



SYMPOSIUM PROGRAM

Thursday, April 6: The Globe Auditorium (110 S Woodward Ave)

Morning Session

Chair: Stephen Hill, FSU Physics/NHMFL

- 9:00 – 9:05 AM **Opening Remarks**
- 9:05 – 9:45 AM Michael McGuire, ORNL
Chemical control of ground states in correlated quantum materials
- 9:45 – 10:15 AM Ryan Baumbach, NHMFL
Clarifying the electronic phase space for U-based materials with the ThCr_2Si_2 -type structure
- 10:15 – 10:35 AM **Coffee Break**
- 10:35 – 11:05 AM Vladimir Dobrosavljevic, FSU Physics and NHMFL
Quantum critical phase of FeO spans conditions of Earth's lower mantle
- 11:05 – 11:45 AM Daniel Santavicca, UNF Physics
Applications of high-kinetic-inductance superconducting nanowires in quantum information science and engineering
- 11:45 – 1:15 PM **Lunch and Posters** (SSB 208 & 218)

Afternoon Session

Chair: Michael Shatruk, FSU Chemistry

- 1:15 – 1:30 PM **Remarks by President Rick McCullough**
- 1:30 – 2:00 PM Eugene DePrince, FSU Chemistry
Generalizing electronic structure theory to describe molecular polaritons
- 2:00 – 2:30 PM Peng Xiong, FSU Physics
Spin selective transport in chiral molecular junctions on semiconductors
- 2:30 – 3:00 PM Dragana Popovic, NHMFL
Quantum complex matter: interplay of orders in cuprate superconductors
- 3:00 – 3:30 PM Luis Balicas, NHMFL
Evidence for interlayer Moiré excitons in metal monochalcogenide heterostructures
- 3:30 – 3:50 PM **Coffee Break**
- 4:00 – 5:00 PM **Tour of the Maglab (for non-FSU participants)**



Friday, April 7: The Kroto Auditorium (1003 CSL Building)

Morning Session

Chair: Peng Xiong, FSU Physics

- 9:00 – 9:10 AM **Remarks by VP for Research Stacey Patterson**
- 9:10 – 9:50 AM Wilson Ho, UC Irvine Physics
A quantum microscope for quantum sensing
- 9:50 – 10:20 AM Brajesh Gupt, Amazon (Virtual)
Quantum computing with AWS Braket
- 10:20 – 10:40 AM **Coffee Break**
- 10:40 – 11:10 AM Guangxin Ni, FSU Physics and NHMFL
Nano-light imaging of quantum materials
- 11:10 – 11:50 AM Eric Holland, Keysight
An overview of industry perspectives on training for quantum technologies
- 11:50 – 1:10 PM **Lunch and Posters** (CSL Lobby)

Afternoon Session

Chair: Eugene DePrince, FSU Chemistry

- 1:10 – 1:50 PM Martin Mourigal, Georgia Tech Physics
Quantum ground-states and excitations of magnetic matter — from neutron scattering to quantum information
- 1:50 – 2:20 PM Irinel Chiorescu, FSU Physics and NHMFL
Study of spin-cavity states and methods to mitigate decoherence effects on quantum dynamics
- 2:20 – 3:00 PM Eric Hudson, UCLA Physics
Winter-proofing quantum science and technology
- 3:00 – 3:40 PM Hai-Ping Cheng, UF Physics
Magnetolectric coupling and toroidal moments in magnetic molecules and crystals
- 3:40 – 4:00 PM **Coffee Break**
- 4:00 – 5:00 PM **Roundtable Discussion on Prospects of Research and Education in Quantum Science and Engineering** (CSL 1005)
- 5:00 – 6:00 PM **Poster Session** (CSL Lobby)



Saturday, April 8: The Kroto Auditorium (1003 CSL Building)

Morning Session

Chair: Irinel Chiorescu, FSU Physics/NHMFL

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| 9:00 – 9:40 PM | Vivien Zapf, LANL
<i>Magnetic approaches to quantum information</i> |
| 9:40 – 10:20 AM | Nicholas Bonesteel, FSU Physics
<i>Interlayer Pairing of Composite Fermions</i> |
| 10:20 – 10:50 AM | Kevin Fosse, FSU Physics
<i>Quantum computing and nuclear theory</i> |
| 10:50 – 11:10 AM | Coffee Break |
| 11:10 – 11:40 AM | Xiuwen Liu, FSU Computer Science
<i>Understanding and distilling deep learning models via hybrid quantum computing</i> |
| 11:40 – 12:10 AM | Hitesh Changlani, FSU Physics and NHMFL
<i>Intermediate temperature Hubbard physics in Moiré materials</i> |
| 12:10 – 12:40 PM | Wan Kyu Park, NHMFL
<i>Tunneling spectroscopic studies of topological Kondo insulators</i> |
| 12:40 – 1:05 PM | Michael Shatruk, FSU Chemistry
<i>How to tune your quantum clock</i> |
| 1:05 – 1:10 PM | Closing Remarks |



POSTERS

- 01** Milo Adams, FSU Chemistry
Tuning properties of kagomé ferromagnet Fe_3Sn_2 by electron and hole doping
- 02** Yuwaraj Adhikari, FSU Physics
Spin transport in chiral molecular semiconductor devices
- 03** Sumit Bera, Jackson State University
High energy-density energy storage devices thin film capacitors based on PVDF and MoS_2 nanofiller composites
- 04** Jonathan Casamayor, FSU Electrical and Computer Engineering
Novel microwave frequency discrimination circuits for superconducting qubits
- 05** Wei-Hao Chou, FSU Physics / NHMFL
Giant Magnetic Anisotropy in a Trigonal Ni(II) Complex
- 06** Keke Feng, FSU Physics / NHMFL
Magnetic ordering in $GdAuAl_4Ge_2$: layered compounds with triangular lanthanide nets
- 07** Miguel Gakiya Teruya, FSU Chemistry
Robert Stewart, FSU Physics / NHMFL
54 GHz clock transition in a pseudo- D_{4d} Ho(III) molecular complex
- 08** Brittany Grimm, FSU Physics / NHMFL
Investigation of the spin-crossover transition in a metalorganic Mn^{3+} complex with continuous-wave high-field powder EPR spectroscopy
- 09** Clemente Guzman, FSU Physics / NHMFL
Optimization and preliminary results on combining a SQUID and a resonator for sensitive spin detection
- 10** Jakub Hruby, FSU Physics / NHMFL
Tunable clock transitions in lanthanide complexes for quantum information technologies
- 11** Zhenqi Hua, FSU Physics
Intrinsic ion migraines dynamics in a one-dimensional organic metal halide hybrid
- 12** Toshiaki Kanai, FSU Physics / NHMFL
Formation of ring-shaped electron charge qubit on solid neon for quantum computing
- 13** Marcus Liebenthal, FSU Chemistry
Ab initio quantum electrodynamics with equation-of-motion coupled cluster theory
- 14** Lexington Mandachi, FSU Physics/NHMFL
Understanding quantum spin behavior in low and high anisotropy materials using QuTip
- 15** Basanta Pahari, FAMU Mech.Engineering
Quantum search algorithms based on smooth operators
- 16** Nihar Pradhan, Jackson State University
Insulator-to-metal phase transition in a few-layered $MoSe_2$ field effect transistor
- 17** Aikaterini Savvidou, FSU Physics / NHMFL
Anisotropic positive linear and sub-linear magnetoresistivity in the cubic Dirac type-II metal Pd_3In_7
- 18** Manoj Subramanya, FSU Physics / NHMFL
Spin population transfer in a Gd^{3+} molecular crystal
- 19** Rukshan Thantirige, Jackson State University
Enhancing dielectric properties of polymers through 2D quantum material integration