



## ICAM Energy Transport Workshop 2015

University of Colorado Boulder

December 14-16, 2015

Location: MacAllister Research Center, 4001 Discovery Drive ([East Campus](#))  
Main Conference Room, 1<sup>st</sup> Floor

Website: <http://www.colorado.edu/rasei/2015/12/03/icam-energy-transport-workshop-boulder-2015>

### Agenda

– Revised due to campus snow closure on the 15<sup>th</sup> –

Monday, December 14

#### Session 1: Transport in Nanoscale Systems

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| 8:30 - 8:55 am   | Morning Reception   |
| 8:55 - 9:00 am   | <b>Sean Shaheen, University of Colorado Boulder</b><br><i>Workshop welcome and opening remarks</i>  |
| 9:00 - 10:00 am  | <b>Arthur Nozik, University of Colorado Boulder</b><br><i>Energy Transfer Versus Charge Transfer in Solar Photon Conversion</i>                               |
| 10:00 - 11:00 am | <b>Prashant Nagpal, University of Colorado Boulder</b><br><i>Energy Transport in Nanomaterials for Photon Upconversion and Long-Range Exciton Transport</i>   |
| 11:00 am - noon  | <b>Matthew Beard, National Renewable Energy Laboratory</b><br><i>Transport Studies in Quantum Systems (Films and Solar Cells)</i>                             |
| Noon - 1:15 pm   | Lunch & Poster Session  |
| 1:15 - 2:15 pm   | <b>Mark Siemens, University of Denver</b><br><i>2D Electronic Coherent Spectroscopy: Basics and Applications in Measuring Exciton and Phonon Interactions</i> |
| 2:15 - 3:15 pm   | <b>Mark Lusk, Colorado School of Mines</b><br><i>Control of Exciton Wave Packets Using Quantum Interference</i>   |
| 3:15 - 4:15 pm   | <i>Breakout Discussions: Harnessing Quantum Mechanics in Nanoscale Phenomena</i>  |
| 4:45 - 7:45 pm   | (Invited speakers) RASEI End of Year Party, Koenig Alumni Center ( <a href="#">map</a> )  |
| 7:45 pm -        | Dinner on own   |

## Wednesday, December 16

### Morning Session

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- 8:00 - 8:30 am Morning Reception
- 8:30 - 9:10 am **Johannes Schachenmayer, University of Colorado Boulder**  
*Cavity and Vacuum Field Effects on Exciton and Charge Transport in Organic Semiconductors*
- 9:10 - 10:50 am **Semion Saikin, Harvard University**  
*Excitation Dynamics in Natural Photosynthetic Complexes and Hybrid Structures*
- 10:50 - 11:00 am Coffee Break
- 11:00 - 11:40 am **Dmitry Matyushov, Arizona State University**  
*Efficiency of Energy Transport in Biology's Energy Chains*
- 11:40 a - 12:20 pm **Yang Yang, Northwestern University**  
*Small Vulnerable Sets Determine Large Network Cascades*
- 12:20 - 1:00 pm Lunch & Poster Session

### Afternoon Session

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- 1:00 - 1:40 pm **Baskar Ganapathysubramanian, Iowa State University (via Skype)**  
*Process-Structure-Property Exploration Using Model- and Data- Reduction*
- 1:40 - 2:20 pm **Nikos Kopidakis, National Renewable Energy Laboratory**  
*Charge Transport in Polymer Fullerene Bulk Heterojunctions*
- 2:20 - 2:30 pm Coffee Break
- 2:30 - 3:10 pm **Barbara Demmig-Adams and William Adams, University of Colorado Boulder**  
*Maximizing the Conversion of Photons to Electrons in Algae and Plants*
- 3:10 - 3:50 pm **Juan Restrepo, University of Colorado Boulder**  
*Adaptive Neuronal Networks Stabilized by Resource Transportation Over a Secondary Network*
- 3:50 - 4:00 pm Coffee Break
- 4:00 - 4:45 pm *Breakout Discussions: Grand Challenges for Transport in Complex, Heterogeneous Systems Across Many Length Scales*
- 4:45 - 5:00 pm Closing remarks and feedback
- 7:00 pm - **Workshop dinner at [Carelli's](#), 645 30<sup>th</sup> St., Boulder**