

## **Novinky v biomedicínském výzkumu / Biomedical Research News**

### **Přednášky předních světových odborníků**

#### **Lectures of international experts in biomedicine**

**Pondělí 7. Listopadu, 2016**

**Monday November 7, 2016**

**Velká zasedací místnost děkanátu 1. LF UK (Na Bojišti 3, Praha 2)**

8:45 Registration for students

9:00 – 10:15

Understanding autoimmunity from the perspective of developmental immunology

Simply due to data only being available at the time of presentation and following diagnosis and therapy, our insights into the cellular and molecular aspects of autoimmune pathologies are based in large part on the consequences, not the drivers, of pathogenesis. Nevertheless, there is a strong association of genetic polymorphisms both in the HLA loci and hundreds of immune-related gene products with autoimmune disease that imply developmental processes instructed by our genome underly disease progression. In this lecture, we will examine some of the new molecular and cellular insights into the early (foetal to juvenile) development of the T lymphocyte repertoire that may help fill in the huge information gap between our increasingly sophisticated knowledge of the genome and the similarly information-rich diagnostic parameters that can be measured once autoimmune phenomena are clinically presented.

10:30 – 11:45

Molecular, biophysical and genetic techniques for dissecting the T lymphocyte development

In our studies, we unashamedly focus on the T lymphocyte. In the first lecture, several of our results (T cell repertoire development, integrin regulation of cell migration, the "catch" bond nature of TCR-MHC interactions and the importance of biomechanical forces in TCR signalling) have all been elucidated using the relatively new techniques of Next Generation Sequencing (NGS), single molecule imaging (dSTORM), biomembrane force probes (BFP), optical "tweezers", and genetic deletion (CRISPR/Cas9). In this lecture, I will provide some brief insights into how these novel techniques have impacted our approaches and provided exquisitely refined information on T lymphocyte development and the relation to autoimmunity described in the first lecture.

11:45 – 12:00

Information on: How it is with the PhD degree at the Harvard Medical School and Dana Faber Cancer Institute, USA?



**Jonathan S. Duke-Cohan**

**Is Principal Associate in Medicine at Harvard Medical School, Principal research Scientist at Dana-Farber Cancer Institute, and Visiting Professor at Charles University. His research focuses on protein interactions which lead to the development, maturation, differentiation and activation of T-lymphocytes in health and disease.**

Přednáškové odpoledne je součástí kurzu „Novinky v biomedicinském výzkumu“, který je jeden z doporučených povinně volitelných kurzů pro Ph.D. studenty oboru Biochemie a patobiochemie (Oborová rada 04) a Fyziologie a patofyziologie člověka (Oborová rada 05). Účastníci na konci kurzu získají zápočet. Kurz je sestaven z přednášek zahraničních a domácích světově uznávaných odborníků zabývajících se molekulovými mechanismy etiologie, patogeneze a terapie chorob. Vítáni jsou i studenti jiných oborů a zájemci z řad vědeckých pracovníků a lékařů.