**Telluride Workshop**

**Competing Interactions and Colossal Responses in Transition Metal Oxide**

**June 8-12, 2015**

**Telluride Elementary School**

**447 West Columbia Ave., Telluride, CO**

**Monday, June 8, 2015**

8:00-8:20 Breakfast

8:20-8:30 Welcome and Announcements

Nickelates

Session Chair: John Budai

1. 8:30-9:00 Unusual electronic configurations in nickelates, *John Freeland*
2. 9:00-9:30 X-ray studies of charge stripe dynamics in the nickelates and cuprates*, Tom Devereaux*
3. 9:30-10:00 Tunable bad metal behavior and quantum criticality in the rare earth nickelates*, Susanne Stemmer*
4. 10:00-10:30 Noncollinear Magnetism in Oxide Superlattices, *Anand Bhattacharya*

10:30-11:00 Coffee break

VO2

Session Chair: Anand Bhattacharya

1. 11:00-11:30 New Insight into the Metal-Insulator Transition in VO2 from X-Ray Spectroscopy and Microscopy, *Kevin Smith*
2. 11:30-12:00 Microstructure, Anharmonic phonons and thermodynamics near the metal-insulator transition in VO2, *John Budai*

Multiferroics I

Session Chair: Anand Bhattacharya

1. 12:00-12:30 Observation of multipole helix-chiral domains in magnetoelectrics by resonant x-ray scattering, *Tsuyoshi Kimura*

7:00-9:00 Evening session (TBD)

**Tuesday, June 9, 2015**

8:00-8:30 Breakfast

Iridates I

Session Chair: Dan Dessau

1. 8:30-9:00 Metal-insulator transitions in Iridates: Carrier substitution at the weak limit of the Mott state, *Stephen Wilson*
2. 9:00-9:30 Dimer phases of orbitally degenerate magnets, *George Jackeli*
3. 9:30-10:00 Spin-orbit effect in iridates, *Gang Cao*
4. 10:00-10:30 Electronic structure of the electron and hole doped J½ Mott insulating state,

*Dan Dessau*

10:30-11:00 Coffee break

Iridates II

Session Chair: Gang Cao

1. 11:00-11:30 Raman active electronic excitations in Sr2IrO4, *Dmitry Reznik*
2. 11:30-12:00 Insights into the electronic and magnetic structure of iridates from Resonant Inelastic X-ray Scattering and Quantum Chemistry calculations,

*Jeroen Van den Brink*

**7:00 No Host Dinner at Rustico Ristorante ($50 per person)**

**Wednesday, June 10, 2015**

8:00-8:30 Breakfast

Molybdates and Osmates I

Session Chair: Pat Woodward

1. 8:30-9:00 Ordering and Spin Gaps in Cubic Double Perovskites, *Bruce Gaulin*
2. 9:00-9:30 Designing Emergent Phenomena in Frustrated Magnets, *Tyrel McQueen*
3. 9:30-10:00 Van der Waals Magnets, *David Mandrus*
4. 10:00-10:30 Reduced moment magnetic order and large spin gaps in Sr2TOsO6 (T=Sc, Cr,Fe, and Co) double perovskites, *Andy Christianson*

10:30-11:00 Coffee break

Molybdates and Osmates II

Session Chair: Bruce Gaulin

1. 11:00-11:30 Excitations and enhanced coupling through the magnetic MITs in NaOsO3 and Cd2Os2O7, *Stuart Calder*
2. 11:30-12:00 Competing Superexchange Interactions in Osmate Double Perovskites, *Pat Woodward*
3. 12:00-12:30 Frustration in square lattice of Jeff=1/2 moments at high pressure, *Daniel Haskel*

6:00-9:00 TSRC Picnic , Telluride Elementary School, 447 West Columbia Avenue, Telluride, CO

**Thursday, June 11, 2015 (6 talks)**

8:00-8:30 Breakfast

Multiferroics II

Session Chair: Randy Fishman

1. 8:30-9:00 Improper multiferroicity in a new molecule-based magnet, *Laurent Chapon*
2. 9:00-9:30 Spin dynamics of multiferroic materials studied by neutron scattering, *Jaime Fernandez-Baca*
3. 9:30-10:00 Correlated defects in the Kagome spin liquid Herbertsmithite, *Mike Norman*
4. 10:00-10:30 Hybrid improper ferroelectricity, *Sang Cheong*

10:30-11:00 Coffee break

Multiferroics III

Session Chair: Laurent Chapon

1. 11:00-11:30 Insights to multiferroic mechanisms from high magnetic fields, *Vivien Zapf*
2. 11:30-12:00 The Optical Diode Effect in BiFeO3, *Randy Fishman*

7:00-9:00 Evening discussion topic Iridates, Discussion Leaders *Jeroen Van den Brink* and *George Jackeli*

**Friday, June 12, 2015**

8:00-8:30 Breakfast

Cobaltites, Manganites, and other 3d Systems I

Session Chair: James Rondinelli

1. 8:30-9:00 Structural approaches for altering electronic and magnetic properties at manganite interfaces, *Steve May*
2. 9:00-9:30 Impacts of substrate phase transformations on transport in ultra-thin perovskite oxide films, *Chris Leighton*
3. 9:30-10:00 Orbitals-2015, *Daniel Khomskii*

10:30-11:00 Break

Cobaltites, Manganites, and other 3d Systems II

Session Chair: Steve May

1. 11:00-11:30 From static to dynamic control over electronic band structures in complex oxides, *James Rondinelli*
2. 11:30-12:00 Curent induced spin reorientation in bilayer manganites, *Stuart Wilkins*
3. 12:00-12:30 Searching for the Kitaev Spin Liquid, *John Mitchell*