



**A Batsheva  
Interdisciplinary Workshop  
Jacques Loeb Centre Third Annual  
International Workshop**

# programme

Understanding Scientific Progress  
**Developmental-Genetic  
Explanation of Evolution:  
Reflections on the History  
of Evolutionary Thought and  
Relations with Mechanistic  
Bioscience**

W.A. Minkoff Senate Hall, BGU Marcus  
Family Campus, Beer-Sheva

**8-9 June, 2010**

Further information is available from  
**[travist@bgu.ac.il](mailto:travist@bgu.ac.il)**



**אוניברסיטת בן-גוריון בנגב**  
Ben-Gurion University of the Negev



# programme

**Tuesday, 8 June 2010**

**10:30-10:50**

Welcoming Remarks  
**Jimmy Weinblatt**, Rector, Ben-Gurion  
University of the Negev

**Eviatar Nevo**, Director, International  
Graduate Center of Evolution, University  
of Haifa

**Ute Deichmann**, Director, Jacques Loeb  
Centre, Ben-Gurion University of the  
Negev

**10:50-13:15**

**Michel Morange**, Ecole normale  
supérieure, Paris  
*Evolutionary Developmental Biology: Its  
Roots and its Meaning for an Explanation  
of Evolution*

**Ute Deichmann**, Ben-Gurion University  
of the Negev  
*Early 20th-Century Research at the  
Interfaces of Genetics, Development and  
Evolution: Reflections on Progress and  
Dead Ends*  
Comment: **Smadar ben-Tabou de-Leon**

**Manfred Laubichler**, Arizona State  
University  
*How Developmental Evolution Became a  
Mechanistic Science: From Regulatory to  
Synthetic Experimental Evolution*  
Comment: **Siegfried Roth**

**14:15-16:15**

**Eric Davidson**, California Institute of  
Technology  
*Evolution as Regulatory Systems Biology:  
Why Classical Concepts Cannot Explain  
Evolution of Animal Body Plans*  
Comment: **Manfred Laubichler**

**Michael Levine**, University of California,  
Berkeley  
*Evolution of Gene Regulatory Networks  
in the Drosophila Embryo and Ciona  
Tadpole*  
With an introduction from **Michel  
Morange**

**16:15-16:45**

Coffee break

**16:45-18:15**

**Michael Lässig**, University of Cologne  
*The Arrow of Time in Evolutionary Biology*

**Ulrich Charpa**, Ruhr University Bochum  
*Models of Scientific Change and  
Progress in Biological Research*

**18:30**

Musical Interlude, Reception, and Dinner  
(at the University) for invited speakers



## Wednesday, 9 June 2010

**9:00-10:40**

**Naama Barkai**, Weizmann Institute of Science

*How the BMP Morphogen Gradient is Adjusted with Embryo Size*

Comment: **Siegfried Roth**

**Siegfried Roth**, University of Cologne  
*Mathematics and Biology: Lessons from the Theory of Pattern Formation*

Comment: **Naama Barkai**

**10:40-11:10**

Coffee break

**11:10-12:40**

**Smadar ben-Tabou de-Leon**, California Institute of Technology  
*Cis-Regulation of Foxa, a Key Endodermal Regulatory Gene, as a Guide to Conservation and Change in the Endoderm Specification Network*

**Benny Shilo**, Weizmann Institute of Science

*What Have We Learned from Drosophila about Regulation and Evolution of Receptor Tyrosine Kinase Signalling Pathways?*

Comment: **Dan Mishmar**

**14:00-17:30**

**Douglas Erwin**, Smithsonian Institute, Washington

*Asymmetric Patterns of Originations in the Fossil Record, and Implications for Developmental Mechanisms*

Comment: **Ariel Chipman**

**Ariel Chipman**, Hebrew University of Jerusalem

*The Origin of Segmented Body Plans – When Embryos and Fossils Disagree*

Comment: **Ram Reshev**

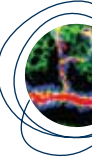
**Dan Mishmar**, Ben-Gurion University of the Negev

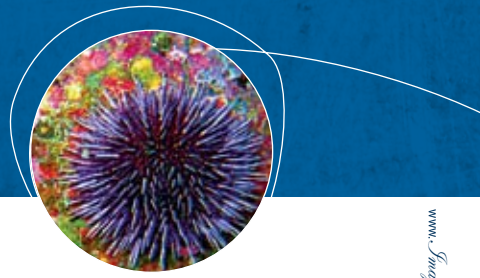
*The Population Genetics within Us – Mitochondrial DNA Variation within Individuals and the Global Human Populations*

Round table discussion on general questions raised during the workshop

**19:00**

Dinner for invited speakers





## **The Jacques Loeb Centre for the History and Philosophy of the Life Sciences,**

inaugurated on 4 March 2008, is engaged in advanced research covering all relevant topics related to the life sciences. The Centre offers post-doctoral and graduate fellowships in the history and philosophy of modern biological, biochemical and medical sciences. It organises bi-weekly seminars and international conferences.

The Centre is named after German-American physiologist Jacques Loeb (1859-1924), legendary experimentalist and seminal thinker in the history of biology, and an example of a scientist deeply influenced by philosophical ideas. It strives to integrate historical and philosophical thought with the natural sciences. We believe that history and philosophy of science should not be separated, with history providing details of scientific developments and philosophy leading to an understanding of science and its progress. Moreover, the interaction between historians and philosophers with scientists is mutually beneficial; many great scientists were (and are) aware of the history of their fields and the concepts that they are working on as well as of philosophical traditions.

The Centre pursues a wide range of investigations into the modern experimental life sciences and serves as an interdisciplinary forum. Research topics include, but are not restricted to: history of concepts and research practices in biology, analysis of scientific progress and dead ends, ethics of research, the influence of politics, various ideologies and religion on the conduct and advancement of science, the nature of the connections between bio-scientists and industry.

The biweekly seminars provide an interdisciplinary forum in which historians and philosophers of science as well as scientists present and discuss new research related to the life sciences. Case studies and surveys examine the impact of political, socio-economic and personal factors on the conduct of science, the ethics of research, and the causes of progress and setbacks in science. Faculty and students from all disciplines are invited to participate.

### **The following international workshops have taken place:**

“Philosophies in Biology” (4-5 March 2008)

“Darwinism and Functional Biology, Other Sciences, and the Humanities” (30 March-1 April 2009)

### **Proceedings from the workshops were published as special editions/sections of:**

*History and Philosophy of the Life Sciences* 30 (2008)

*Journal for General Philosophy of Science* 41 (2010)