

ISTeC (Information Science and Technology Center) Research Advisory Committee
 Retreat on the Scientific and Engineering Foundations of Information Science and
 Technology
 Saturday, May 8, 8:15am to 3:00pm, Lory Student Center

DOSSIER

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Research Interests (one paragraph):	
Coherent control and automated discovery of physical phenomenon, nonlinear optics, non-time-stationary optics, ultrafast optics, imaging and interferometry	
Titles of current research projects (funded or not):	
EUV Interferometry EUV imaging with High Harmonic Radiation Nonlinear Optics (and Nano-surface imaging) in the EUV Ultrafast rainbow: using molecular coherences for manipulating ultrafast light pulses Ultra-stable mid-IR generation for bimolecular spectroscopy and control	
Current collaborations inside and outside your department:	
Inside: Jorge Rocca, Carmen Menoni	
Outside: Fiorenzo Omenneto (Physics, LANL), Mark Baertschey (Physics, Univ. of Colorado – Denver), Jonathan Knight (Physics, Bath, UK), Herschel Rabitz, (Chemistry, Princeton), Ivan Christov (Physics, Univ. of Sofia, Bulgaria), Margaret Murnane & Henry Kapteyn (Physics, Univ. of Colorado -- Boulder)	
Breakout sessions you would like to attend at the retreat (please rank order from 1 to 3):	
	Alternative models of computing
1	Computing and information processing in support of basic science and engineering
	Dense sensor networks
3	Imaging and tracking
	Automatic image, text, and speech recognition for multimodal interfaces and search engines
2	Other (Please suggest a title.) Adaptive

integration of measured data and predictive (or descriptive) modeling.

New approaches to the integration of data acquisition and processing or model development. The idea here would be to develop an approach to allow algorithms that are processing, using data for predictions, or developing models of physical phenomenon to automatically adjust the experiments data acquisition to tailor data acquisition to optimally solve a problem. This could be a database search, a pattern recognizer (e.g., DNA sequences, or automatic image recognition), predictive models (e.g., weather forecasting), or a Hamiltonian factory (e.g., automated experiments to understand a physical system).

Faculty at CSU whom you would like to see included into your preferred breakout group:

One optional paragraph you would like other participants to read before the retreat: