

平成29年度大学院共通科目 共通基礎科目・特論(コア講義)概要  
2017 General Basic Subjects (Core Lectures) Outline

講義番号	講義題目	担当教員(分野)	内容
1	動物実験に関する講習会	担当講師	1. 動物実験について(動物実験委員会講習:17:00~18:30) 2. 医学研究科附属動物実験施設利用者講習について(施設利用講習:18:30~19:30)
2	遺伝子組換え実験講習会	担当講師	遺伝子組換え実験について(17:00~18:30)
◎3	Molecular & Genetic Research on Infectious Diseases	林 祥剛 (病理病態学)	Introduction of ongoing research on diagnostic and therapeutic strategies of infectious diseases, the analysis of relation between host gene-variation (SNP) and diseases' progression, and gene targeting and editor of virus genome for innovation drug development.
◎4	Wnt signaling in development and cancer	南 康博 (細胞生理学)	In this lecture I will overview the roles of Wnt signaling in developmental morphogenesis/tissue-genesis and cancer progression. I will also introduce several experimental methods to evaluate these bio-medical phenomena.
◎5	Introduction to membrane traffic	匂坂 敏朗 (膜動態学)	Molecular mechanisms of membrane traffic and cell-free assay systems for analyzing membrane traffic will be presented.
◎6	Spinal muscular atrophy: Diagnosis and Screening	西尾 久英 (疫学)	Spinal muscular atrophy (SMA) is not an incurable disease any longer. For this reason, diagnosis and screening become much more important than ever. My lecture will deal with the outline of SMA and its diagnosis and screening system.
7	環境に配慮した実験を行うために	吉村 知里 (環境管理センター)	環境に配慮した実験を行うために
◎8	Visualization of central nervous system functions	和氣 弘明 (システム生理学)	Research into physiological phenomena has taken a leap forward by recent advanced optical bio imaging techniques. Traditionally, physiological phenomena including cell division, cell function, molecular transport and cell death were detected by biochemical methods. However, this information lacked high resolution spatial or temporal information. Using recent bio imaging techniques, both spatial and temporal information can be integrated across the molecular, cellular and systems levels that allow us to further investigate the hierarchical interaction of organ systems. In this session, we will discuss the current and potential future state of imaging techniques, and will further discuss what information can be revealed by the visualization of system physiology of central nervous system.
◎9	Pathological analysis of a genetic disease model	金川 基 (分子脳科学)	Experimental strategies to understand molecular and cellular pathogenesis on genetic diseases will be introduced. Studies on pathological analysis on muscular dystrophy models will be shown.
◎10	Introduction to mouse embryology and developmental vascular biology	平島 正則 (血管生物学)	Overview of mouse development and tips for analyzing embryonic vascular phenotypes will be presented.
◎11	Analysis of cellular functions by using fluorescent proteins	岡田 太郎 (生化学)	The fluorescent proteins are now widely used in the research of cell biology, not only as a reporter of expression but also as biosensors. In this lecture, several techniques using fluorescent proteins for analysis of cellular function will be presented.
◎12	Introduction to structural biology by using NMR and X-ray crystallography	松本篤幸/谷口はるか (分子生物学)	This lecture will introduce theoretical and experimental basis of structural biology based on NMR and X-ray crystallography.
◎13	Introduction to tissue stem cell research	下野 洋平 (分子細胞生物学)	Understanding the properties of adult tissue stem cells is important for both regenerative medicine and oncology. In this class, concept of tissue stem cells and the methods to analyze them, such as lineage tracing, cell sorting, and in vitro clonogenic assays, will be presented.
◎14	Basic virology	西村 光広 (臨床ウイルス学)	Overview of viruses: genetics, life cycles and pathogenesis.
◎15	Introduction to neuropharmacology	北岡 志保 (薬理学)	This lecture will help you understand neuropharmacology and provide a guide to the topic in stress-induced behavioral changes.
◎16	Development and pathology of the autonomic nervous system	榎本 秀樹 (神経分化・再生)	The lecture introduces the molecular and cellular mechanisms underlying the development and developmental disorders of the autonomic nervous system.
◎17	Introduction to Virology	勝二 郁夫 (感染制御学)	The general basics and the current topics of Virology will be lectured.
◎18	Basics of Flow Cytometry on Biomedical Research	齊藤 泰之 (シグナル統合学)	In the lecture, I will briefly introduce the theoretical introduction to flow cytometry, as well as various applications to biomedical research.
19	RI講習会	担当講師	RI講習会