Far from being complete, the Information Revolution has only started. Information technology will continue to reshape our society and our economy for many years to come. As IT expands its reach, the focus is shifting away from the hardware/software boundary, to the software/user boundary: our research focus must shift accordingly to “soft computing” and to the many emerging application areas—in the natural sciences, the humanities, the social sciences, and the arts. Informatics\(^1\) is widely practiced at the University of Illinois, with research and teaching activities in Computer Science (CS), Library and Information Science (LIS), Electrical and Computer Engineering (ECE), the Library, the National Center for Supercomputing Applications (NCSA), and many other departments. Better coordination of these activities would enhance research and education on the campus, both North of Green and South of Green, and build a bridge between Engineering and other parts of the campus, raise the overall ranking of UIUC, and make the campus more relevant to both the intellectual and business life of the US, in general, and of Illinois, in particular. We see four broad thrusts for Informatics at the University of Illinois:

1. **Core Informatics**: using computers to manage, process and retrieve information.
2. **Computational Sciences**: developing computational models to analyze and solve problems in science and engineering.
3. **Applied Informatics**: multidisciplinary studies that apply informatics to a particular research or application domain.
4. **Business Engineering**: use of computing, information management, and operations research to transform business processes and services.

We propose the Illinois Informatics Initiative (I\(^3\)) as a mechanism to integrate distributed activities in these areas and push them in new, critically important directions, based on the following principles:

- the initiative should be interdepartmental and interdisciplinary;
- the initiative should combine new research programs with new education programs;
- the initiative should provide flexibility to explore new research and education directions with few impediments.

The organization overseeing this initiative will be the Illinois Informatics Institute (also referred to as I\(^3\)). It will

- provide a home for interdisciplinary education programs with a strong informatics component;
- provide a home for interdisciplinary research programs with a strong informatics component;
- provide a home for informatics disciplines that are not represented now by one unit on the campus.

Core informatics units will participate on terms that recognize legitimate disciplinary self-interest (the need to publish research about informatics) but that also reward contributions to increasing the effectiveness of research using informatics in other disciplines. Participants in other disciplines will also be supported with professional staff in informatics and rewarded for carrying out research programs that take advantage of informatics expertise available on campus.

**Deliverables:**

2006-2007: I\(^3\) structure created; additional campus units recruited; cross-campus Computation & Information minor in place; planning for new research & education programs in software engineering, social informatics, digital creativity, knowledge management, health informatics, human-computer interaction, computational science and business engineering; I\(^3\) research demonstration project (informatics tools and techniques to support an interdisciplinary research area); NCSA IACAT established (including thrust in humanities/arts/social sciences); hiring of new research scientists

---

\(^1\) We use “Informatics” to denote research, development, or application of computational tools and approaches for using data, including tools used to acquire, store, organize, archive, analyze, or visualize data.
and faculty. New research funding coordinated through I^3 of $8 M; 250 enrollments in informatics courses and 200 enrollments in minor.

2007-2008: New graduate education programs launched in subset of planned areas; NCSA IACAT working with at least 25 faculty from UIUC and elsewhere; new research funding coordinated through I^3 of $10 M; 350 enrollments in informatics courses and 400 enrollments in minor.

2008-2009: All planned education programs launched, and subset is fully enrolled; new research funding coordinated through I^3 of $12M; 450 enrollments in informatics courses, and 800 enrollments in minor; outreach to other Illinois academic institutions through CARLI.

Resources required:

- **General:** Revised and agreed-upon rules governing undergraduate tuition for minors, shared ICR on research grants, and hiring, tenure and promotion guidelines for interdisciplinary faculty. Staff support for I^3 organizational, administrative, and corporate/foundation work.
- **GSLIS:** 10 new tenure-system faculty and 10 research scientists or postdoctoral fellows, phased in over three years (some positions may be jointly funded with the Library or NCSA); assistance in relocating CARLI so that GSLIS can use all of 501 E. Daniel St.; increased staff support for HR, grants, online program; increase to base operating budget to cover faculty start-up commitments, refurbishing lab facilities, renewing computer equipment.
- **Library:** 6 new tenure-system faculty (which we see as shared positions, primarily with GSLIS) and 4 new academic professional positions all positions phased in over 3 years, to collaborate on applied research projects, create advanced learning environments for undergraduates, develop resources required to support current and future work, including archiving of output of I^3 research and learning and to support the informatics-based activities of students, particularly in the scholars commons environments currently under development.
- **CS:** 10 new tenure-system faculty and 10 research scientists or postdoctoral fellows, phased in over three years (some positions may be jointly funded by NCSA). Increased base operating budget to support involvement in C&I minor, increased online education and outreach, Cultural Computing Program, and other interdisciplinary initiatives.
- **NCSA:** 20 new academic professional positions to collaborate with UI faculty to bring advanced information technologies into their research programs and into the classroom, with a focus on non-science and engineering areas, phased in over five years (science and engineering activities will largely continue to be supported through NCSA’s on-going programs). The efforts of these academic personnel will be split evenly between research-related and education-related activities.