



SUMMER SCHOOL

Light in Science, Light in Life - LiSci 2015

Tequisquiapan, Querétaro, México | August 17th to 21st, 2015

Preliminary Program

	Monday 17	Tuesday 18	Wednesday 19	Thursday 20	Friday 21
8:00 - 8:30	Registration	Registration	Registration	Registration	Registration
8:30 - 9:15	Opening Lecture: Paras Prasad	J. Eduardo Lugo	J. Eduardo Lugo		Fernando Ramírez -Martínez
9:15 - 10:00	Opening Lecture: Paras Prasad	Romain Quidant	Romain Quidant	Daniel Malacara	Luiz Davidovich
10:00 - 10:45	Michael Berry	Michael Berry	Etienne Brasselet	Etienne Brasselet	Julio C. Gutiérrez-Vega
10:45 - 11:15	Coffe break	Coffe break	Coffe break	Coffe break	Coffe break
11:15 - 12:00	Carlos Bustamante	Carlos Bustamante	Govind Agrawal	Govind Agrawal	Eugenio Méndez
12:00 - 12:45	Kishan Dholakia	Kishan Dholakia	Excursion	Rocío Jauregui	Juan P. Torres
13:00 - 15:00	Lunch break	Lunch break	Excursion Lunch	Lunch break	Closure & Lunch
15:00 - 15:45	Oscar E. Martínez	Oscar E. Martínez	Excursion	Luiz Davidovich	
15:45 - 16:30	Monika Ritsch-Marte	Monika Ritsch-Marte	Excursion	Julio C. Gutiérrez-Vega	
16:30 - 17:00	Coffe break	Coffe break	Coffe break	Coffe break	
17:00 - 17:45	Halina Rubisztein- Dunlop	Halina Rubisztein- Dunlop		Juan P. Torres	
17:45 - 18:30	Pablo Loza-Álvarez	Pablo Loza-Álvarez		Eugenio Méndez	
18:30 - 19:30	Break	Break		Break	
19:30 - 21:30	Poster session 1M (snacks & drinks)	Poster session 2T (snacks & drinks)	LiSci 2015 Dinner Party	Poster session 3Th (snacks & drinks)	

* First lectures

* Second lectures



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Lectures

Monday • Optics in Nature, Biophotonics and Optical Trapping

- **Prof. Paras Prasad**
General overview and emerging opportunities in Nanophotonics and Biophotonics / Opening Lecture
- **Prof. Sir Michael V. Berry**
Nature's optics and our understanding of Light / Part I
- **Prof. Carlos Bustamante**
Mechanisms of Cellular Proteostasis: Insights from Single Molecule Studies
- **Prof. Kishan Dholakia**
Basics of optical trapping and beam zapping
- **Prof. Oscar E. Martínez**
Microscopy Imaging in 3D / Part I
- **Prof. Monika Ritsch-Marte**
Wavefront-shaping techniques for optical trapping and imaging / Part I
- **Prof. Halina Rubinsztein-Dunlop**
Catch, move and twist using optical tweezers / Part I
- **Prof. Pablo Loza-Alvarez**
Strategies in light sheet microscopy for fast imaging of biological samples / Part I

Tuesday • Optics in Nature, Biophotonics and Optical Trapping

- **Prof. J. Eduardo Lugo**
Photonic applications by example: from photonic crystals, brain spectroscopy to muscle contractions / Part I
- **Prof. Romain Quidant**
Nanoplasmonics and its applications to biosciences
- **Prof. Sir Michael V. Berry**
Nature's optics and our understanding of Light / Part II
- **Prof. Carlos Bustamante**
Division of Labor Among the Subunits of a Highly Coordinated Ring ATPase
- **Prof. Kishan Dholakia**
Advanced optical trapping studies in liquid, air and vacuum
- **Prof. Oscar E. Martínez: Microscopy**
Imaging in 3D / Part II
- **Prof. Monika Ritsch-Marte**
Wavefront-shaping techniques for optical trapping and imaging / Part II
- **Prof. Halina Rubinsztein-Dunlop**
Catch, move and twist using optical tweezers / Part II
- **Prof. Pablo Loza-Alvarez**
Strategies in light sheet microscopy for fast imaging of biological samples / Part II



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Lectures

Wednesday • Optical Trapping, Applied Optics and Photonics

- **Prof. J. Eduardo Lugo**
Photonic applications by example: from photonic crystals, brain spectroscopy to muscle contractions / Part II
- **Prof. Romain Quidant**
Nano-optical manipulation and nano-optomechanics
- **Prof. Etienne Brasselet**
Topological liquid crystal photonics
- **Prof. Govind Agrawal**
Nonlinear Photonics with Optical Waveguides

Thursday • Photonics, Quantum Optics, Ultracold Matter and Classical Optics

- **Prof. Daniel Malacara-Hernández**
The International Year of Light: Why?
- **Prof. Etienne Brasselet**
Liquid crystals as a test-bed for chiral optomechanics
- **Prof. Govind Agrawal**
Highly Nonlinear Fibers and their Applications
- **Prof. Rocío Jauregui**
Light for control and manipulation of atomic systems
- **Prof. Luiz Davidovich**
Exploring The Subtleties Of The Quantum World: From Photons To Qubits
- **Prof. Julio C. Gutiérrez-Vega**
Fundamentals of structured light fields
- **Prof. Juan P. Torres**
Information and quantum coherence: everything that can happen does happen
- **Prof. Eugenio Méndez**
Light scattering by particles and rough surfaces / Part I

Friday • Quantum Optics and Classical Optics

- **Prof. Fernando Ramírez-Martínez**
Laser cooling and trapping of atoms: controlling atoms with light
- **Prof. Luiz Davidovich**
From Quantum To Classical: Light, Photons, Entanglement, And Decoherence
- **Prof. Julio C. Gutiérrez-Vega**
Optical applications of fractional calculus
- **Prof. Eugenio Méndez**
Light scattering by particles and rough surfaces / Part II
- **Prof. Juan P. Torres**
Entanglement and Bell's inequalities: Does reality exist?