



Telluride Science Research Center

**Organizers:** Ferdinand Evers, Michael Thoss, and Latha Venkataraman

**TSRC Hosts:** Mark Kozak 970-708-4426

**Location:** Virtual meeting

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00 am					
7:30 am	Meet and greet				
8:00 am	Opening	G. Solomon 8:00-8:40	J. Repp 8:00-8:40	J. van Ruitenbeek 8:00-8:40	U. Peskin 8:00-8:40
8:30 am	R. Berndt 8:10-8:50	P. Jelinek 8:40-9:20	E. Scheer 8:40-9:20	M. Thoss 8:40-9:20	F. Evers 8:40-9:20
9:00 am	K. Franke 8:50-9:30	L. Venkataraman 9:20-10:00	Break	L. Gerhard 9:20-10:00	O. Tal 9:20-10:00
9:30 am	T. Frederiksen 9:30-10:10	Break	E. Rabani 9:50-10:30	Break	Break
10:00 am	Break	M. Brandbyge 10:30-11:10	J. Cao 10:30-11:10	T. Berkelbach 10:30-11:10	C. Stafford 10:30-11:10
10:30 am	M. Galperin 10:40-11:20	D. Segal 11:10-11:50	J. Subotnik 11:10-11:50	D. Natelson 11:10-11:50	P. Reddy 11:10-11:50
11:00 am	M. Hybertsen 11:20-12:00	Break			
11:30 am		Poster session 12:00-13:30			
12:00 am					
12:30 am					
1:00 pm					
1:30 pm					
2:00 pm					

All times are Telluride time (Mountain Daylight Time)

Daily starting time of workshop in different time zones:

San Francisco	Telluride	NYC	Berlin	Tel Aviv	Tokyo
7:00	8:00	10:00	16:00	17:00	23:00

## Monday

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7:30–8:00 Meet and greet

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Chair: Latha Venkataraman

8:00–8:10 Opening

8:10–8:50 Richard Berndt Spins in molecules at surfaces: Molecular interactions, switching, current shot noise

8:50–9:30 Katharina Franke Interfering tunneling paths through magnetic molecules on superconductors: Asymmetries of Kondo and Yu-Shiba-Rusinov resonances

9:30–10:10 Thomas Frederiksen Spin physics in graphene nanostructures

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10:10–10:40 Break

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10:40–11:20 Michael Galperin Dynamics and thermodynamics of single molecule junctions: A Green's function perspective

11:20–12:00 Mark Hybertsen Machine learning in our research: Whence and whither

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## Tuesday

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Chair: Jan van Ruitenbeek

8:00–8:40 Gemma Solomon Conductance beyond histograms: Econometrics meets molecular conductance traces

8:40–9:20 Pavel Jelinek Topological phase transition in pi-conjugated carbon polymers driven by pseudo Jahn-Teller effect

9:20–10:00 Latha Venkataraman Towards 1D Topological Insulators

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10:00–10:30 Break

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10:30–11:10 Mads Brandbyge Point contacts from a theory point of view

11:10–11:50 Dvira Segal Theory of the 1/f noise in atomic-scale junctions

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11:50–12:00 Break

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12:00–13:30 Poster session

Yaling Ke Studying current-induced chemical reactions in single-molecule junctions

Parth Kumar On the first law of thermodynamics in open quantum systems

Liang Li Highly conducting single molecule topological insulators based on mono- and di-radical cations

Gautam Mitra Electronic transport through single-molecule oligophenyl-diethynyl junctions with direct gold-carbon bonds formed at low temperature

Angela Paoletta Electroluminescence from gold tunnel junctions

Samuel Rudge Coherent time-dependent oscillations and temporal correlations in charge transport through molecular junctions

Sanghita Sengupta Effect of hyperfine interaction on spin decoherence lifetime in 7-armchair graphene nanoribbons

Caleb Webb Entropy evolution in a non-stationary quantum ensemble

Yunxuan Zhu Time-correlated single-photon counting of plasmonic light emission

## Wednesday

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Chair: Thomas Frederiksen

8:00–8:40 Jascha Repp Probing excited-state lifetimes by means of pump-probe atomic force microscopy

8:40–9:20 Elke Scheer Non-monotonic temperature dependence of the thermopower of gold atomic-size contacts

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9:20–9:50

Break

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9:50–10:30 Eran Rabani Signatures of a localizable bath in out-of-equilibrium centrally coupled systems

10:30–11:10 Jianshu Cao Quantum transport beyond weak system-bath coupling

11:10–11:50 Joseph Subotnik Dynamics at interfaces with spin: Is Berry force everywhere?

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## Thursday

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Chair: Katharina Franke

8:00–8:40 Jan van Ruitenbeek Current-induced one-dimensional diffusion of Co ad-atoms on graphene nanoribbons

8:40–9:20 Michael Thoss Current-induced bond rupture in molecular junctions

9:20–10:00 Lukas Gerhard Self-decoupled molecules in the STM junction: Rotation and light emission

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10:00–10:30 Break

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10:30–11:10 Timothy Berkelbach Dynamics of electrons coupled to anharmonic phonons

11:10–11:50 Douglas Natelson Light emission from atomic-scale plasmonic junctions

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## Friday

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Chair: Mark Hybertsen

8:00–8:40 Uri Peskin Towards mechanical stabilization of single molecule junctions

8:40–9:20 Ferdinand Evers On circulating currents of energy, entropy and heat

9:20–10:00 Oren Tal Magnetic control over chemical bonds in molecular junctions

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10:00–10:30 Break

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10:30–11:10 Charles Stafford Entropy, work, and internal energy in open quantum systems

11:10–11:50 Pramod Reddy Charge and energy transport in molecular junctions and nanoparticle arrays

11:50–12:00 Closure

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