



SYRACUSE UNIVERSITY

The College of Arts and Sciences

Department of Physics

SU PHYSICS NEWS – AUGUST 2011

Presentations by faculty:

- **Marina Artuso:** invited review talk “Heavy flavors at the LHC”, August 2011 Meeting of the Division of Particles and Fields of the American Physical Society, Brown University, Rhode Island.
- **Mark Bowick:** invited talk, “Facets of Order”, *2011 Soft Condensed Matter Physics Gordon Research Conference*, Colby-Sawyer College, New London, New Hampshire (August 16, 2011).
- **Kenneth Foster:**
 - invited speaker: “Cilia and Cell Motion” at *Lorentz Center Workshop on Fluctuations and Response in Active Materials: From Driven Granular Systems to Swarming Bacteria*. Leiden, The Netherlands (June 20 – 24, 2011).
 - seminars: “How Visual Detectors Detect Light”
 - Faculty of Engineering, Burapha University, Cholburi, Thailand (August 4, 2011).
 - Faculty of Engineering, Kasetsart University, Bangkok, Thailand (August 5, 2011).
 - Faculty of Science, King Monkut University of Technology Thonburi, Thailand (August 11, 2011).
 - invited lectures:
 - “Nonlinear dynamics of biological cell signal processing” King Monkut University of Technology Thonburi, Thailand (August 8, 2011).
 - “Nonlinear dynamics of global warming and its consequences” King Monkut University of Technology Thonburi, Thailand (Aug 10, 2011).
 - visiting professor: Taught a 3-credit one semester course, Biological Physics (PHY580/PHY781), for graduate students in Physics and Bioengineering at King Monkut University of Technology Thonburi (KMUTT), Thailand. This teaching was a pioneer project to help the Faculty of Science start up an international program and to promote an exchange program between SU and KMUTT (June 27 – August 17, 2011).

- **Cristina Marchetti:** invited to participate in the panel “How to Successfully Navigate through Career Transitions” at the 2011 Gordon-Kenan Research Seminar, Colby-Sawyer College, New London, NH (August 13-14, 2011).
http://www.grc.org/programs.aspx?year=2011&program=grs_soft
- **Liviu Movileanu:** invited talk, *2011 Nanoelectronic Devices for Defense & Security (Nano-DDS) Conference*, Polytechnic Institute of New York University, Brooklyn, NY (August 30, 2011).
- **Eric Schiff:** invited talk, “Plasmonics and light-trapping in thin-film solar cells”, **SPIE Optics and Photonics Conference**, San Diego (August 21, 2011).
- **Sheldon Stone:** invited plenary talk, “Heavy Flavor Physics”, *2011 Meeting of the Division of Particles and Fields of American Physical Society* (see <http://www.hep.brown.edu/~DPF2011/>), (August 13, 2011). The link to the talk is <http://indico.cern.ch/materialDisplay.py?contribId=46&sessionId=1&materialId=slides&confId=129980>
- **Scott Watson:** invited plenary speaker “UV Sensitivity of Dark Matter”, *String Phenomenology 2011*, Madison, Wisconsin.

New Grants and Awards:

- **Stefan Ballmer:** NSF grant, “Searching for a Stochastic Background, aLIGO Rare Transient Monitoring and Optical Mirror Trapping”, in the amount of \$450,000 over three years.

Participation in Advisory and Review Boards:

- **Peter Couvares** was invited to serve on the NSF Cyberinfrastructure Software Advisory Working Group examining how NSF-funded software is currently used by the scientific community, to inform NSF software sustainability efforts and future investments.
- **Liviu Movileanu:** a member of the Editorial Board of the International Scholarly Research Network (ISRN) Biomathematics (2011-);
<http://www.hindawi.com/isrn/biomathematics/>

Other:

- **Steven Blusk:** celebrated 10 years at SU – his “seniority date” is 8/16/01.
- **Cristina Marchetti :** chaired (with co-chair Heinrich Jaeger of the University of Chicago) the 2011 Soft Condensed Matter Physics Gordon Conference: Soft Matter Far from Equilibrium, held at Colby-Sawyer College, New London, NH, August 14-19, 2011
<http://www.grc.org/programs.aspx?year=2011&program=softcon> .
- **Liviu Movileanu:** collaborative research program between Tohoku University (Prof. Makoto Ohta) and Syracuse University (Movileanu lab) is now extended for the next academic year. The funds, provided by the Japanese government, will support the visit of one Japanese Postdoctoral Fellow at Syracuse for one year (March 2012-February 2013) and other short-term, exchange visits between both groups.
- **The Movileanu Lab:** Belete R. Cheneke’s paper “Analysis of gating transitions among the three major open states of the OpdK channel” is now featured by NewsRx (Atlanta,

GA) – World’s Largest Source of Health News, “Data on Biochemistry Described by Researchers at Syracuse University,” (July 19th, 2011).

- **Britton Plourde:**
 - served on the 2011 graduate student fellowship award committee for the IEEE Council on Superconductivity.
 - invited to join the New York State Superconductor Technology Summit 2011 in Schenectady, NY on Aug. 5 where he served as the moderator for a panel discussion on Research and Trends in the Development of Superconductivity.
- **Scott Watson:** official visitor at DAMTP, Cambridge University, England, for the month of August.
- **Kenneth Foster:** In the News:
 - <http://physicsworld.com/cws/article/news/46479>
 - <http://www.sciencedaily.com/releases/2011/06/110623130137.htm>
 - http://asnews.syr.edu/newsevents_current/News/Foster_vision_research.html
 - **Work “Photoactivation of rhodopsins” on the cover of Chemistry and Biology, 18 (6) June 24, 2011.**
 - In visual photoreceptors when a photon is absorbed by its chromophore or light absorbing molecule the existing electric dipole transiently flips in direction. Given a field strength of 10^9 volts/meter, this flipping causes the neighboring highly polarizable amino-acid residues and H-bonds to flip or change thus triggering vision. Complete blocking of isomerization or change in shape of the chromophore does not decrease visual sensitivity. These results overturn the popular hypothesis that it was the isomerization that triggered vision as proposed by George Wald’s group in the 1950s.