

# NQMP2014 Program

\*SH = Seaside House

\*B250 = Seminar Room B250, Level B, Center Building, Main Campus

## Tuesday, 13th May 2014

19:30	Welcome Reception		(food and drink will be provided)	SH
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## Wednesday, 14th May 2014

08:50	Welcome (10)	G. Iwama (OIST)		B250
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### New directions in materials (Chair: Zenji Hiroi)

09:00	Overview Talk (50+10)	R. J. Cava (Princeton)	Searching for new geometrically frustrated magnets and materials with Dirac electrons	B250
10:00	Invited Talk (25+5)	C. Tassel (Kyoto)	Designing novel perovskites with mixed anions	B250
10:30	Coffee			
11:00	Invited Talk (25+5)	M. Hayward (Oxford)	Topochemical Reduction as a Route to New Quantum Materials	B250
11:30	Invited Talk (25+5)	K. Matsuhira (K.I.T.)	Metal-Insulator Transitions in Pyrochlore Iridates	B250
12:00	Invited Talk (25+5)	M. Udagawa (Tokyo)	Transport theory of pyrochlore conductors	B250
12:30	Lunch & Discussions		(optional campus tour 13:30)	

### Low-dimensional and topological systems (Chair: Hikaru Kawamura)

15:30	Overview Talk (50+10)	Y. Ando (Osaka)	Topological Insulators and Superconductors	B250
16:30	Contributed Talk (25+5)	B. J. Yang (RIKEN)	Quantum criticality of topological phase transition in 3D interacting electronic systems	B250
17:00	Coffee			
17:30	Invited Talk (25+5)	J. Moore (UC Berkeley)	The quantum spin Hall edge as a tool for nonequilibrium correlated physics	B250
18:00	Invited Talk (25+5)	K. Dani (OIST)	Emergent Opto-electronic Phenomena in Artificial Van Der Waals Heterostructures	B250
18:30	Invited Talk (25+5)	D. Konstantinov (OIST)	Novel state of a nondegenerate two-dimensional electron system induced by a resonant microwave excitation	B250
19:30	Dinner			SH
20:30	1st Poster Session			SH

**Thursday, 15th May 2014**

## Quantum spin systems and frustrated magnetism (Chair: Bruce Gaulin)

09:00	Overview Talk (50+10)	L. Balents (UCSB)	Quantum phenomena in frustrated magnets	B250
10:00	Invited Talk (25+5)	G. W. Chern (Los Alamos)	Spin and orbital order in frustrated vanadium spinels	B250
10:30	Coffee			
11:00	Invited Talk (25+5)	K. Ross (Johns Hopkins)	Magnetic Correlations in a Frustrated Ni <sup>3+</sup> - Based Spin 1/2 Honeycomb Lattice	B250
11:30	Invited Talk (25+5)	L. Jaubert (OIST)	Spin liquids and exotic phases in rare earth pyrochlore oxides	B250
12:00	Contributed Talk (25+5)	M. Takigawa (Tokyo)	Search for a nematic phase and bound magnon pairs in LiCuVO <sub>4</sub>	B250
12:30	Lunch & Discussions		(optional campus tour 13:30)	

## Quantum spin systems and frustrated magnetism (Chair: Jason Gardner)

15:30	Overview Talk (50+10)	Y. Tokura (RIKEN)	Emergent phenomena from topological spin textures	B250
16:30	Invited Talk (25+5)	G. Jackeli (MPI-FKF)	Magnetic order and excitations in insulating iridates	B250
17:00	Coffee			
17:30	Invited Talk (25+5)	S. Nakatsuji (Tokyo)	Topological excitations and anomalous semi-metallic phase in Pr based pyrochlore oxides	B250
18:00	Contributed Talk (25+5)	Y. Wan (Johns Hopkins)	Z <sub>2</sub> spin liquid in the S=1/2 kagome Heisenberg antiferromagnet	B250
18:30	Invited Talk (25+5)	Y. Okamoto (Nagoya)	Geometrical Frustration and Bond Alternation on the Breathing Pyrochlore Lattice	B250
19:30	Dinner			SH
20:30	2nd Poster Session			SH

**Friday, 16th May 2014**

## Unconventional superconductivity (Chair: Yukitoshi Motome)

08:30	Overview Talk (50+10)	H. H. Wen (Nanjing)	Superconductivity mechanism in iron based superconductors: a view from transport, tunneling and thermodynamics	B250
09:30	Invited Talk (25+5)	J. Yamaura (T.I.T.)	Bipartite magnetic parent phases in the iron oxypnictide superconductor	B250
10:00	Invited Talk	M. Nohara	Development of high-T <sub>c</sub> superconductors using the chemistry of arsenic	B250

	(25+5)	(Okayama)		
10:30	Coffee			
11:00	Invited Talk (25+5)	Y. Yanase (Niigata)	Exotic superconductivity in spin-orbit coupled systems	B250
11:30	Contributed Talk (25+5)	D. Efremov (IFW Dresden)	Electronic correlations stabilizing time-reversal broken, chiral superconductivity in single-trilayer TiSe <sub>2</sub>	B250
12:00	Invited Talk (25+5)	Y. Onuki (Ryukyus)	Split Fermi Surface Properties in the Rashba-type and Chiral Structure Compounds	B250
12:30	<a href="#">Excursion</a>		(lunch box will be provided)	
20:00	Banquet			SH

### Saturday, 17th May 2014

#### Applications of novel materials (Chair: Takahisa Arima)

09:00	Overview Talk (50+10)	P. Littlewood (ANL)	Engineering quantum materials for energy technologies	B250
10:00	Contributed Talk (25+5)	D. Hirai (Tokyo)	Exotic phases induced by spin-orbit coupling in Ir oxides	B250
10:30	Coffee			
11:00	Invited Talk (25+5)	Y. Qi (OIST)	Air Exposure Effects on a Hole Transport Material for Solid State Dye-Sensitized Solar Cells	B250
11:30	Invited Talk (25+5)	Y. Onose (Tokyo)	Topological effects on magnetic excitations in magnetic materials	B250
12:00	Invited Talk (25+5)	S. Ishiwata (Tokyo)	Semimetallic transition-metal chalcogenides as low-temperature thermoelectrics	B250
12:30	Lunch & Discussions			

#### Summary and Closing (Chair: Nic Shannon)

15:30	Summary Talk (25+5)	H. Kageyama (Kyoto)	New Materials	B250
16:00	Summary Talk (25+5)	N. Hussey (HMFL, Nijmegen)	New Phases	B250
16:30	Closing (30)	N. Shannon (OIST)		B250
17:00	Coffee			
19:00	BBQ Dinner			SH