

# The Living In the KnowEdge Society (LIKES) Community Building Project:

## Building Collaboration between Computing and Non-Computing Disciplines

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### INTRODUCTION

- Widespread use of Information and communications technologies (ICT) created a trend:
  - ICT perceived as part of daily life
  - New areas embrace ICT (selected)
    - Bioinformatics
    - Computational economics
- Computing still faces challenges (selected)
  - Declining student enrollment
  - Lack of diversity
- The Living In the KnowEdge Society (LIKES) Community Building Project launched in 2007
  - Part of NSF's CPATH program
  - Aims to revitalize undergraduate computing education

### VISION

Build a community to make systematic changes in:

- Teaching of computing concepts
- Application of computing concepts in both computing and non-computing disciplines

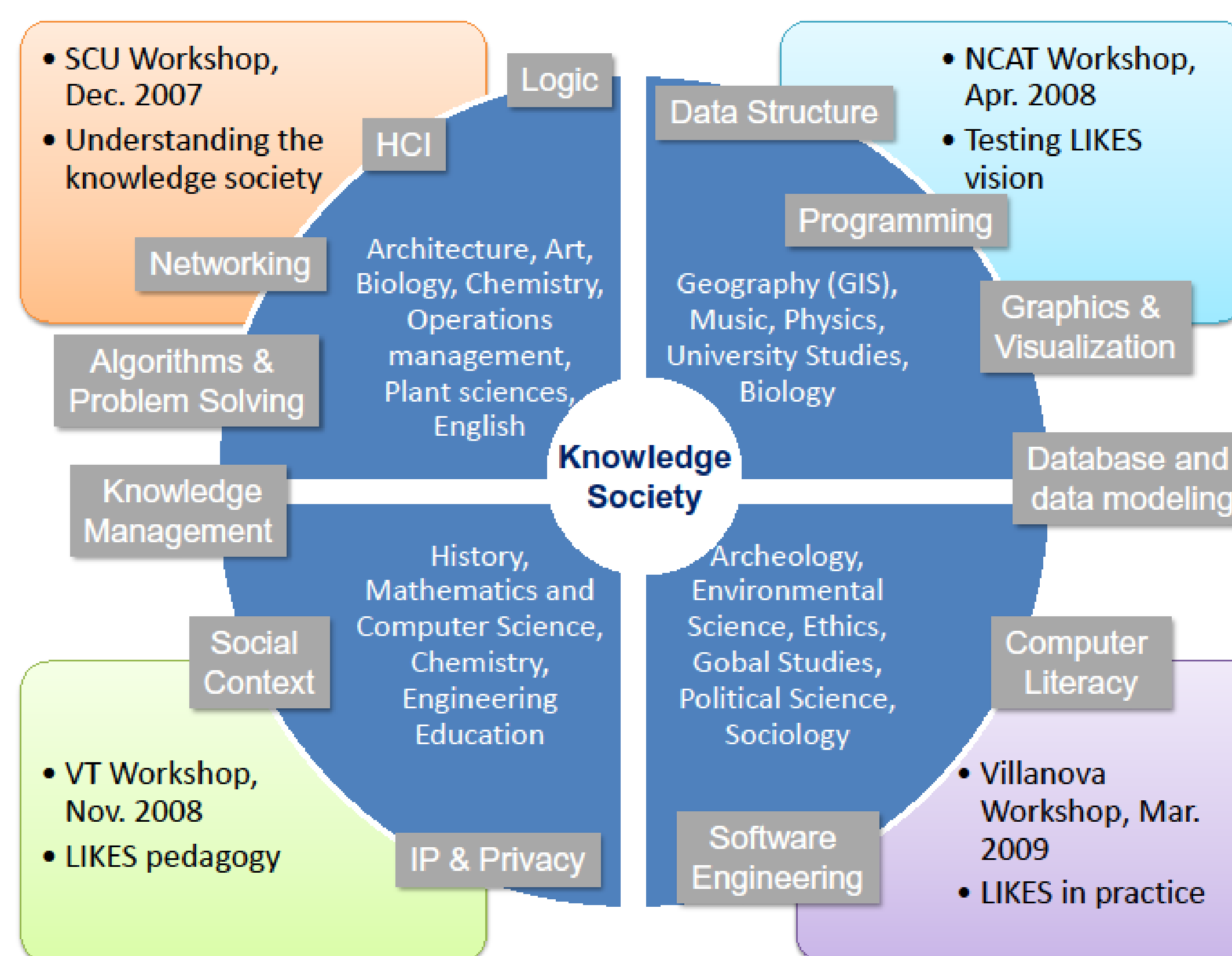
- **Goal 1:** Transform computing education so graduates can help build systems, services, tools, or new paradigms for the Knowledge Society
- **Goal 2:** Establish collaboration between computing educators and all other disciplines to support educating the next-generation of knowledge society builders
- **Objective 1:** Ensure that all interested undergraduates are prepared for living in the emerging Knowledge Society of the 21st Century
- **Objective 2:** Spread computational thinking, fundamental CS/IT paradigms, key computing concepts, and ICT paradigms across the Knowledge Society

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### WORKSHOPS



### SUCCESSES, GRAND CHALLENGES

- Successes:** New courses created in four sites
- VT: Introduction to LIKES, LIKES capstone
  - SCU: Information Technology, Business and Society
  - NC A&T: Introduction of Web Science
  - Villanova: The Laptop Instrument (CS + Music)
- Grand challenges:** Identified from the workshops
- Preparing students for scholarship and work in collaborative environments
  - Information literacy and critical thinking regarding the technology
  - Enticing faculty to incorporate computational thinking and collaborate with each other
  - Limitations in software tools and their use
    - Visualization/simulation for large classes
    - Lack of tools for specific purposes
    - Disconnect between humanity's needs and the developers of the tools (making usable tools)
  - Archiving limitations
  - Lack of research support (e.g., funding, etc.)
  - Deep understanding and ability to match abstractions with problems in various contexts through modeling/using
  - Moving from massive amount of data to hypothesis generation to testing
  - Spreading LIKES to other disciplines and implementing the LIKES process in terms of maintainability (e.g., incorporation of new computing concepts dynamically – supercomputing/grid computing/cloud computing)

### FUTURE PLANS

- **LIKES Workshop at Villanova** (Mar. 20-21, 2009)
  - Areas include:
    - Archaeology
    - Ethics
    - Political Science
    - Sociology
    - Environmental Science
    - Global Science
- **Faculty Development Institute at Virginia Tech** (Jul. 21-23, 2009)
  - Discussion of computational thinking
  - Introduction of visualization
  - Development of interactive educational resources
  - Forming a LIKES community at Virginia Tech campus
- **Identifying more LIKES-Designated courses at Virginia Tech.** Current areas include:
  - Computer Science
  - Economics
  - English
  - Mathematics
  - Philosophy
  - Statistics



### ONLINE COMMUNITIES

- We invite you to join our community**
- LinkedIn.com: LIKES Educators
  - Facebook.com: LIKES, LIKESVT (for VT students)
  - Second Life Group: LIKES
  - Virginia Tech's site scholar.vt.edu: LIKES Team, LIKES Development and LIKES students

### CONTACT INFORMATION

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