

## Commission - Chemistry work group

Following the Basis of Fusion (Fusionsgrundlaget) of the University of Copenhagen (KU), the PhLS report (FLN udredningen) and their respective hearings, the deans of the Faculty of Pharmaceutical Sciences (FARMA), Faculty of Life Sciences (LIFE) and Faculty of Science (SCIENCE) have formed a chemistry work group (CHEM). CHEM shall describe and concretize synergetic opportunities amongst the academic environments of chemistry at the three faculties, and develop actual action plans for the realization of the synergies. This work will include a suggestion for the future coordination and development of chemistry at KU in order to stimulate a significant strengthening of chemistry across the three faculties. The commission includes specifications for both research and education at FARMA, LIFE and SCIENCE.

### Chemistry at KU

CHEM will deal with research, teaching and education in a broad sense within chemistry and chemistry-related areas at the following departments: dept. Chemistry (KI-SCIENCE); dept. Medicinal Chemistry (M-FARMA); dept. Pharmaceutics and Analytical Chemistry (A-FARMA); dept. Basic Sciences and Environment (IGM-LIFE). The academic area of chemistry included in this commission has a number of scientific boundaries with chemistry related core elements, which will be considered. Also, there is a longstanding tradition for research collaboration between the chemical scientific areas across the faculties, which will be described.

### A. Composition of the Chemistry Work Group:

CHEM	Name	Faculty	Department	e-mail
Coordinator, head of dept.	Fredrik Björkling	FARMA	Dept. Medicinal Chemistry	<a href="mailto:fb@farma.ku.dk">fb@farma.ku.dk</a>
Secretary, assoc. prof.	Bente Vestergaard	FARMA	Dept. Medicinal Chemistry	<a href="mailto:bv@farma.ku.dk">bv@farma.ku.dk</a>
Members:				
Assoc. Prof.	Bente Gammelgaard	FARMA	Dept. Pharmaceutics and Analytical Chemistry	<a href="mailto:bg@farma.ku.dk">bg@farma.ku.dk</a>
Head of dept.	Janne Rømsing	FARMA	Dept. Pharmaceutics and Analytical Chemistry	<a href="mailto:jr@farma.ku.dk">jr@farma.ku.dk</a>
Prof.	Knud Jørgen Jensen	LIFE	dept. Basic Sciences and Environment	<a href="mailto:kjj@life.ku.dk">kjj@life.ku.dk</a>
Head of dept.	Susanne Sørensen	LIFE	dept. Basic Sciences and Environment	<a href="mailto:sus@life.ku.dk">sus@life.ku.dk</a>
Prof.	Jesper Bendix	SCIENCE	Dept. Chemistry	<a href="mailto:bendix@kiku.dk">bendix@kiku.dk</a>
Head of dept.	Mikael Bols	SCIENCE	Dept. Chemistry	<a href="mailto:bols@kemi.ku.dk">bols@kemi.ku.dk</a>

A subgroup is formed, with focus on teaching and education. This subgroup will report to CHEM. The subgroup can include relevant colleagues in the work, and must secure both influence of students, and the incorporation of results/input from ongoing relevant initiatives, including the activities within the group of Vice-deans for education. The subgroup consists of:

Kristine Kilså (SCIENCE)  
Stefan Stûrup (FARMA)  
Charlotte Bjerregård (LIFE)

A subgroup is formed, with focus on organizing a staff seminar, to ensure bottom-up input to CHEM. The subgroup consists of:

Dan Stärk (LIFE)  
Stefan Stûrup (FARMA)  
Theis Sjølling (SCIENCE)  
Rasmus Prætorius Clausen (FARMA)

## **B. Points of Action**

Based in the Basis of Fusion, the recommendations in the PhLS report and their respective hearings, CHEM works for, via synergy effects, an improvement of the conditions for education and research within the area of chemistry at FARMA, LIFE and SCIENCE.

The work of CHEM includes the following elements:

Background:

1. A description of the chemical scientific environments and their scientific boundaries in relation to both research and education at the three faculties
2. An overview of existing collaborations (research and education) and established initiatives amongst chemical academic environments, visualizing scientific synergies already achieved after the fusion
3. Identification of strengths and weaknesses of the KU chemistry area, also in comparison with other Danish Universities

Analysis:

4. Analysis of the possibilities for a formalisation and strengthening of the organizational structure of teaching, and an evaluation of the need for further initiatives
5. Analysis of the strongholds of research within the chemical environment at the four departments, including a description of existing accessible resources. These include scientific personnel, infrastructure (technical apparatus and housing facilities), student mass

Recommendations:

6. Recommendations regarding research infrastructure
7. Recommendations regarding future strategic recruitment of scientific personnel for the chemistry area at KU
8. Recommendations regarding future strategic recruitment and optimized completion of students for the chemistry area at KU
9. Recommendations regarding coordination of teaching and development towards future teaching and education within chemistry at KU, including support of collaboration with other scientific areas within the three faculties
10. Recommendations regarding organisation and embedding of the scientific areas, including the possibility to establish a large research center within KU across the faculties

Ad 1) Short descriptions of max. 1 A4 page will be made for each faculty. These descriptions will in particular describe the boundaries to other chemistry-related scientific environments at the faculties, and will also include boundaries to non-chemistry scientific areas, when those areas form a basis for education and/or research within chemistry (and vice versa).

Ad 2) The overviews within research and teaching will be included as appendices in the final report. Within teaching/education benefit will be taken from existing initiatives, including the group of vice-deans for education.

Ad 3) No actual bibliometric analysis will be performed for other universities, rather a qualitative comparison is relevant within selected areas.

Ad 4) Working groups, aiming at partial coordination of chemistry education have been established. Including recommendations from these groups and the group of vice-deans for education, CHEM will continue an analysis of options which will further formalize and strengthen the organization of teaching and education. Particular focus will be on coordination of courses offered, a coordinated presentation of these courses to the students (kemi-portal), and a coordination of the teaching resources. Based on a collected evaluation of existing strengths within chemistry teaching, including international comparisons, recommendations concerning further initiatives for the establishment of common educations or specialization of existing educations will be made. An account will be made of the relation between the numbers of permanent staff, students, courses, teaching hours per staff, production of STÅ (per faculty and per VIP).

Ad 5) The analysis is performed at two levels:

- a) At department level, including comparative key figures such as number of staff, peer reviewed papers 2007-2009 and ph.d. production 2007-2009
- b) At subject level, identifying research subjects and scientific fields, central for the activities at the four departments. For this purpose, the paradigm forwarded (included as appendix A) is used, for the description of each field, including a listing of key staff members, scientific focus, available external funding and more. As a part of this, a bibliometric analysis is performed. The bibliometric analysis is supported centrally by the KU libraries, and will be part of the basis for identifying research themes and strongholds, which may attract funding for a minimum of two basic research centers (Grundforskningscentre) within a period of 5 years. The paradigm will also provide input for the infrastructure analysis and a discussion of core facilities within the chemistry area. CHEM further specifies details, including whether the paradigm is used at dept. level or interfaculty areas, the number of staff members included, if key staff members can be included in multiple groupings, and a definition of external funding to be reported.

Ad 6) CHEM will, based in input from the chemistry research environments (including the paradigm described above) identify if particular infrastructure should be maintained and financed at interfaculty level, and at which areas interfaculty core-facilities must be established, while some instrumentation must remain decentralized. CHEM will refer to the established KU-Infrastructure working group.

Ad 7) An identification of research or education areas with particular needs may result in concrete recommendations. General guidelines for a potential coordinated interfaculty recruitment strategy will be discussed.

Ad 8) Includes principles for coordinated student recruitment within chemistry and chemistry related fields and the effect of coordinated provided courses. Recommendations may be made concerning initiatives for reducing student dropout and increasing the completion rates of chemistry and chemistry-related students.

Ad 9) Based in the analyses, concrete action plans for education will be made, including an identification of areas which may benefit from a coordinated strategy, comprising both candidate and post-candidate levels.

Ad 10) This comprises an evaluation of favorable restructurings and potential transfers of individual researchers and/or research units. There will be a focus on organization, including coordination of interfaculty activities under the structure of a virtual department. Future potential large research centers (in accordance with the PhLS report) will be evaluated in context of necessary recruitment and resources.

### **Report**

CHEM will before the specified deadline (see appendix B) deliver a report. The first draft is available to the deans of FARMA/LIFE/SCIENCE primo July 2010 in English. The final report is delivered Sept. 6th 2010. The report will be app. 10 pages excluding appendices.

### **Management support**

The present commission is approved by the deans of FARMA/LIFE/SCIENCE at a meeting medio March 2010, ensuring equal expectations concerning the level of the invested resources, the contents of the report and the process of the work comprising the level of staff hearing. The deans will provide the necessary support for the bibliometric analysis. Likewise, management support is expected for a coordination of the recommendations from CHEM, with the interfaculty infrastructure work group, and the group of vice-deans for education.

## Appendix A. Dokumentation (documentation performed in Danish)

Der gennemføres en dokumentation med udgangspunkt i en række nøgletal:

- a. Antal VIP + lokalisation
- b. Peer Review Papers 2007, 2008, 2009
- c. ph.d.-produktion
- d. Områdets strategiske vægt og sigte
- e. Evt fysiske flytninger

<b>A. Forskningsområde (overskrift)</b>				
<b>A1. Tovholder: Navn og stilling</b> <b>Tlf. og e-mail</b>				
<b>A2. Øvrige nøglepersoner:</b> Der kan angives op til 5 nøglepersoner, der inddrages i beskrivelsen af forskningsfeltet.				
<b>A3. Værtsinstitut/involverede institutter</b>				
<b>A4. Kort beskrivelse af forskningsområdet inkl. fagligt fokus</b> (ca. 20 linier)				
<b>A5. Kort beskrivelse af potentiale og perspektiver inden for forskningsområdet</b> (ca. 20 linier) <i>I beskrivelsen kan indgå indikation af foreløbige planer for forskningsfinansiering.</i>				
<b>B1. Ekstern forskningsfinansiering, hjemtaget af tovholder og nøglepersoner som bevillingshaver</b> Angiv omfanget af eksterne forskningsmidler tildelt over de sidste 3½ år. <b>Bevilget til området (KU's andel mio. kr.) – tovholder og nøglepersoner som bevillingshaver</b>				
<b>Tildelt år</b>	<b>Offentlige</b>	<b>EU</b>	<b>Private</b>	<b>I alt</b>
2006				
2007				
2008				
2009				
<b>I alt</b>				
Specificer gerne større bevillinger og deres bevillingsperiode.				
<b>B2. Ekstern forskningsfinansiering, hjemtaget af andre</b> Hvis det anses for vigtigt for dokumentation af det pågældende forskningsområdes styrke kan evt. medtages bevillinger hjemtaget af andre end tovholder(A1) og nøglepersoner (A2). <b>Oplys bevillingshaver.</b>				
<b>Bevilget til området (KU's andel mio. kr.) – andre bevillingshavere</b>				
<b>Tildelt år</b>	<b>Offentlige</b>	<b>EU</b>	<b>Private</b>	<b>I alt</b>

2007				
2008				
2009				
<b>I alt</b>				
<b>C. Samarbejdsrelationer og snitflader</b>				
<b>C1. KU-samarbejde.</b> Har forskningsområdet samarbejde med andre fakulteter ved KU? Beskriv kort komplementaritet, synergier og evt. overlap/konkurrence (5 linier)				
<b>C2. Nationalt samarbejde.</b> Har forskningsområdet samarbejde med fagområder/forskningsfelter ved andre institutioner? Beskriv kort komplementaritet, synergier og evt. overlap/konkurrence (10 linier)				
<b>C3. Internationalt samarbejde.</b> Angiv kort omfanget af internationalt samarbejde (fx fælles forskningsbevillinger, fælles publikationer, post docs og ph.d-studerende) (5 linier).				
<b>C4. Erhvervsmæssig betydning.</b> Angiv omfang og potentiale af samarbejde med sektorer, private og offentlige virksomheder (10 linier)				
<b>D. Forskningsinfrastruktur og corefaciliteter</b> <i>Informationer i disse to felter vil blive brugt i det fremadrettede arbejde om forskningsinfrastruktur på de fire fakulteter.</i>				
<b>D1. Eksisterende faciliteter og instrumentcentre:</b> Hvilke eksisterende faciliteter og centre benyttes af forskningsområdet?				
<b>D2. Kort beskrivelse af fremtidige behov for større forskningsinfrastruktur, herunder core faciliteter,</b> som kan bidrage væsentligt til at løfte området og give nye muligheder af strategisk betydning (for KU og nationalt).				
<b>E. Publikationer, citationer og H-index</b> <i>Der gennemføres bibliometriske analyser på individniveau for alle tovholdere og nøglepersoner (A1 og A2).</i>				

## Appendix B. Timeline

<b>Tidsplan</b>				
<b>Aktivitet</b>	<b>Start</b>	<b>Milepæle</b>	<b>Slut</b>	<b>Status</b>
CHEM work group established	2. marts 2010			
Commission defined	2. marts 2010	Meeting with deans, March 16 <sup>th</sup> 2010 18.00-19.00	April 2010	
Commision approved			April 2010	
Background described and analysis performed	Ultimo March 2010	Mid- evaluation, meeting with deans ultimo May 2010  Bibliometric analysis ultimo April 2010  Staff seminar ultimo May 2010	Ultimo May 2010	
Writing of report including recommendations		1st draft primo July 2010	Final Ultimo August 2010	
Feedback			Group of deans medio August	
Hearing (process controlled by deans)		Hearing in relevant councils		
Deans report to the KU board			Medio Septem ber 2010	