

Day 1: June 27th 2019	
09:30-10:00	Coffee and informal Welcome
10:00-12:00	<p>General introduction to <i>livMatS</i> topics Prof. Dr. Jürgen Rühle, Spokesperson <i>livMatS</i></p> <p>The Cluster of Excellence <i>livMatS</i> develops completely novel, bioinspired materials systems that adapt autonomously to various environments and harvest clean energy from their surroundings. The intention of these purely technical – yet in a behavioral sense quasi-living – materials systems is to meet the demands of humans with regard to pioneering environmental and energy technologies. The societal relevance of autonomous systems and their sustainability will thus play an important role in their development. The research program of <i>livMatS</i> is characterized by highly interdisciplinary collaboration between researchers from a broad range of fields including engineering, chemistry, physics, biology, psychology, the humanities, and sustainability sciences.</p>
12:00-13:00	Lunch at the Mensa Flughafen
13:00-13:45	<p>International Graduate Academy (IGA) Dr. Tina Lampe, IGA</p> <p>Dr. Tina Lampe will introduce the team and the services of the International Graduate Academy (IGA) including the qualification program and the language tandem matchmaking. Furthermore, she will present the central ombuds process and point to other services which might be interesting for doctoral candidates.</p>
13:45-15:45	<p>Fuzzy measures – and helpful statistical methods Prof. Dr. Andrea Kiesel, Principal Investigator <i>livMatS</i></p> <p>A single measurement does often not provide a valid and reliable estimate of the "true" value of the assessed construct. Multiple measures (more data points) and suitable statistics depending on the quality of measurements allow for more reliable descriptive statistics. There will be a short overview on measurement scales, measurement errors, distributions of measurements, and estimates for averages depending on data type. In addition, there will be an explanation of the logic for testing whether samples differ, and an introduction to an easy parametric test for differences (t-test).</p>
15:45-16:00	Coffee
16:00-18:00	<p>Writing Workshop Prof. Dr. Mary Williams, Feature Editor of <i>Plant Cell</i></p> <p>Writing is a necessary part of a scientists work. For many, the writing process is stressful and challenging. In this workshop, I will introduce strategies for successful writing, from the early drafts to the final, polished manuscript. I will also cover good practices for figure presentation, and provide a short overview of how to navigate the peer review process.</p>

Day 2: June 28th 2019	
09:30-10:00	Coffee and informal Welcome
10:00-11:00	<p>Sustainability in <i>livMatS</i> research Prof. Dr. Rainer Grieshammer, Principal Investigator <i>livMatS</i> Martin Möller, Doctoral Researcher <i>livMatS</i></p> <p><i>Firstly</i>, the status of sustainability analysis and assessment of technologies and products will be presented. Sustainability assessment is part of sustainability management and is therefore action-oriented. The assessment is based as much as possible on scientific principles, but is ultimately subjective, ideally conducted in cooperation with the stakeholders. With the Agenda 2030, there is now an internationally defined target and indicator system. <i>Secondly</i>, the sustainability assessment of a technology will be presented, using the example of nanotechnology. <i>Finally</i>, the planned evaluation process within <i>livMatS</i> will be addressed. The goal is the design of an interdisciplinary development-accompanying sustainability assessment method, called TAPASS (Tiered Approach for Prospective Assessment of Benefits and Challenges). The living materials systems, process options and finally applications will be assessed according to their Technology Readiness Levels. TAPASS begins with a qualitative investigation that is gradually refined with semi-quantitative and quantitative data in iteration steps to pose the “right” questions and to give recommendations for the further development. In this way TAPASS can act as a strategic radar – as an “early warning system” for less sustainable options and as an “early encouraging system” for favourable paths of innovation.</p>
11:00 – 12:30	<p>Work safety in and outside of the lab Dr. Carsten Kallfaß, Department of workplace health and safety</p> <p>The Stabsstelle Sicherheit (SSI) (department of workplace health and safety) is the central institution that deals with all aspects of health and safety in the workplace. It also hosts the biosafety office, which helps you to maintain compliance with federal and state regulations and guidelines when working with biological material. We would like to give you a short overview about our work and show you how we can help you in your daily routine.</p>
12:30-13:30	Lunch at the Solar Info Center
13:30-15:00	Coffee and <i>livMatS</i> Speed Dating
15:30-16:30	<p>Biomimetic guided tour in the Botanic Garden Dr. Falk Esser, Postdoctoral Researcher <i>livMatS</i></p> <p>During the guided tour through the Botanic Garden, a wide variety of plant concept generators for biomimetic developments and the biomimetic product will be presented. You will be shown a variety of plant models, including the lotus plant on which the lotus effect was studied, and burdock (<i>Arctium</i>) and wood avens (<i>Geum urbanum</i>), the inspiration for velcro, one of the oldest “biomimetic” patents. You will also learn why trees can be used to optimize mechanical components for light-weight construction and bioinspired facade shading. The public greenhouses will also be part of the tour.</p>
17:00	Feedback session and joint dinner at the <i>Martinsbräu</i> (Kaiser-Joseph-Straße 237, 79098 Freiburg)