

## LLC Linnaeus project financing 2011 – 2013

### Recommendation to the LLC Board from the LLC Research Committee

#### Background

The Linnaeus programme at the LLC was initiated July 1, 2006, following a successful application to the Swedish Research Council. This is a 10-year grant subject to evaluations. Four rounds of decisions regarding research money distribution have been taken by the LLC board, based on recommendations from the LLC Research Committee (RC). In total,  $4.5 \times 6 \text{ MSEK} = 27 \text{ MSEK}$  have been distributed. Certain funds have still not been spent because of delays in appointments etc. Such remaining funds, which have been allocated for the first 4.5 years, are brought forward to be spent during the new funding period which starts January 1, 2011, unless special circumstances motivate return of funds to the LLC board. In the board decisions taken, the LLC has already made certain fund reservations for the time period following December 31, 2010. These reservations are listed below:

Support for a forskarassistent (assistant professorship) in laser-driven particle acceleration, Dr. Olle Lundh; 2 more years	1,700 kSEK
Support for postdoc in Quantum electronics, Dr. Lars Rippe, 1 more year	450
Support for a female PhD student position in Combustion diagnostics, Linda Vallenhag; 2.5 more years	1,500
Support for ½ PhD student position, Chemical Physics (Pullerits) 2.5 more years	750
Support for ½ PhD student position, Atomic Physics, Biophotonics 2.5 more years	750
<b><i>Total, Reservations for the coming funding period</i></b>	<b><i>5,150 kSEK</i></b>

A funding proposal for the coming 3 years is now made. An international 5-year scientific evaluation of the LLC performance will be pursued by the Swedish Research Council, where LLC is to supply the evaluation material during the autumn of 2011. The funding proposal now being prepared will be part of this material. Following evaluation, a 20% increase, a constant level or a 20 % decrease in funding can result. The present proposal is based on the assumption of a maintained funding level through the coming 3-year period. The new funding proposal for the coming 3 year period is therefore proposed to be limited to  $3 \times 6.0 - 5.15 \text{ MSEK} = \mathbf{12.85 \text{ MSEK}}$ .

In the process of preparing a funding proposal for the LLC Board, the RC had 4 meetings to discuss policy and procedures, and to prepare the programme for the LLC Research and Policy Day, which was arranged on November 3, 2010 at the Scandic Star Hotel, Lund (Enclosure 1). The event attracted about 80 participants. Three members of the LLC International Advisory Board (IAB) were present: Prof. Gunilla Jönson, LU, Prof. Joseph Nordgren, Uppsala University, and Prof. Ove Poulsen, Aarhus Engineering College and Aarhus University. The fourth member, Prof. Jürgen Mlynek, Helmholtz Association, unfortunately could not attend.

The RC decided to prepare the new Linnaeus programme by issuing a call for proposals within the LLC, and 17 proposals were obtained (Enclosure 2). The proposals were grouped for presentation in 5 different blocks at the Research and Policy Day.

It was realized that the advice from the IAC would be particularly valuable for the LLC, since external input regarding proposal funding would have a high level of legitimacy. The Board members were prepared with the following documents received about a week before the event.

Programme, LLC Research and Policy Day  
LLC Linnaeus Programme 2011-2013, Memorandum SS  
17 proposals for possible Linnaeus programme funding  
LLC Linnaeus Programme application to the Swedish Research Council  
Evaluation material supplied for 1.5 year Evaluation (mostly of organizational issues)  
Evaluation report  
Policy and Governance for the Lund Laser Centre  
LLC Governance 2008-2010  
New LLC Brochure

The IAC was charged with the task of giving funding advice within a frame of 8,100 kSEK for the coming 3-year period, where also central costs for administration and joint activities would be included. Following the November 3 event, the IAC met for a working dinner, where two RC representatives, Villy Sundström and Sune Svanberg, joined in after about 2 hours, to answer questions from the Board. Subsequently, the IAB prepared a provisional report, which was presented to the RC and discussed in a joint meeting at the Physics Department, November 4, 09:15 – 10:30. Subsequently, the final report of the IAC has been received (Enclosure 3).

The RC has met twice afterwards to prepare this recommendation and decided to largely follow the suggestions by the Advisory Board. In particular, it is noted that the evaluation criteria for a successful Linnaeus center go beyond the sole ambition to make high-level research. The added value aspects are particularly important.

### **Recommendations to the LLC Board**

The LLC Linnaeus programme must also, like earlier, carry certain central costs regarding LLC administration, electronics support and advanced LLC course support. In addition, some fund for the Linnaeus coordination (also containing some research allocation for S. Svanberg) are also included.

Yearly costs are

Contribution towards LLC administration	400 kSEK
Linnaeus coordination/research (contr. towards S. Svanberg senior prof. salary)	270
Electronics service support	300
Course support (incl. FRED license)	130
<b>Total</b>	<b>1,100 kSEK</b>

It is noted, that out of the total sum, less than half is to be considered as administration costs.

Considering these costs for a three-year period, 3.3 MSEK have to be deducted. Thus, the sum for the time period 2011-2013 is  $12.85 - 3.30 = 9.55$  MSEK, or about **3.2 MSEK/y.**

The IAC decided to give very detailed suggestions for allocations. The RC decided to largely follow these recommendations, taking advantage of the detailed advice supplied. In addition to the projects suggested for funding by the IAC, we suggest to conditionally fund one more project.

The following allocations to projects (projects are identified with the running numbers given in the project listing) are proposed:

	First year (kSEK)	Total, 3 year period (kSEK)
Laboratory astrophysics (Nilsson) (# 1)	400	1,200 Note A
Advanced diagnostics (Aldén) (# 2)	300	900
Soot and aerosols (Bengtsson) (# 3, (4))	300	900
Environmental monitoring etc. (Somesfalean) (# 5)	300	900 Note B
Time-resolved fluorescence etc. (Andersson-Engels) (# 6)	200	600
Medical biophotonics (Katarina Svanberg), 2 years (# 7)	250	500 Note C
Laser plasma acceleration (Wahlström) (# 8, (14))	200	600
High-harmonic seeding (L´Huiller) (# 9)	200	600
Short-pulse facility (Larsson) (# 10)	200	600
Organometallic trans. metal compl. (Yartsev) 1 y (# 11)	200	600
Subfemtosecond electron transfer (Canton) (# 12)	300	900
Coherent multi-dim. spectroscopy (Pullerits) (# 15)	200	600
	<b>3,050 kSEK</b>	<b>8,900 kSEK</b>

The sums are suggested to be coordinated by the persons indicated above, subject to optimized re-allocation within the projects proposed, as appropriate.

Three allocations (marked with Notes A, B, and C) are subject to special conditions (if not fulfilled the allocation is at the LLC Board disposal for later reallocations):

**Note A:** 400 kSEK annually for 3 years as support towards the salary of Hampus Nilsson, subject to the establishment by the Science faculty of a financed university lecture-ship for him.

**Note B:** Subject to the presence of a continued combined China coordination/Research position for Gabriel Somesfalean, where research can be pursued at least corresponding to the salary support level now allocated.

**Note C:** Subject to the continued appointment of Katarina Svanberg as an adjunct professor for 2 more years.

If all Note items are fulfilled, the adopting of the proposal means, that 650 kSEK would remain as a strategic reserve for the coming 3 years.

In order to foster fruitful exchange between different competences and assuring a high cross-fertilization within the LLC and its projects, it is proposed that periodic **Topical group meetings**, following a model presently adopted for *Advanced diagnostics*, are arranged within the following broad topical areas:

Advanced diagnostics (Convener: M. Aldén)

Lasers, accelerators and interactions (Convener: S. Werin)

Ultrafast and ultrasensitive spectroscopy (Convener: T. Pullerits)

Medical and biological applications (Convener: Stefan Andersson-Engels)

*The LLC Research Committee recommends the LLC Board to decide on the research grant allocations specified above and subject to special conditions mentioned. Further, the committee recommends the Board to establish topical interaction groups, and to encourage extended cross-disciplinary interaction.*

Lund, November 16, 2010

For the LLC Research Committee

Sune Svanberg  
Chairman