiho Kambe	IL42	Akhil Chakravarty	IL44	Manho Lim
11.30 - 12.00 am	OP33	Alastair McEwan	IL43	Dennis Ng	OP38	Azaj Ansari
12.00 - 12.20 pm	OP34	Weijiang He	OP36	Tanmaya Joshi	OP39	Bim Graham
12.20 - 12.40 pm	OP35	Sally-Ann Poulsen	OP37	Alexey Nazarov	OP40	Thomas Carruthers
	Room: Phoenix					
	Imaging - multiple modalities					
11.00 - 11.30 am	KL13	**Zijian Guo**				
11.30 - 12.00 am	OP41	Youngmin You				
12.00 - 12.20 pm	OP42	Ashis Patra				
12.20 - 12.40 pm	OP43	Taotao Zou				
12.40 - 2.00 pm	Lunch (Relish Restaurant)					
2.00 - 3.00 pm	PL7	Room : Norfolk	**Vivian Wing-Wah Yam**			
	Room: Norfolk		Room: Phoenix		Room: Kauri	
	Mn Metalloenzymes		**Metals in Medicine - Nanomedicine**		**Bioinspired Active Site Model Complexes**	
3.00 - 3.30 pm	KL14	**Nobuo Kamiya**	IL47	Luisa De Cola	IL49	Sankar Rath
3.30 - 4.00 pm	IL45	Ron Pace	IL48	Bengang Xing	IL50	Chen-Hsiung Hung
4.00 - 4.30 pm	IL46	Geoffrey Jameson	OP44	Kristof Zarschler	OP45	Yunho Lee
	Room: Cypress					
	Molecular Imaging					
3.00 - 3.30 pm	IL51	David Churchill				
3.30 - 4.00 pm	OP46	Max Massi				
4.00 - 4.30 pm	OP47	Akio Ojida				
4.30 - 6.30 pm	Afternoon Tea and Poster Session (in rooms Monaco I, Monaco II and Cristels, located in the walkway to the Gold Tower). ODD numbered Posters 4.30 - 5.30 pm, EVEN numbered Posters 5.30 - 6.30 pm					
7.00 - 11.30 pm	Gala Conference Dinner					

FRIDAY, December 5

8.00 - 8.30 am	ECR2	Room: Norfolk	**Elizabeth New**			
8.30 - 9.30 am	PL8	Room: Norfolk	**A. Dean Sherry**			
	Room: Norfolk		Room: Phoenix		Room: Kauri/Cypress	
	Metalloenzymes - P450		**Metals in Medicine**		**Environmental Biological Inorganic Chemistry**	
9.30 - 10.00 am	IL52	Shyamalava Mazumdar	IL54	Yangzhong Liu	KL17	**Alison Butler**
10.00 - 10.30 am	IL53	Stephen Bell	IL55	Wee Han Ang	IL57	Rachel Codd
10.30 - 11.00 am	Morning Tea					
11.00 - 11.30 am	OP48	Masaki Nojiri	KL16	**Trevor Hambley**	OP49	Hao Chen
11.30 - 12.00 am	KL15	**Yoshihito Watanabe**	IL56	Chew-Hee Ng	IL58	Gordon Southam
12.00 - 1.00 pm	PL9	Room: Norfolk	**Shunichi Fukuzumi**			
1.00 - 1.30 pm	Room: Norkfolk	Closing Ceremony				
1.30 - 3.00 pm	Lunch (Relish Restaurant)					

Scientific Program

Legend and Notes

- Bioinorganic Materials and Nanotechnology
- Bioinspired Chemistry
- Environmental Biological Inorganic Chemistry
- Metal Ion Transport and Homeostasis
- Metalloproteins - Structure and Function
- Metals In Medicine
- Metals in Physiology and Disease
- Molecular imaging - Multiple Modalities
- Spectroscopy & Computational Chemistry

PL	Plenary Lecture
KL	Keynote Lecture
IL	Invited Lecture
OP	Oral Presentation
ECR	Early Career Award
OAA	Outstanding Achievement Award

SUNDAY, 30 November

11.30 am	Registration (registration desk)	
	Workshop - High Resolution Multifrequency EPR and its Applications in Biology	
	Room: Kauri/Cypress	
1.00 - 1.10 pm	Welcome	
1.10 - 2.00 pm	**Daniella Goldfarb**	Probing Metal Ion Centers in Biomolecules by Hyperfine Spectroscopy.
2.00 - 2.30 pm	**Jeffrey Harmer**	Looking Under the Broad Lines in Electron Paramagnetic Resonance Spectroscopy - High Resolution Pulse Techniques for Structural Elucidation
2.30 - 3.00 pm	**Graeme Hanson**	The Interplay Between Molecular Structure, EPR Experiments, Computer Smulation and Computational Chemistry
3.00 - 3.30 pm	Afternoon Tea	
3.30 - 4.00 pm	**Peter Lay**	Speciation of Cr(V) and V(IV) Toxins and Drugs in Biological Samples with Isotropic EPR Spectroscopy
4.00 - 4.30 pm	**José Moura**	EPR as a Powerful Tool for Bioinorganic Chemistry.
4.30 - 4.35 pm	Closing Remarks	
5.00 - 6.00 pm	Room: Norfolk	Opening Ceremony
6.00 - 7.00 pm	Room: Norfolk PL1	**Wolfgang Lubitz** Spectroscopic Studies of Metalloenzymes with Complex Metal Centers. Chair: Graeme Hanson
7.00 pm -	Room: Cristels	Welcome Reception

Scientific Program

MONDAY, December 1

8.30 - 9.30 am	Room: Norfolk	PL2	**Peter Sadler** Precious Metal Anticancer Complexes: from Catalysts to Genes.		Chair: Zijian Guo	
	Room: Phoenix **Metal Ion Transport and Homeostasis** Chairs: Peng Chen / Sharon La Fontaine		Room: Norfolk **Metals in Medicine** Chairs: Akhil Chakravarty / Janice Aldrich-Wright		Room: Kauri/Cypress **Imaging - Synchrotron and Other Techniques** Chairs: Dirk-Peter Herten / Peter Lay	
9.30 - 10.00 am	KL1	**Deborah Zamble** Biosynthesis of the [NiFe]-Hydrogenase Enzymes: Metal Binding and Transfer Between Nickel Accessory Proteins.	KL2	**Chi-Ming Che** Anti-Cancer Gold Medicines.	IL6	**Martin de Jonge** X-ray Fluorescence Microscopy: A Unique Probe for Investigating First-row Transition Metals in Biological Systems.
10.00 - 10.30 am	IL1	**Gawain McColl** *Caenorhabditis elegans*: a Model System to Investigate Iron Homeostasis, Senescence and Disease.	IL4	**Xiaoda Yang** From the Mechanism of Vanadium Compounds to the Roles of Metal Ions in Regulating Cellular Stress Responses.	KL3	**Peter Lay** Biospectroscopy and Microbiospectroscopy: Applications in Disease Diagnosis, Understanding the Mechanisms of Diseases, and Pharmaceutical Design.
10.30 - 11.00 am	Morning Tea					
11.00 - 11.30 am	IL2	**Christopher McDevitt** Transition Metal Ion Homeostasis in *Streptococcus pneumoniae*.	OP3	**Muhammad Hanif** Proteins as Drug Delivery Vectors for Metal-based Anticancer Agents	IL7	**Hugh Harris** Correlated X-ray Fluorescence Imaging and Optical Fluorescence Microscopy Reveal Modes of Action for Mn(II) SOD Mimetics.
11.30 - 12.00 am	IL3	**Xuesong Sun** Molecular Mechanism of Iron Transport in Streptococcus Species.	IL5	**Christian Hartinger** Biotin and Anticancer Metallodrug Development: From Targeted Delivery to a Tool in Mechanistic Investigations.	IL8	**Dirk-Peter Herten** Watching Single Molecules in Chemistry - New Perspectives for Fluorescent Probes.
12.00 - 12.20 pm	OP1	**Karrera Djoko** New Insights into the Biochemical Mechanism of Action of Copper(II)-bis(thiosemicarbazonato) Complexes.	OP4	**Philip Andrews** Novel Bismuth(V) and Antimony(V) Complexes as Anti-Leishmanial Agents.	OP6	**Aviva Levina** Applications of Bio-Layer Interferometry in Medicinal Inorganic Chemistry.
12.20 - 12.40 pm	OP2	**Xiaoyong Wang** Mitochondrion-targeting Copper-Complexes Show Great Potential for Overcoming Tumor Resistance to Cisplatin.	OP5	**Xiaoming Liu** Using Iron Carbonyl Complexes as CO-Releasing Molecules (CO-RMs): Approaches for CO-releasing. Releasing Mechanisms and Cytotoxicity.	OP7	**Carolyn Dillon** Can Bismuth Complexes of Non-steroidal Anti-inflammatory Drugs be Used as Potential Bowel Cancer Chemopreventives? Biological Evaluation in HCT-8 Colon Cancer Cells.
12.40 - 2.00 pm	Lunch (Relish Restaurant)					

MONDAY, December 1 (cont)

2.00 - 3.00 pm	Room: Norfolk PL3		**Lucia Banci** Chair: Shyamalava Mazumdar Metal Trafficking in Cells Through a Cellular Structural Biology Approach	
	Room: Norfolk **Diversity of Metalloenzymes in Nature** Chairs: Geoffrey Jameson / Ulrike Kappler		Room: Phoenix **Metals in Neurodegenerative Diseases** Chairs: Taiho Kambe / Paul Donnelly	Room: Kauri/Cypress **Imaging - MRI** Chairs: Kishore Bhakoo / Markus Barth
3.00 - 3.30 pm	IL9	**Teizo Kitagawa** Different Roles of the Fe-His Bonds of the α and β Subunits Toward the Quaternary Structure, Change of Human Hemoglobin; Oxygen Binding Properties, Resonance Raman, ^{1}H NMR, and Near-UV CD Studies of Cavity Mutants.	KL4 **Mi Hee Lim** Are Metal-Associated Misfolded Proteins Involved In Alzheimer's Disease?	KL6 **Kishore Bhakoo** Assessing Stem Cell Therapy Using Multi-modal Imaging.
3.30 - 4.00 pm	IL10	**Luke Guddat** Structural and mechanistic Studies of Plant and Bacterial Ketol-acid Reductoisomerases: Utilization of a Metal Centre Consisting of Two Mg^{2+} Ions.	IL11 **Kevin Barnham** Modulating Metals as a Therapeutic Strategy for Neurodegenerative Diseases.	IL14 **Yun-Ming Wang** Development of Dual-modality MR-optical Imaging Agents for Bio-molecular Imaging.
4.00 - 4.20 pm	OP8	**Magdalena Rowińska-Żyrek** The Complicated Relationship of Mg^{2+} and the Mammalian CPEB3 Ribozyme.	OP13 **Xiubo Du** Inhibitory Act of Selenoprotein P on Metal-induced Aggregation and Neurotoxicity of tau.	OP15 **Jacek Kolanowski** Bispidine-iron(II) Complexes - A Novel Platform for the Development of Magnetogenic Probes.
4.20 - 4.50 pm	Afternoon Tea			
4.50 - 5.20 pm	OP9	**Jeffrey Harmer** EPR Studies of the Fe-S Clusters in the O2-tolerant [NiFe]-hydrogenase Hyd-1 From E. coli, and Characterization of the Unique [4Fe-3S] Cluster.	KL5 **James Camakaris** Copper Regulates Amyloid Pecursor Protein Localisation in Neurons via Kinase Phosphorylation.	IL15 **Kazuya Kikuchi** Highly Sensitive ^{19}F MRI Contrast Agents with Tunable Chemical Switches.
5.20 - 5.50 pm	OP10	**Nobutaka Fujieda** An Unusual Post-translational Self-hydroxylation in Novel Non-heme Iron-Binding Cupin Superfamily Protein.	IL12 **Kay Double** Metals in Neurodegenerative Disease.	IL16 **Matthew Allen** Eu(II)-Based Contrast Agents for T1-Weighted and Chemical Exchange Magnetic Resonance Imaging.
5.50 - 6.20 pm	OP11	**Yoshiaki Furukawa** Disulfide Formation Acts as a Redox Sensor for Enzymatic Activation of Cu,Zn-superoxide Dismutase.	IL13 **Anthony White** Understanding and Restoring Biometal Homeostasis in Neurodegeneration.	IL17 **Markus Barth** Human in vivo MR Imaging at 7 Tesla: Sensitivity to Magnetic Tissue Properties.
6.20 - 6.40 pm	OP12	**Yin-Cheng Hsieh** Crystal Structures of Vertebrate Dihydropyrimidinase and Complexes from Tetraodon Nigroviridis with Lysine Carbamylation: Metal and Structural Requirements for Post-Translational Modification. and Function.	OP14 **Christopher Jones** Tachykinin Neuropeptides and Their Role in Copper Metabolism in the Brain.	OP16 **Karina Pombo Garcia** Corona-free Zwitterion-coated Ultrasmall Iron Oxide Nanoparticles Targeting the EGFR.
7.00 pm -	Dinner Cruise (optional activity)			

TUESDAY, December 2

8.00 - 8.30 am	Room: Norfolk ECR1		**Filip Kielar** Luminescent Iridium Complexes For Metal Ion Sensing.	Chair: Sue Berners-Price
8.30 - 9.30 am	Room: Norfolk PL4		**Anthony Wedd** Copper: Its Molecular Roles in Health and Disease.	Chair: Hongzhe Sun
	Room: Norfolk **Copper Transport and Homeostasis** Chairs: Deborah Zamble / James Camakaris		Room: Kauri/Cypress **Metals in Medicine - Biomolecular interactions** Chairs: Christian Hartinger / Philip Andrews	Room: Phoenix **Bioinspired Active Site Model Complexes** Chairs: Sankar Rath / Bim Graham
9.30 - 10.00 am	KL7	**David Giedroc** Copper Metalloregulation and Trafficking at the Host-microbial Pathogen Interface.	OP50 **Eduardo Sousa** Metallonitrosyl Complexes with DNA Cleavage Activity.	IL25 **Jaeheung Cho** Ligand Tuning of Metal-active Oxygen Species in Oxidative Reactions.
10.00 - 10.30 am	IL18	**Sharon La Fontaine** Glutaredoxin1 (GRX1) and ATOX1 at the Intersection of Copper Distribution and Cellular Redox Balance.	IL22 **Guangyu Zhu** Dual-targeting Non-traditional Platinum Compounds and Pt-loaded Inorganic Nanoparticles to Improve Cisplatin's Anticancer Activity.	OP21 **Way-Zen Lee** Synthesis and Reactivity of a Paramagnetic Mononuclear Nonheme Iron-Superoxo Complex.
10.30 - 11.00 am	Morning Tea			
11.00 - 11.30 am	IL19	**Peng Chen** The Multiple Antibiotic Resistance Regulator MarR is a Copper Sensor in Escherichia coli.	IL23 **Janice Aldrich-Wright** Platinum Metallointercalators.	KL8 **Shinobu Itoh** Oxygen Activation at Mononuclear Copper Reaction Center.
11.30 - 12.00 am	IL20	**Aixin Yan** Copper Homeostasis During the Bacterial Stress Adaptation to Oxygen and Amino Acid Limitation.	IL24 **Zong-Wan Mao** Design, Anticancer Properties and Theranostic Potential of Metal-Based Molecularly Targeted Anticancer Agents.	IL26 **Masahito Kodera** High-Spin Oxodiiron(IV) Active Species $[O=Fe(IV)]_2O$ that Cleaves Strong C-H Bond: Formation Mechanism and Efficient Alkane Oxidation with H_2O_2.
12.00 - 12.20 pm	OP17	**Zhiguang Xiao** A Set of Sensitive Fluorescent Probes Capable of Quantifying Cu(II) Sites with Affinities from Nanomolar to Sub-Picomolar.	OP19 **Daniela Donghi** Investigation of Metal Complex Binding to RNA.	OP22 **Steve Colbran** A Bioinspired Approach to Chemical Reduction.
12.20 - 12.40 pm	OP18	**Shu-Pao Wu** Highly Selective Turn-on Fluorescent Sensor for Cu(II) Based on an NSe_2 Chelating Moiety and its Application in Living Cell Imaging.	OP20 **Zhen-Feng Chen** Metal-based Anticancer Agents Based on TCM Active Ingredient Oxo(iso)aporphine Alkaloids.	OP23 **Hideki Sugimoto** Osmium(V)-oxo Complexes: Models of Putative Intermediates of Iron Dioxygenase.
12.40 - 2.00 pm	Lunch (Relish Restaurant)			

TUESDAY, December 2 (cont)

2.00 - 3.00 pm	Room: Norfolk PL5	**Jiangyun Wang** Metalloprotein Design Using Genetic Code Expansion.	Chair: Yoshihito Watanabe
	Room: Norfolk **Bionanomaterials** Chair: Lei Jiang / David Ollis	Room: Phoenix **Imaging - PET** Chair: Luisa De Cola / Rachel Codd	Room: Kauri/Cypress **Spectroscopy & Computational Chemistry** Chair: Manho Lim / Jeffrey Harmer
3.00 - 3.30 pm	IL27 **Takafumi Ueno** Bioinspired Inorganic Materials of Protein Assemblies.	KL10 **Paul Donnelly** The Synthesis of Metal Complexes to Assist in Diagnosis of Cancers and Thrombosis.	KL11 **Peter Comba** Coordination Chemistry of Cyclic Peptides: Possible Biological Functions of the Patellamides.
3.30 - 4.00 pm	IL28 **Ruikang Tang** Biomineralization-inspired Nano Modification of Organism.	IL29 **Holger Stephan** ^{64}Cu-labeled Agents for Molecular Imaging of Cancer.	IL30 **Guy Jameson** Rapid Single Turnover Dioxygenation by Substrate-Bound Cysteine Dioxygenase.
4.00 - 4.30 pm	KL9 **Lei Jiang** Bio-Inspired Smart Nanochannels.	OP24 **Peter Barnard** Synthesis and Studies of Cage Ligands: Potential Applications in the Development of Copper-64 Radiopharmaceuticals.	IL31 **Gopalan Rajaraman** Role of Biomimetic Non-heme Iron Species in Aromatic Hydroxylation Reaction: A Computational Investigation.
4.30 - 6.30 pm	Afternoon Tea and Poster Session (in rooms Monaco I, Monaco II and Cristels, located in the walkway to the Gold Tower). EVEN numbered Posters 4.30 - 5.30 pm, ODD numbered Posters 5.30 - 6.30 pm		
7.00 pm -	Outback Spectacular Experience (optional activity)		

WEDNESDAY, December 3

8.00 - 9.00 am	Room: Norfolk PL6	**Greg Anderson** Chair: Paul Bernhardt Linking Iron Homeostasis to Human Disease: Lessons From the Hepcidin-ferroportin Axis.		
	Room: Phoenix **Metalloenzymes and Metallomics** Chairs: Nobuo Kamiya / Megan Maher	Room: Norfolk **Iron in Physiology and Disease** Chairs: Mi Hee Lim / Gawain McColl	Room: Kauri/Cypress **Native and Modified Enzyme Catalysis** Chairs: Shinobu Itoh / Steve Colbran	
9.00 - 9.30 am	KL12	**Hongzhe Sun** Matching Metals to Proteins by an Integrated Metallomic Approach.	IL35	**Debbie Trinder** Role of Dietary Iron in the Development of Colorectal Cancer.	IL38	**David Ollis** Evolving Metalloproteins.
9.30 - 10.00 am	IL32	**José Moura** Mo and W Substituted Rubredoxins: Models for Molybdoenzymes.	IL36	**David Frazer** Erythroid Regulation of Iron Homeostasis.	IL39	**Takashi Hayashi** Structural Model of Methionine Synthase by Myoglobin Reconstituted with a Cobalt Corrin Derivative.
10.00 - 10.30 am	Morning Tea			
10.30 - 11.00 am	IL33	**Paul Bernhardt** Electrochemical Communication with Molybdoenzymes.	OP27	**Danuta Kalinowski** Mucking Around with Metals to Inhibit Metastasis,Block Tumour Growth and Overcome Drug Resistance: Targeting the Metastasis Suppressor NDRG1 and the Lysosome.	IL40	**Steve S.-F Yu,** Learning from Microbial Systems to Develop Biomimetic Catalysts for Hydrocarbon Oxidation.
11.00 - 11.30 am	IL34	**Megan Maher** Structural Basis of Interprotein Electron Transfer for Bacterial Sulfite Oxidation.	IL37	**Fudi Wang** Deciphering Roles of Iron Homeostasis on Chronic Diseases.	OP30	**Takahiko Kojima** Heteroaromatic Coenzymes in Ruthenium(II) Coordination Sphere: Coordination Modes, Electronic Structures, and Redox Property.
11.30 - 11.50 am	OP25	**Ulrike Kappler** Molecular Basis of Enzymatic Sulfite Oxidation by Metalloenzymes.	OP28	**Junxia Min** Roadmap of Deregulated Iron Metabolic Pathways in Cancer.	OP31	**Trevor Rapson** Turning Myoglobin into a Nitrous Oxide Reductase.
11.50 - 12.10 pm	OP26	**Blaine Roberts** Characterization of Metalloenzymes From Human Brain Using Metalloproteomic Maps.	OP29	**Angelica Merlot** Augmenting the Uptake and Anti-Cancer Activity of the Chelator, Dp44mT, through Serum Protein Interactions.	OP32	**Yutaka Amao** Promotion of Formate Dehydrogenase Activity of the Conversion of CO_2 to Formic Acid by an Artificial Coenzyme with 2,2'- bipyridinium Salt Skeletons.
12.10 - 1.00pm	Lunch (Relish Restaurant)			
1.00 pm - 5.30 pm	Conference Tours (optional activity: Lamington National Park / Sea World half day tour / Movie World half day experience, meet in Hotel lobby)			
5.30 pm -	Four Winds 360 Revolving Restaurant (optional activity)			

THURSDAY, December 4

8.30 - 9.30 am — Room: Norfolk — OAA1 — **Wonwoo Nam** — Biomimetic Metal-Oxygen Intermediates in Dioxygen Activation Chemistry. — Chair: Teizo Kitagawa

9.30 - 10.30 am — Room: Norfolk — **Poster Slam Presentations** — Chair: Peter Sadler

Morning Tea

Room: Norfolk
Zinc in Physiology and Disease
Chairs: David Giedroc / Christopher McDevitt

11.00 - 11.30 am	IL41	**Taiho Kambe** How are Zinc-requiring Enzymes Activated by Zinc Transporters in the Early Secretory Pathway?
11.30 - 12.00 am	OP33	**Alastair McEwan** An Antimicrobial Role for Zinc in Innate Immune Defense Against Bacterial Infection.
12.00 - 12.20 pm	OP34	**Weijiang He** Zn^{2+} Fluorescence Imaging in Living Systems: from Subcellular Organelle to Mammalian.
12.20 - 12.40 pm	OP35	**Sally-Ann Poulsen** Medicinal Chemistry of Carbonic Anhydrase Inhibitors Targeting Tumour Hypoxia.

Room: Cypress
Metals in Medicine
Chairs: Zong-Wan Mao / Peter Barnard

11.00 - 11.30 am	IL42	**Akhil Chakravarty** Curcumin Complexes for Photocytotoxicity and Cellular Imaging.
11.30 - 12.00 am	IL43	**Dennis Ng** Activatable Photosensitizers Toward Targeted Photodynamic Therapy.
12.00 - 12.20 pm	OP36	**Tanmaya Joshi** Towards Substitutionally-Inert Ru(II) Complexes as Photoactivatable Anticancer Agents.
12.20 - 12.40 pm	OP37	**Alexey Nazarov** Novel Ruthenium Anticancer Compounds to Interfere with Cellular Processes.

Room: Kauri
Spectroscopy & Computational Chemistry
Chairs: Guy Jameson / Ron Pace

11.00 - 11.30 am	IL44	**Manho Lim** Rebinding Dynamics of O_2 to Myoglobin Probed by Time-resolved IR Spectroscopy.
11.30 - 12.00 am	OP38	**Azaj Ansari** A Computational Approach to Understand the Mechanism of α-Ketoglutarate Dependent & Related Models.
12.00 - 12.20 pm	OP39	**Bim Graham** Expediting Protein Structure Determination With Lanthanide Metal Complexes.
12.20 - 12.40 pm	OP40	**Thomas Carruthers** Fe^{3+} in the Dinuclear Metallo-β-Lactamase IMP-1 Located by Pseudocontact Shifts.

Room: Phoenix
Imaging -multiple modalities
Chairs: Holger Stephan / Max Massi

11.00 - 11.30 am	KL13	**Zijian Guo** *In vitro* and *In vivo* Imaging of Bio-Medicinal Inorganic Species.
11.30 - 12.00 am	OP41	**Youngmin You** Metal Complexes for Multifunctional Molecular Imaging.
12.00 - 12.20 pm	OP42	**Ashis Patra** Photo-induced DNA Cleavage Activity and Sensing Applications of Bioactive Luminescent Lanthanide Complexes.
12.20 - 12.40 pm	OP43	**Taotao Zou** Luminescent Cyclometalated Platinum(II) Complex Forms Emissive Intercalating Adducts with Double Stranded DNA and RNA: Differential Emissions and Anticancer Activities.

12.40 - 2.00 pm — Lunch (Relish Restaurant)

THURSDAY, December 4 (cont)

2.00 - 3.00 pm — Room: Norfolk PL7

Vivian Wing-Wah Yam — Chair: Alison Butler
New Strategies Towards Design of Luminescent Metal-Ligand Chromophoric Ensembles, Conjugates and Nano-Assemblies for Sensing and Bioassays.

Room: Norfolk
Mn Metalloenzymes
Chair: José Moura / Christopher Jones

3.00 - 3.30 pm — KL14 — **Nobuo Kamiya**
Structure and Function of $Mn_4CaO_5(H_2O)_4$ Cluster in Oxygen-evolving Photosystem II.

3.30 - 4.00 pm — IL45 — **Ron Pace**
Electronic Structure of the Oxygen Evolving Complex in Photosystem II, as Revealed by ^{55}Mn ENDOR Studies at 2.5 K

4.00 - 4.30 pm — IL46 — **Geoffrey Jameson**
Towards Elucidation of the Proton-Coupled Electron-Transfer Reaction Mechanism in Manganese Superoxide Dismutase through Disruption of the Dimer Interface

Room: Phoenix
Metals in Medicine -Nanomedicine
Chair: Yun-Ming Wang / Kevin Barnham

3.00 - 3.30 pm — IL47 — **Luisa De Cola**
Hybrid (Nano)materials for Biomedical Applications.

3.30 - 4.00 pm — IL48 — **Bengang Xing**
Localized Antitumor Drug Activation and Early Stage Tumor Imaging Through NIR Light Mediated Upconversion Platforms.

4.00 - 4.30 pm — OP44 — **Kristof Zarschler**
Diagnostic Nanoparticle Targeting of the EGF-receptor Using Single-domain Antibodies.

Room: Kauri
Bioinspired Active Site Model Complexes
Chair: Steve S.-F Yu / Trevor Rapson

3.00 - 3.30 pm — IL49 — **Sankar Rath**
Porphyrin Dimers as Model of Di-heme Proteins: Effect of Inter-macrocyclic Interactions.

3.30 - 4.00 pm — IL50 — **Chen-Hsiung Hung**
Model Studies Based on N-Confused Porphyrin Metal Complexes.

4.00 - 4.30 pm — OP45 — **Yunho Lee**
Transformation of CO_2 and CO at a Mononuclear Nickel Center.

Room: Cypress
Molecular Imaging
Chair: Filip Kielar / Elizabeth New

3.00 - 3.30 pm — IL51 — **David Churchill**
Fluorescent Crowdoxidation Molecular Probes for Neurodegenerative Disease Research.

3.30 - 4.00 pm — OP46 — **Max Massi**
Rhenium Tetrazolato Complexes: Versatile Building Blocks for Responsive Optical Molecular Imaging with Unique Biological Properties.

4.00 - 4.30 pm — OP47 — **Akio Ojida**
Design of Dual Emission Fluorescent Probes Based on Arene-Metal Ion Contact and their Application to Cell Bioimaging.

4.30 - 6.30 pm — Afternoon Tea and Poster Session (in rooms Monaco I, Monaco II and Cristels, located in the walkway to the Gold Tower). ODD numbered Posters 4.30 - 5.30 pm, EVEN numbered Posters 5.30 - 6.30 pm

7.00 pm - 11.30 pm — Gala Conference Dinner

FRIDAY, December 5

8.00 - 8.30 am	Room: Norfolk ECR2	**Elizabeth New** Chair: Chew-Hee Ng New Molecular Imaging Tools to Study Essential and Therapeutic Metal Ions in Cells.	
8.30 - 9.30 am	Room: Norfolk PL8	**A. Dean Sherry** Chair: Trevor Hambley Imaging Free Zn(II) Ions in vivo by MRI.	
	Room: Norfolk **Metalloenzymes - P450** Chairs: Takashi Hayashi / Gary Schenk	Room: Phoenix **Metals in Medicine** Chairs: Chi-Ming Che / Carolyn Dillon	Room: Kauri/Cypress **Environmental Biological Inorganic Chemistry** Chairs: Peter Comba / Hugh Harris
9.30 - 10.00 am	IL52 **Shyamalava Mazumdar** The Stability and Reactivity of a Thermostable Cytochrome P450: Role of Non-bonded Residues Near the Active Site.	IL54 **Yangzhong Liu** Platinum Antitumor Drugs: Mechanistic Studies and New Drug Design.	KL17 **Alison Butler** Biosynthesis and Tailoring of Acyl Peptidic Siderophores.
10.00 - 10.30 am	IL53 **Stephen Bell** Understanding the Mechanism of Oxidation and Electron Transfer in Bacterial P450 Enzymes.	IL55 **Wee Han Ang** Arming Platinum(IV) Anticancer Prodrugs for Targeted Chemotherapy.	IL57 **Rachel Codd** Characterisation of New Native and Engineered Siderophores from Marine Bacteria Using Improved Analytical Methods and Precursor-directed Biosynthesis.
10.30 - 11.00 am	Morning Tea		
11.00 - 11.30 am	OP48 **Masaki Nojiri** Beyond the Transient Protein-Protein Interaction on Interprotein Electron-flow into Cytochrome P450cam.	KL16 **Trevor Hambley** The Role of Metal-Based Anticancer Drugs in the Era of Molecularly Targeted Agents.	OP49 **Hao Chen** Pseudomonas putida CadR, a MerR Family Protein, Selectively Recognizes Cd^{2+} Metal Ions.
11.30 - 12.00 am	KL15 **Yoshihito Watanabe** Hydroxylation of Inert Organic Molecules by Cytochrome P450/Decoy Systems.	IL56 **Chew-Hee Ng** Effect of Chirality on Interaction with DNA and Serum, Proteasome Inhibition and Anticancer Property of Enantiomeric Ternary Copper(II) Complexes.	IL58 **Gordon Southam** The Biogeochemistry of Gold
12.00 - 1.00 pm	Room: Norfolk PL9	**Shunichi Fukuzumi** Chair: Wonwoo Nam Bioinspired Artificial Photosynthesis for Solar Fuel Production.	
	Closing Ceremony (Norfolk Room)		
1.30 - 3.00 pm	Lunch (Relish Restaurant)		