

# The Holon Workshop

## “Mathematics & Medicine”

Wednesday, November 24, 2004  
Seminar Room 330/5

- 14:00 – 15:00 **Dr. Rafael Marilus** (Clinical Research—Elmar Ltd)  
*Mathematical Tools in Clinical Research*
- 15:00 – 16:00 **Dr. Ilya Novikov** (Biostatistical Unit, Gertner Institute for  
Epidemiology and Health Policy Researches)  
*Statistical Inferences for Causal Effects in Observational  
Studies*
- 16:00 – 17:00 **Prof. David Aronov** (The Rehabilitation and Secondary  
Prevention Department, The National Research Center  
for Preventive Medicine, Moscow, Russia)  
*Situation with Cardiac Diseases in Russia*

### Abstracts

**Dr. R. Marilus.** The following topics will be presented: development of new drug; steps from the test tube to new drug application review; the various protocol designs and their relative importance in medicine; statistical principles: statistical tests versus statistical effects; the relation among correlation, regression, causality and probability with special attention to confidence intervals; the use of Meta-analysis in clinical research and their clinical-operative significance.

**Dr. I. Novikov.** Common sense traditionally precludes any 'causal inferences' from observational studies. Nevertheless, causal inferences from observational studies are a question of great practical importance. Statisticians, philosophers and economists have tried to develop various approaches to the problem. I will describe some of them, especially one based on 'potential outcomes' (Rubin DB, 1974). Recently it has proved its usefulness in many applied and theoretical works. The talk will concentrate mostly on general principles and biomedical applications.