**Course on Advanced Immunology (spring 2023)**

General description: After the course, the student knows different leukocyte types and other components of innate and adaptive immune system, and is able to describe their interactions and co-operation during the immune defence. The student also understands the key immunological research techniques. The student is familiar with typical inflammatory and other immune-mediated diseases and the principles of therapeutic manipulation of the immune system.

Recommended eligibility: Basic Immunology -course or corresponding previous knowledge on basic concepts of immunology.

Course description: Lectures by immunology experts (15 lectures, 60 min. each)

ECTS points to be earned: Attendance at lectures required. For 2 ECTS points, attendance at ≥14 lectures is mandatory. For 1 ECTS point, a minimum of 9 lectures must be attended.

Time and place: Spring 2023 (March-April), lectures every Tuesday and Thursday at 14.30-15.30.

Registration: PGS\_2197-3001

Contact persons: Marko Salmi (marko.salmi@utu.fi), address practical questions to Sampo Koivunen (sampo.koivunen@utu.fi)

**Lectures** (60 min each)

2.3 Introduction + Flow and mass cytometry (Salmi, Rantakari) (Säätiö lecture hall)

7.3 Single-cell sequencing in immunological tool-box (Lönnberg) (Säätiö lecture hall)

9.3 The lymph node: How structure serves function (Fair-Mäkelä) (Säätiö lecture hall)

14.3 Biology of the myeloid immune system (Mildner) (Säätiö lecture hall)

16.3 Dendritic cells (Takeda) (Säätiö lecture hall)

21.3 Activation and effector mechanisms of T-cells (de Figuereido) (Lauren 1 lecture hall)

23.3 B-lymphocytes (Alinikula) (Säätiö lecture hall)

28.3 Antigen receptor signaling (Mattila) (Säätiö lecture hall)

30.3 Leukocyte trafficking (Jalkanen) (Säätiö lecture hall)

4.4 Immunometabolism (Naucler; to be confirmed) (Säätiö lecture hall)

11.4 Autoimmune diseases (Hänninen) (Säätiö lecture hall)

13.4 Immunodeficiencies (Lempainen) (Säätiö lecture hall)

18.4 Cancer immunology (Hollmen) (Säätiö lecture hall)

20.4 Vaccination (He) (Säätiö lecture hall)

25.4 Immunity to viruses (Julkunen) (Säätiö lecture hall)

27.4 (reserve) (Säätiö lecture hall)

2.5 (reserve) (Säätiö lecture hall)

4.5 (reserve) (Lauren 2 lecture hall)