

# Singapore-Paris Chemical Biology workshop

## 5 - 7 March 2019

### Programme

**Location:** NTU, School of Physical and Mathematical Sciences SPMS, 21 Nanyang link, Singapore 637371, Lecture Theater 2

	Mon 4th March 2019	Tues 5th March 2019	Wed 6th March 2019	Thur 7th March 2019
9h00-9h20				
9h20-9h40		Introduction (NTU-SPMS, PSL)		A. Granzhan T.H. Li
9h40-10h00			M. L. See (Twist Bioscience)	M. Etheve
10h00-10h20		B. Xing	M.P. Teulade-Fichou	Coffee (20 min)
10h20-10h40		C. Policar	G. Chen	
10h40-11h00		A. Gautier	B. Heddi	
11h00-11h20		U. S. Dinish	Coffee (40 min)	Discussions
11h20-11h40		Coffee (20 min)		
11h40-12h00		WK Leong	P. Arimondo	F. Garcia
12h00-12h20		G. Gasser	A. T. Phan	L. Carlier
12h20-12h40		G. Pastorin	D. Rhodes	S. S. Chng
12h40-13h00		A. Vessières		M. Gugger
13h00-13h20			Lunch and Discussions	R. P. L. Ee
13h20-13h40		Lunch		Lunch
13h40-14h00				
14h00-14h20		J. P. Tam	D. Verga	
14h20-14h40		S. Sagan	E. Deprez	
14h40-15h00		W. H. Ang	L. Jullien	
15h00-15h20		V. Semetey	H. V. Huynh	
15h20-15h40		Coffee (40 min)	Y. K. Yan	
15h40-16h00			M. Salmain	
16h00-16h20		C. Chai	Coffee (40 min)	
16h20-16h40		R. Rodriguez		
16h40-17h00		B. I. Morinaka	B. Vauzeilles	
17h00-17h20			F. Ghadessy	
17h20-17h40			M. Miteva	
17h40-18h00		Posters and discussions	C. Verma	
18h00-18h20				Imaging and probes
18h20-18h40				Bioinorganic Chemistry
18h40-19h00				Drug Discovery
19h00-19h20	Welcome (COSMO, NTU Campus)		Dinner	Nucleic acids
19h20-19h40				Targeting and Assemblies
19h40-20h00				
20h00-20h30				
20h30-21h00				



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Nanyang Technological University, School of Physical and Mathematical Sciences  
Lecture Theater 2 (SPMS-03-03) and MAS Atrium

### PROGRAMME

#### Tuesday 5<sup>th</sup> March

8 h 30 - 9 h 20	<b>Registration</b> (posters installation)
9 h 20 - 10 h 00	<b>Workshop's opening with</b> NTU-SPMS and Minh-Hà PHAM, Vice Director International relations PSL University
	<b>Introduction</b> – Organizing committee
	<b>LECTURES (Imaging and probes, Chair: Felipe Garcia)</b>
10 h 00 - 10 h 20	<b>Assoc. Prof. Bengang XING</b> (NTU-SPMS-CBC): Unique Fluorescent Imaging Probes for Specific Manipulation of Cellular Functions and Localized Theranostics
10 h 20 - 10 h 40	<b>Prof. Clotilde POLICAR</b> (ENS-PSL, Sorbonne Université, CNRS): Metal-Carbonyls are efficient multi-modal probes: classical fluorescence, IR and X-fluorescence
10 h 40 - 11 h 00	<b>Asst Prof. Arnaud GAUTIER</b> (ENS-PSL, Sorbonne Université, CNRS): Spying on cells with glowing chemical-genetic hybrids
11 h 00 - 11 h 20	<b>Asst Prof (Adj) U.S DINISH</b> (A*STAR-SBIC, NTU-SPMS): Novel Photonics Sensing and Imaging Techniques for Translational Biomedical Applications: From Bench to Bed Side
11 h 20 - 11 h 40	<b>COFFEE BREAK</b>
	<b>LECTURES (Bioinorganic Chemistry, Chair: Hélène Bertrand)</b>
11 h 40 - 12 h 00	<b>Assoc. Prof. Weng Kee LEONG</b> : (NTU-SPMS-CBC): Application of Organometallic Chemistry in the Biomedical Sciences
12 h 00 - 12 h 20	<b>Dr. Gilles GASSER</b> (Chimie Paristech-PSL, CNRS): Metal Complexes and Medicinal Chemistry: what a Combination
12 h 20 - 12 h 40	<b>Assoc. Prof. Giorgia PASTORIN</b> (NUS-Pharmacy Dpt): Induction of mitochondrial dysfunction and cancer cell death by mitochondria-targeting Pt(IV) compounds
12 h 40 - 13 h 00	<b>Dr. Anne VESSIERES</b> (CNRS, Sorbonne Université): New insights in the mechanism of action of metallocifens
13 h 00 - 14 h 00	<b>LUNCH</b>
	<b>LECTURES (Targeting and Assemblies, Chair: Giorgia Pastorin)</b>
14 h 00 - 14 h 20	<b>Lee Wee Nam Prof. James P. TAM</b> (NTU-SBS): Superglue from Nature – Recent Advances in Linkage-specific Ligation
14 h 20 - 14 h 40	<b>Dr. Sandrine SAGAN</b> (CNRS, Sorbonne Université, ENS-PSL): Molecular and cellular quantitative aspects of the glycosaminoglycan-dependent internalization of Engrailed-2 homeoprotein analogues

14 h 40 - 15 h 00	<b><u>Prof. Wee Han ANG</u></b> (NUS-Chemistry Dpt): Anticancer platinum(IV) prodrug complexes and their intracellular activation processes
15 h 00 - 15 h 20	<b><u>Dr. Vincent SEMETÉY</u></b> (CNRS, Chimie ParisTech-PSL University): Understanding interactions between polyelectrolytes and bacteria
15 h 20 - 16 h 00	<b>COFFEE BREAK</b>
	<b>LECTURES (Drug Discovery, Chair: Muriel Gugger)</b>
16 h 00 - 16 h 20	<b><u>Prof. Christina CHAI</u></b> (NUS-Pharmacy Dpt): Promiscuous natural products as lead compounds in drug discovery
16 h 20 - 16 h 40	<b><u>Dr. Raphaël RODRIGUEZ</u></b> (CNRS, Institut Curie-PSL): Reprogramming the reactivity of iron in cancer
16 h 40 - 17 h 00	<b><u>Assist Prof. Brandon MORINAKA</u></b> (NUS-Pharmacy Dpt): Genome mining for posttranslational modifications
17 h 00 - 19 h 00	<b>POSTER PRESENTATIONS</b>

## Wednesday 6<sup>th</sup> March

	<b>LECTURES (Nucleic acids, Chair: Anh-Tuân Phan)</b>
9 h 40 - 10 h 00	<b><u>Dr. Meng Lye SEE</u></b> (Twist Bioscience): Powering the Synthetic Biology and Genomics Revolution
10 h 00 - 10 h 20	<b><u>Dr. Marie-Paule TEULADE-FICHOU</u></b> (CNRS, Institut Curie-PSL): Disrupting Nucleolin interaction with quadruplex DNA and RNA: Biological relevance and Pharmacological application
10 h 20 - 10 h 40	<b><u>Assist Prof. Gang CHEN</u></b> (NTU-SPMS-CBC): Studying RNA mechanical unfolding dynamics using optical tweezers and targeting RNA structures with chemically-modified dsRNA-binding PNAs
10 h 40 - 11 h 00	<b><u>Dr. Brahim HEDDI</u></b> (CNRS, ENS Paris-Saclay): Interaction of telomestatin derivatives with human telomeric DNA: Trapping of DNA in a parallel-stranded G-quadruplex conformation
11 h 00 - 11 h 40	<b>COFFEE BREAK</b>
	<b>LECTURES (Nucleic acids, Chair: Anton Granzhan)</b>
11 h 40 - 12 h 00	<b><u>Dr. Paola ARIMONDO</u></b> (CNRS, Institut Pasteur): Chemical Targeting of DNA and histone methylation to reprogram cells in human diseases
12 h 00 - 12 h 20	<b><u>Prof. Anh-Tuan PHAN</u></b> (NTU-SPMS-PAP): Structure, recognition, and detection of G-quadruplexes
12 h 20 - 12 h 40	<b><u>Prof. Daniela RHODES</u></b> (NTU, Institute of Structural Biology): Yeast RAP1 and G-quadruplexes
12 h 40 - 14 h 00	<b>LUNCH</b>
	<b>LECTURES (Imaging and probes, Chair: Clotilde Policar)</b>
14 h 00 - 14 h 20	<b><u>Dr. Daniel VERGA</u></b> (CNRS, Institut Curie-PSL): Tracking G-quadruplex ligands by NanoSIMS chemical imaging
14 h 20 - 14 h 40	<b><u>Dr. Eric DEPRez</u></b> (CNRS, ENS Paris-Saclay): Triggering and imaging cell death with triphenylamine derivatives
14 h 40 - 15 h 00	<b><u>Prof. Ludovic JULLIEN</u></b> (Sorbonne Université, ENS-PSL): Out-of-Phase Imaging after Optical Modulation for Micro- and Macro-scale Multiplexed Fluorescence Imaging Against Autofluorescence and Ambient Light
	<b>LECTURES (Bioinorganic Chemistry, Chair: Weng Kee Leong)</b>
15 h 00 - 15 h 20	<b><u>Assoc. Prof. Han Vinh HUYNH</u></b> (NUS-Chemistry Dpt): Cationic bis(NHC) gold(I) complexes as potential anti-tumor agents
15 h 20 - 15 h 40	<b><u>Assoc. Prof. Yaw Kai YAN</u></b> (NTU-NIE): Cytotoxic copper(II) complexes of salicylaldehyde semicarbazones: G-quadruplex binding and mode of action studies

15 h 40 - 16 h 00	<b>Dr. Michèle SALMAIN</b> (CNRS, Sorbonne Université): Half-sandwich iridium(III) complexes with cytotoxic properties: Synthesis, biological studies and cell imaging
16 h 00 - 16 h 40	<b>COFFEE BREAK</b>
16 h 40 - 17 h 00	<b>LECTURES (Drug Discovery, Chair: Brandon Morinaka)</b> <b>Dr. Boris VAUZEILLES</b> (CNRS, ICSN, Université Paris-Saclay): Bringing pathogens to light
17 h 00 – 17 h 20	<b>Dr. Farid GHADESSY</b> (A*STAR): Inhibition of MDM2/MDM4 by small molecules and chemically modified peptides
17 h 20 – 17 h 40	<b>Dr. Maria MITEVA</b> (INSERM, CNRS, Univ. Paris Descartes): Integration of in silico structure-based and machine-learning approaches for drug discovery
17 h 40 – 18 h 00	<b>Prof. Chandra VERMA</b> (A*STAR, NTU-SBS): Design and development of new chemical probes for biologists: stapled peptides
18 h 30	<b>Bus Transfer to Dinner</b>

## Thursday 7<sup>th</sup> March

9 h 20 - 9 h 40	<b>LECTURES (Nucleic acids, Chair: Gang Chen)</b> <b>Dr. Anton GRANZHAN</b> (CNRS, Institut Curie-PSL): Chemical Biology of Ligands Targeting AP-Sites in DNA
9 h 40 - 10 h 00	<b>Prof. Tianhu LI</b> (NTU-SPMS-CBC): Detection of cancer biomarker FEN1 in living cells
10 h 00 - 10 h 20	<b>Prof. Mélanie ETHEVE-QUELQUEJEU</b> (Université Paris Descartes, CNRS): Synthetic RNA for Structural and Functional Studies of amino-acyl- and methyl-transferases
10 h 20 - 10 h 40	<b>COFFEE BREAK</b>
10 h 40 - 11 h 40	<b>DISCUSSIONS</b>
11 h 40 - 12 h 00	<b>LECTURES (Bioinorganic Chemistry, Chair: Sandrine Sagan)</b> <b>Assist Prof. Felipe GARCIA</b> (NTU-SPMS-CBC): New T*PP Lipophilic Cations For Enhanced Mitochondrial Uptake
12 h 00 - 12 h 20	<b>Assist Prof. Ludovic CARLIER</b> (Sorbonne Université, ENS-PSL, CNRS): Probing the structure and dynamics of fuzzy proteins by paramagnetic NMR
12 h 20 - 12 h 40	<b>Assoc. Prof. Shu Sin CHNG</b> (NUS-Chemistry Dpt): Flipping trehalose monomycolate across the inner membrane in mycobacteria
12 h 40 - 13 h 00	<b>Dr. Muriel GUGGER</b> (Institut Pasteur, CNRS): Aeruginoguanidine and microguanidine, jointly assembled by the same biosynthetic pathway of <i>Microcystis</i>
13 h 00 - 13 h 20	<b>Assoc. Prof. Rachel Pui Lai EE</b> (NUS-Pharmacy Dpt): Antimicrobial peptide stabilization and delivery approaches
	<b>CONCLUSION</b>
13 h 00 - 14 h 00	<b>LUNCH</b>