



# Condensed Matter Theory Center Fall 2010 Symposium

November 2-4, 2010  
2205 Physics Building

## November 2, 2010

### COLD ATOMS

#### 10:00 AM-12:00 PM

Stephen Powell, "*Hofstadter spectrum of interacting lattice bosons*"

Ryan Barnett, "*Quantum dynamics in ferromagnetic and antiferromagnetic condensates*"

Hoi Yin Hui, "*Exact rotor mappings of many particle bosonic systems*"

#### 12:00 PM-1:00 PM Lunch Break

#### 1:00 PM-3:00 PM

Jason Kestner, "*A prediction of a novel topological 'Haldane liquid' phase of ultracold polar molecules in a 1D lattice*"

Bin Wang, "*Bose-Fermi solid and its quantum melting in a one-dimensional optical lattice*"

Qi Zhou, "*Inter-band coupling induced novel condensates in a double-well lattice*"

## November 3, 2010

### QUANTUM COMPUTATION

#### 10:00 AM-12:00 PM

Jay Sau, "*Topological superconductivity and Majorana Fermions at semiconductor/superconductor interfaces*"

Chien-Hung Lin, "*Majorana fermions in nanowires without gating superconductors*"

Shuo Yang, "*Numerical simulations and stability diagrams of the real quantum dots systems*"

Sunny Wang, "*Hubbard model description of charge stability diagram for semiconductor double dots*"

#### 12:00 PM-1:00 PM Lunch Break

#### 1:00 PM-3:00 PM

Eddy Barnes, "*Decoherence of an electron spin qubit in a nuclear spin bath*"

Nga Nguyen, "*The effect of an impurity on the energy spectrum of two-electron quantum dots*"

Qiuzi Li, "*Anisotropic surface transport in topological insulators in proximity to a helical spin density wave*"

## November 4, 2010

### GRAPHENE

#### 10:00 AM-12:00 PM

Euyheon Hwang, "*Electron-phonon interaction in graphene*"

Hongki Min, "*Electronic structure of multilayer graphene and its applications*"

David Abergel, "*The compressibility of graphenes and the effect of disorder*"

#### 12:00 PM-1:00 PM Lunch Break