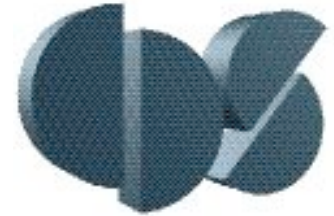




Center for Biological Systems Architecture (CBSA)



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California Institute of Technology

Proposal Planning Meeting
24 October 2006

CBSA Vision

Understand the regulatory architecture controlling information flow through cellular networks

- Diverse regulatory mechanisms act at different time scales and act simultaneously to create complex control systems regulating the kinetics of component interactions
- Many of these regulatory mechanisms have been identified
 - transcription, post-transcriptional processing, translation, and allosteric regulation
 - incomplete understanding of how biological systems organize, layer and implement these regulatory mechanisms
- Dynamics of the network response play a critical role in regulating the observed system behavior

Build on recent advances in imaging strategies, molecular probes, computation, theory

- Probe the dynamic response of large-scale cellular networks at different temporal and spatial resolutions
- Apply to a set of model networks to uniquely examine the dynamic responses of key networks governing diverse cellular behaviors
- Develop and apply new tools that will allow for processing of the stoichiometric and dynamic data sets to explore the regulatory architecture of biological systems
- Identify architectures that scale with system complexity

Proposal Structure (due 21 Nov 06)

Program summary (2 pages)

Organizational structure/decision making plan (2 pages)

Center development and outreach plans (5 pages)

Research projects and preliminary studies (30 pages)

- First pass: individually written sections

Core facilities (10 pages)

Intellectual property plan (1 page)

Diversity (URM) plan (2 pages)

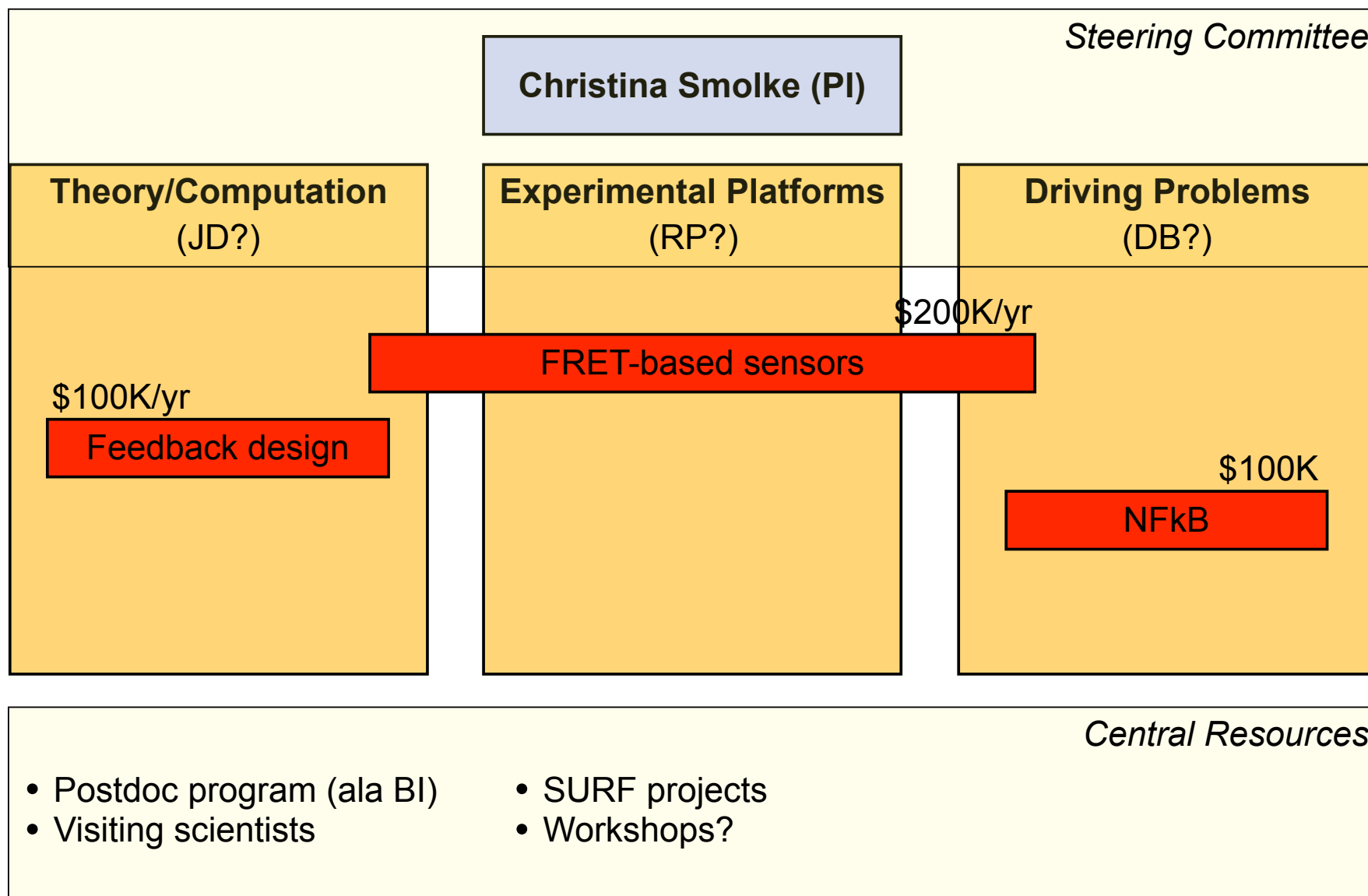
Timeline (2 pages)

- List of specific objectives for years 1, 2, 3, 4-5

Writing timeline

- 24 Oct: writing assignments
- 30 Oct-2 Nov: work on individual sections
- 3 Nov (Fri): first cut at individual sections due
- 5 Nov (Sun): first draft of full proposal out
- 6-10 Nov: updates to individual sections
- 13 Nov (Mon): second cut at individual sections due
- 14-15 Nov: CDS writing
- 16-19 Nov: Grants.gov massaging
- 20-21 Nov: polishing

Management Plan (DRAFT)



Goals and Objectives

Goals

- Experimental and theoretical tools for understanding the regulatory architecture of cells and multi-cellular systems
- Education of the next generation of systems biologists
- Application of new tools to driving biological problems

Objectives (round-robin)

- CDS: A modular platform for detecting activation thru signaling pathways using FRET-based molecular sensors applied to MAPK signaling pathways
- RMM: New tools for design of feedback systems in engineered biological circuits with applications to metabolic engineering
- RP:
- GJ:
- AA:
- DB:
- ME:
- DN:
- JD:

Write 3-5 page
description
(by 3 Nov [Fri])