

ISRAEL INSTITUTE FOR ADVANCED STUDIES

Research Group Lecture Series

The Ada Lovelace Bicentenary Lectures on Computability



Lovelace triumphed intellectually despite the rampant sexism of her era. Babbage studied at Cambridge University but Lovelace, as a woman, could not.

Jack Copeland, Eli Dresner and Diane Proudfoot
IIAS fellows and the organizers of the lecture series



Right to left: Eli Dresner, Diane Proudfoot and Jack Copeland

Augusta Ada Lovelace, acclaimed as the world's first computer programmer, was born on December 10, 1815. Daughter of the poet Byron, Ada collaborated with Victorian inventor Charles Babbage, who envisioned steam-age computers built out of cogwheels. She died tragically at the young age of 36. In the series of 15 lectures, held during December and January, an array of international stars of modern computer science are paying homage to Lovelace, including two winners of the Turing Award, **Shafi Goldwasser** and **Michael Rabin**. The lecture series is jointly funded by the IIAS and the Edelstein Center.



Advanced School

Exoplanets

33rd Winter School in Theoretical Physics

Exoplanets were the focus of the 33rd Winter School on Theoretical Physics, which took place December 28, 2015 - January 8, 2016. Exoplanets – planets which are orbiting stars other than our Sun – are at the forefront of astrophysical discoveries. Beginning in the early 1990s and until today, solid evidence for the existence of thousands of such exoplanets have been presented. Their observed properties have revealed a diverse and unexpected population, shedding light about the possibility of life elsewhere in the Universe.

David Stevenson (Caltech) and **Re'em Sari** (The Hebrew University of Jerusalem) directed the school, under the leadership of General Director, **David Gross**, (UCSB KITB, Nobel laureate 2004). They were joined by top researchers from Europe, the US and Israel.

Outreach Lecture

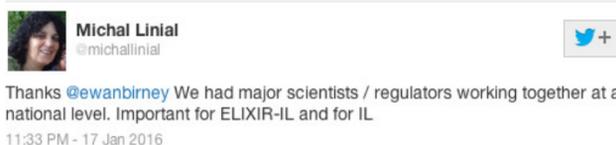


Big Data, Information Infrastructure and Biomedical Research



Ewan Birney and Michal Linial

Ewan Birney, a representative of ELIXIR-EU, talked about new frontiers in human health, medical record sharing and how our genomes effectively become our ID. ELIXIR-IL is a member of this network, together with 17 other European countries.



Advanced School

Computational & Structural Biology

23rd Winter School in Life Sciences

This year's School was led by General Director **Roger Kornberg** (Stanford University, Nobel laureate 2006), together with organizers **Nir Kalisman** and **Julia Shifman** (The Hebrew University of Jerusalem).

Computational Biology and Structural Biology are closely interrelated areas of research. Throughout the years, great advances in experimental techniques resulted in the appearance of multiple structures, including large and complicated molecular machines. At the same time, computer simulations and analyses allowed for a better understanding of macromolecular modes of action. This mutual importance has been recently highlighted by the Nobel Prize in Chemistry given for "the development of multiscale models for complex chemical systems." The School focused on the ongoing synergy between Computational and Structural Biology. It featured a great team of speakers from both fields, including three Nobel laureates.



Nobel laureates: Left to right: Michael Levitt (2014), Ada Yonath (2009) and Roger Kornberg (2006)



Upcoming Events



March 6-18.2016 ~ Human Dignity Intercontinental Academy



April 10-14.2016 ~ EURIAS - NETIAS Network of Institutes of Advanced Study, Fellows & Directors Meeting

IIAS WEBSITE: www.as.huji.ac.il