KeFa Research and Organization Section Strategy 2021

This document contains a description of the 2025 KeFa research and organization strategy as formulated in the Spring 2021. The KeFa research and organization strategy is part of the 2025 strategy for the Department of Physics, Chemistry and Pharmacy. The strategy is expected to be evaluated on a yearly basis.

KeFa has a strong focus on basic research as clearly stated by the vision of the Department for Physics, Chemistry and Pharmacy: **From Fundamental Research to Sustainable Solutions**. In terms of research, the focus of the section is within the following five areas, all of which integrate chemistry and pharmacy

Biological Chemistry Sustainable Chemistry Medicinal Chemistry Drug Development and Transport Chemical Design and Functional Materials

Goal 1: Obtain more and larger grants (with OH) for research within the above five research directions.

All section members are extremely successful in bringing smaller and medium sized personal research grants to the section. The section members should continue this high degree of success, and the management should secure the best possible conditions for this success to continue, *e.g.* by working towards less time spent by the section members in teaching with the aim of increasing the time for writing grant applications.

In addition, it is the goal of the section to obtain funding for a larger center facility. This should be realized by a joint research strategy in the section ideally involving interdisciplinary aspects between different research areas in the section. Through targeted research seminars at section meetings, current and future research is presented by VIPs, and opportunities for preparing joint research applications are discussed. External Relations (ER) may be invited to research seminars, and contributes with information regarding current funding calls as well as application opportunities.

The synergy between chemistry and pharmacy should be better exploited, and the chemistry and pharmacy parts of the section should be open for initiating collaborations regarding joint research projects, and should apply for joint external funding of such projects. The members of the section should to a higher degree seek opportunities for establishing collaborations with industrial partners.

The members of the section should explore opportunities for increased collaboration with the physics section of FKF, as well as increased collaboration with other departments at NAT such as *e.g.*, IMADA and BMB. Also, increased collaboration with other Faculties should be further explored, *e.g.*, TEK. The section should seek opportunities for contributing to the NAT FAK data science strategy in relation to developing collaborations around *e.g.*, AI, machine

learning and modelling. The management should strongly support such collaborative initiatives across departments/sections and Faculties.

Within the next 4 years, it is the goal to attract funding for a larger center facility *e.g.* a DG center and a minimum of 1 ERC grant is expected to be granted to the section.

Goal 2: Increased enrollment in the chemistry education of the section.

This should be realized through a number of actions as described below.

1. A concrete and systematized outreach strategy should be prepared including a targeted outreach strategy at the upper secondary educations. All members of the section are expected to participate in outreach activities.

2. A new specialization in chemistry (bachelor) within medicinal and/or pharmaceutical chemistry is introduced. This specialization is unique to the section and is strongly profiled in the outreach program.

3. Chemistry teachers with relevant expertise should to a greater extent contribute to the teaching within bachelor pharmacy courses (FA courses) with the aim of increasing the visibility of chemistry within the pharmacy education.

4. Chemistry should offer several bachelor and first year projects at the interface between chemistry and pharmacy. This increases the interest in chemistry among pharmacy students, and the aim is to have more pharmacy students choose a master's degree in medicinal chemistry, while still maintaining a constant number of students on the technological profile.

5. The section currently holds a profile in "Green Chemistry". This profile should be further strengthened and developed utilizing the strong research expertise within sustainable chemistry in the section.

6. Although not completely related to a greater intake of chemistry students, the chemistry teachers should explore possibilities for enhancing the synergy between chemistry teaching in KeFa and at TEK.

Within the next 3 years, the enrollment in chemistry is expected to increase to 25-30 students.

Goal 3: Secure the right future recruitment, on-boarding and career development:

In the future the section should recruit new faculty members within the areas of pharmacy, inorganic chemistry and environmental and/or analytical chemistry. Recruitment should proceed through a transparent approach, and candidates should be evaluated regarding both their teaching abilities, their ability to attract their own funding, and their ability to collaborate scientifically with the members of the section.

The management should secure a professional on-boarding of new faculty members including an introduction to the members of the section, and the possibilities regarding infrastructure in the section.

The management should in addition secure optimal possibilities for the current staff members for advancing their career and secure talent development.

Within the next 4 years it is expected that an optimal scientific and teaching balance has been obtained within the section by recruiting new staff members matching the needs of the section.

Goal 4: Establish a clear and transparent decision-making process of the management:

The management should ensure that the section members are involved in taking decisions for matters that affect the conditions for the section members including economical aspects.

The management should support bottom-up initiatives brought up by the section members, and should create a working environment with the best possible options for each of the section members.

Goal 5: Establish a well-functioning and sustainable infrastructure:

The members of the section depend to a very high degree on a well-functioning and sustainable infrastructure – including a computational infrastructure in terms of access to HPC facilities. The members of the section should initiate joint infrastructure applications coordinated by the infrastructure committee. When possible, salaries for lab technicians and staff responsible for operating the infrastructure should be applied for.

It is – together with the section members – the responsibility of the management to secure an operational infrastructure and to make sure that internal funds are available for maintaining this infrastructure. The members of the section should share better the available infrastructure.

The unique possibilities offered by the KeFa infrastructure as highlighted by the ongoing excellent research activities should be visible to the outside, and this visibility should be used to attract collaborative projects with external partners.

Within 1-2 years it is expected that specific members of the KeFa personnel have been educated and trained to operate core facilities of the infrastructure with the aim of securing a well-functioning long-term operation of the infrastructure components. These persons could be *e.g.* lab technicians or an A-TAP depending on further discussions among the section members.