

Science4Everyone

Scientists from the LCSB giving easily understandable lectures for everyone – no prior knowledge is required!



Every 2nd Monday,
12:00-12:30 pm



[Webex online meeting](#)
175 708 6606

DATE	TITLE & PRESENTER	TEASER
11 Jan	The magic of PCR Cristina Donato	Genetic material from a crime scene, looking for mutations, screening the genome - how is this possible? In the first talks of the Science4Everyone lecture series, we present one of the most powerful techniques that molecular biologists use in the lab. We introduce the polymerase chain reaction (PCR) and its advanced applications.
25 Jan	From bulk analyses to single cell PCR Cristina Donato	Recent technologies now also allow to look at the genetic information of individual cells. This opens now the possibility to analyze mutations of behaviour of different cell types enabling a sophisticated analysis of complex networks.
8 Feb	Nobel prize in chemistry 2020: Genome editing Myrto Patraskaki	The Crispr/CAS9-system has been described as the genetic scissors with which scientist can readily change the genetic code. What does that mean and why did this technique even manage to win the nobel prize?
22 Feb	Cellular heterogeneity: Single-cell RNA-sequencing Michela Bernini	Are identical cells really identical? Are they really going in the same direction, or they will eventually become different things? Are they developing into the same cell type, but maybe with different paces? We will talk about how single-cell RNA-sequencing can help us to answer all these questions and even more.
8 Mar	Using informatics in biology Todor Kondic	How can informatics help to assess the environment? We will present some general concepts and techniques of environmental cheminformatics highlighting the increasing importance of informatic approaches in biology.
22 Mar	What is Immunology? Thais Arns / Axel Chemla	In this first out of three lessons on immunology, we will explain some basic concepts of the topic: What is the purpose of immunity and where does it originate from?
5 Apr	Innate immunity: Our first line of defense Thais Arns / Axel Chemla	The second lesson on immunology will address the innate immune system: The first line of defense when a pathogen is threatening us. What happens in the body and how do the cells react?
19 Apr	Adaptive immunity: Let's learn and use our memory! Thais Arns / Axel Chemla	The topic of immunology will be concluded by a talk on adaptive immunity. How does our body prepare to fight subsequent after having been sick? And what is the role of antibodies in this context?
3 May	Immunofluorescence: Using antibodies & lasers Sonja Fixemer	Immunofluorescence microscopy is a routinely used technique in many laboratories. It allows researchers to reveal precise 3-dimensional cellular and subcellular properties in biological material. Here we will present some of the basic techniques and their current applications in research.
17 May	Live cell imaging: How do alive neurons look like? Axel Chemla / Michela Bernini	Can you imagine the fascination in looking cells under a microscope, but keeping them alive? Here, we will illustrate the basic concepts of this technique and we will also show you a practical example: the detection of calcium waves in our culture of neurons.
31 May	Super-resolution: Size matters! Manuel Maidorn	Advancing microscopy techniques now allow to achieve a resolution in light microscopy down to the size of individual molecules. How is that possible - and what are the challenges arising when you try to observe something which is actually smaller than the wavelength of light?
14 Jun	Electron microscopy: Exploring at nanometer-scale Sonja Fixemer	How can such an extreme magnification at nanometer-scale be achieved? Which information does it provide to biologists? These are some of the questions that will be discussed here - concluding the second season of the Science4Everyone series.