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NEWS highlights

Brains, Bones, and Microbes

Physics of the Living State seminar series continues on 13 July

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In the 1980s, ICTP founder Abdus Salam grew increasingly interested in the possibility of solving biology questions with physics, which inspired him to expand the centre's involvement in biology-related research. Today, ICTP continues to support a small research section on physics of the living state that studies such topics as biophysics, neurophysics, medical physics, astrobiology, and systems biology. The research, within the Applied Physics section concerns a broad spectrum of questions that are of interest to many people, ranging from practical questions regarding common health issues to philosophical questions regarding the nature of living organisms.

A yearly seminar series, organized by ICTP staff associate Julian Chela-Flores, highlights the research of ICTP associates and other visiting scientists within this diverse area of study, and the 2011 installment is about to begin. It is aimed at a mixed, interdisciplinary group, including members of other ICTP departments and visiting scientists; members of the general public are also encouraged to attend.

The first seminar, which will be held on 13 July, is titled "Computational Neuroanatomy: Lights and Shadows," and features Rafael Rodriguez Rojas, an ICTP Junior Associate from Havana, Cuba. In recent years, whole-brain imaging and modeling techniques have grown increasingly popular, but some methodological concerns still keep them from playing a major role in clinical settings. Rodriguez Rojas will discuss the recent debates within the field regarding how best to implement new technologies in everyday medical practice.



Rafael Rodriguez Rojas will speak on 13 July

The following week, on 19 July, the seminar switches gears to astrobiology. "This field is exciting because it's interdisciplinary," Chela-Flores said. It requires a high level of collaboration between biologists and physicists. Jorge Bueno and Andres Moreno will speak about the new affiliation between their home institution, the Instituto de Astrobiología de Colombia, and NASA. In addition to presenting their research on the microbiology of extreme environments, the speakers will discuss their ongoing endeavors to popularize astrobiology and engage young scientists throughout Latin America.

Another lecture that will appeal to a wide audience takes place on 10 August, when Rita Cassia-Moura will speak about new research into the way bone structure degenerates. Cassia-Moura is a medical doctor and ICTP associate from Pernambuco University in Recife, Brazil. Chela-Flores said this will be "a very exciting seminar" presented by an engaging speaker. Osteoporosis, Chela-Flores noted, "Is a problem of great interest," given that all people contend with bone loss as they age.

Though Physics of the Living State is one of the smallest research areas at the centre, it enriches the ICTP community and "makes the centre of wider interest," said Chela-Flores. Fortunately, in the next four years this area will expand, with an emphasis on systems biology, which will also be the subject of the seminar on 3 August when Armen Poghosyan speaks. Poghosyan is from the International Scientific Educational Centre of the National Academy of Science of the Republic of Armenia.

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