



SAKAI **LIKES** INITIATIVE:
Living In the Knowl**E**dge **S**ociety
at Sakai Regional Conference, Nov. 2008, VT

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plus others at VT, and at NC A&T, Santa Clara, Villanova

Part I: What is LIKES?

- ▶ Vision, Goals, Objectives
 - ▶ Diagram
 - ▶ Needs, Challenges
 - ▶ Workshops
 - ▶ Community development
 - ▶ Grand challenges
 - ▶ New courses
 - ▶ Future plans
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- ▶ Part II. How does LIKES relate to/benefit from SAKAI?

Vision, Goals, Objectives

▶ GOALS

- Transform computing education so graduates can help build (systems, services, tools, ... for) the knowledge society.
- Establish collaboration between computing educators and all other disciplines to guide the emergence of the knowledge society.

▶ OBJECTIVES

- Ensure that all interested undergraduates are prepared for living in the emerging knowledge society of the 21st Century.
- Spread computational thinking, fundamental CS/IT paradigms, key computing concepts, and ICT application across the knowledge society (and all disciplines).

Overall LIKES Objectives

- ▶ Students should have the ability to apply
 - ▶ Computing concepts
 - ▶ Methods
 - ▶ Computational thinking skills

to the needs of the emerging knowledge society,
in modern times and in the future

Diagram

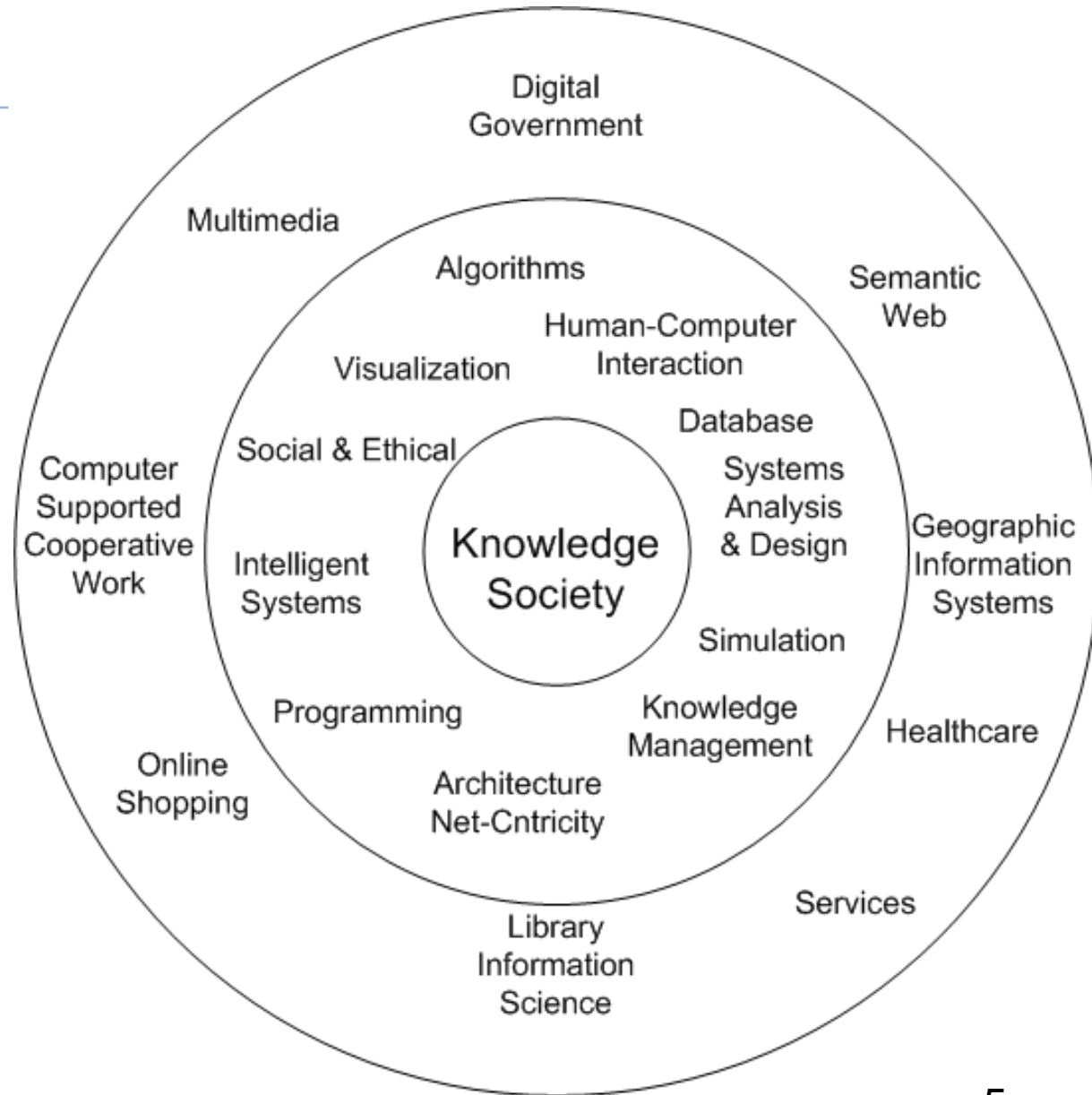
- Promote
- Educate
- Spread
- Utilize

Computing concepts

Computing tools

Computational thinking

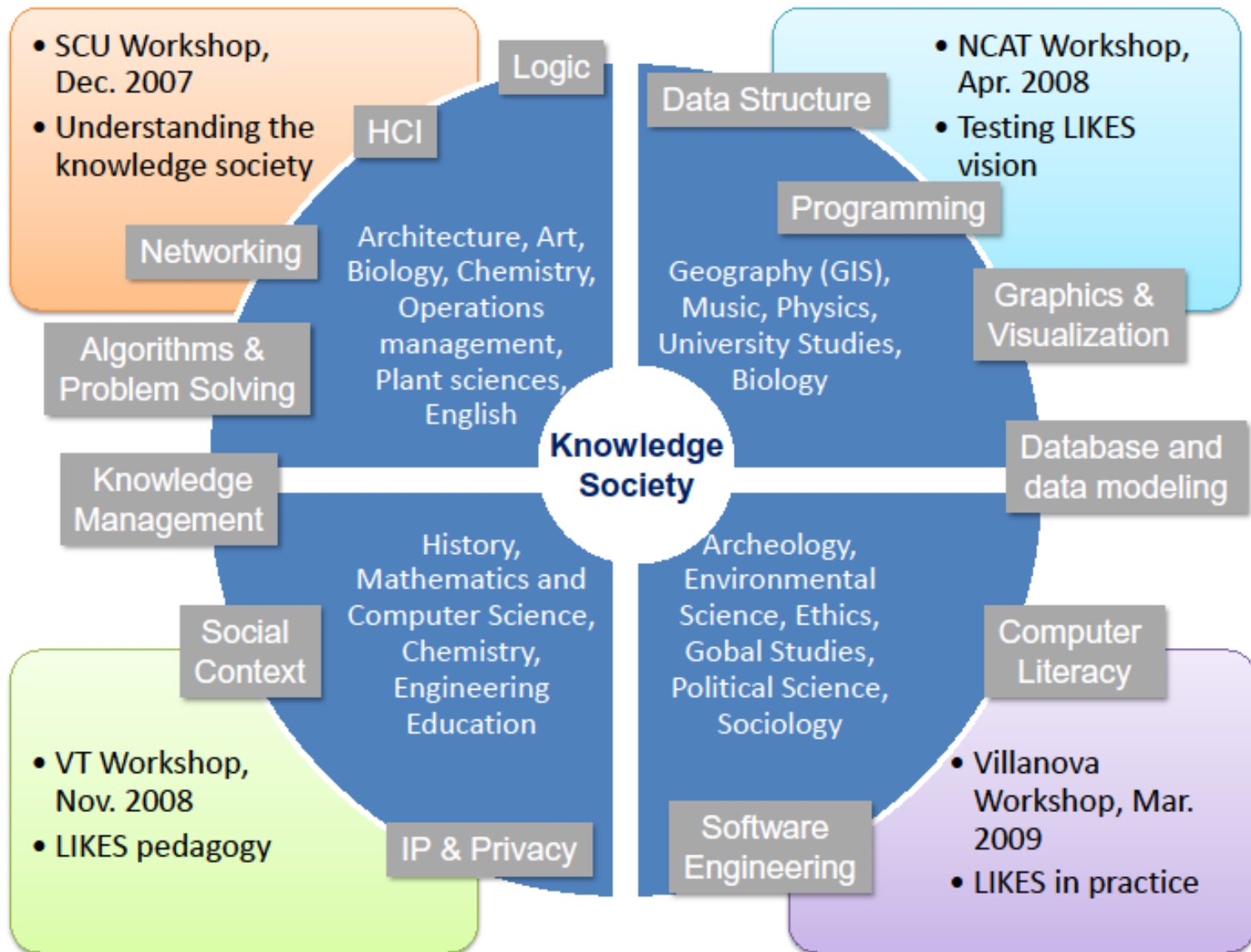
Collaboration among different disciplines



Needs, Challenges

- **Collaboration** across disciplines driven by the knowledge society's educational needs.
- Support for computing-related **life-long learning** as job and work needs/demands shift.
- Educational **resources** and pedagogical **approaches** to support both the emerging needs of learners
 - in computing disciplines, and
 - in related inter-disciplinary collaborations.
- Shifting from literacy, to fluency, to **deep contextualization of computational thinking**.

Workshops



Community Development

- ▶ Online communities are formed to facilitate collaboration, communication, and sharing of ideas about LIKES
- ▶ **LinkedIn**: LIKES Educators
- ▶ **Facebook**:
 - LIKES
 - LIKESVT (for VT students)
- ▶ **Second Life**: LIKES
- ▶ **Sakai** (scholar.vt.edu):
 - LIKES Team (for project team)
 - LIKES Development (for e-portfolio development)
 - LIKES introduction (course)
 - LIKES students (ongoing course)
 - Supporting Virginia Tech students interested in LIKES:

LIKES Community at Virginia Tech

- ▶ A cohort of students interested in LIKES
- ▶ Getting a certificate upon graduation
- ▶ Supported with a speaker series, online community, and a
- ▶ “Pathway” through the core curriculum (CLE)
- ▶ With “Intro to LIKES”, “LIKES capstone”, and, in between:
- ▶ 12 credit hours of LIKES-Designated Core Courses, that cover:
 - ▶ 1.1 Key concepts related to computing - OR
 - ▶ 1.2 computing-type activities / use of computing systems and software - AND
 - ▶ 2.0 Living in Society
- ▶ Summarized as:
 - ▶ Computational skills: computational thinking and/or use of computing systems, and
 - ▶ Application of computational skills for societal improvements

Grand Challenges

- **Grand challenges identified from the workshop**
 1. Preparing students for scholarship and work in collaborative environments
 2. Information literacy and critical thinking regarding the technology
 3. Enticing faculty to incorporate computational thinking and collaborate with each other
 4. 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)

(continued below)

Grand Challenges (continued)

- **Grand challenges identified from the workshop**
 5. Archiving limitations
 6. Lack of research support (e.g., funding, etc.)
 7. Deep understanding and ability to match abstractions with problems in various contexts through modeling/using
 8. Moving from massive amounts of data to hypothesis generation to testing
 9. Spreading LIKES to other disciplines and implementing LIKES process in terms of maintainability (e.g., incorporation of new computing concepts dynamically – supercomputing/grid computing/cloud computing)

New Courses

- 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)

Future Plans

- **LIKES Workshop at Villanova** (Mar. 20-21, 2009)
 - Areas not included in the previous workshops will be discussed, e.g., Archaeology, Ethics, Political Science, Sociology, etc.
- **Faculty Development Institute** at Virginia Tech (Jul. 21-23, 2009)
 - Three day session to enhance incorporation of LIKES spirit into undergraduate courses by: discussing computational thinking, introducing visualization, developing interactive educational resources, and forming a LIKES community on the Virginia Tech campus
- **Identifying more LIKES-Designated courses at Virginia Tech**
 - There are LIKES-designated courses in the Curriculum for Liberal Arts Education (CLE). The areas included are Computer Science, Economics, English, Mathematics, Philosophy, and Statistics. We will keep identifying courses and adding to the list, which meet criteria to be LIKES-designated. Students can work, at the same time, on both LIKES and core curriculum requirements.

Part II:

How does LIKES relate to/benefit from SAKAI?

- ▶ Faculty Development Institute (FDI) 2009
- ▶ CS/BIT/ACIS 1614
- ▶ LIKES cohort
- ▶ Community building
- ▶ E-Portfolio, Matrix
- ▶ Assessment of learning
- ▶ Support of critical analysis

Faculty Development Institute 2009

- ▶ Jul. 21-23, 2009
- ▶ Include information and techniques for:
 - ▶ Finding and adapting **high quality educational resources** from the National Science Digital Library (NSDL, www.nsdsl.org, and www.computingportal.org) or similar repositories;
 - ▶ Adapting "**Web 2.0**" or other social networking software systems for instructional use within specific courses;
 - ▶ Using **Second Life** (virtual environment) for supporting collaboration, simulation, visualization, and interaction related to specific course goals;
 - ▶ **Enhancing courses** in the Curriculum for Liberal Education (CLE) so they are "LIKES-designated", and appeal to students focused on the LIKES CLE pathway.

CS/BIT/ACIS 1614

- ▶ I-credit LIKES introduction course
- ▶ Beginning of the process to be LIKES-certified
- ▶ Readings include:
 - ▶ The World is Flat (Friedman)
 - ▶ Information Systems (free online book)
- ▶ Introducing students to Sakai (Scholar)
- ▶ Introducing use of e-portfolios
- ▶ Later, after the series of LIKES-designated courses, in the LIKES capstone, the e-portfolios will be analyzed and discussed to help integrate contextualized understanding of computational thinking across the disciplines.

LIKES Cohort

- ▶ Supported by the “LIKES student” ongoing course site in Scholar
- ▶ Will have all students who are, or have been, interested in LIKES, at all levels
- ▶ Students added when take “Intro to LIKES” course
- ▶ Useful for
 - ▶ announcements
 - ▶ calendar of talks and social events
 - ▶ forums, blogs, chats, wiki
 - ▶ sharing resources, and
 - ▶ other collaboration and community building among students

Community Building

- ▶ Provides common experience across program
- ▶ Supports knowledge maintenance
- ▶ Supports reconvening in capstone courses and sharing experiences

E-Portfolio

- ▶ Web-based, user-centered platform
- ▶ Allows students to create customized electronic portfolios of their work / goals / achievements
- ▶ Use of e-Portfolios in LIKES context
 - ▶ Assessment of learning
 - ▶ Support of critical analysis
 - ▶ (please see next slides for details)

E-Portfolio - Matrix

English: Professional Writing

↔ Matrices ⓘ

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Professional Writing

Use this matrix to document your progress as a student in the Professional Writing Program. By uploading texts into matrix cells that correspond to the courses you've taken in the program and reflecting upon those texts in conjunction with the learning objectives in those courses, you'll demonstrate the impact you believe the assignments have had on you. You'll also provide a record of your growth as a writer, and in so doing you'll enable your teachers to assess the work occurring in and out of their classrooms.

Click on a cell to view/edit

Professional Writing	3104	3804	3814	3824	4804	4814	4864	4874
Analyze and Write on Rhetorical Situations								
Edit Texts								
Discourse and Rhetorical Criticism								
Design a Document								
Presentation and Management Skills								

Assessment of Learning

- ▶ For each individual course
 - ▶ Intro course and capstone course
 - ▶ CLE courses
 - ▶ Other courses (in-major courses, etc.)
- ▶ For related events (speaker series, etc.)
- ▶ For entire initiative as a whole
- ▶ Student / faculty self-assessment

Support of Critical Analysis

- ▶ Students upload:
 - ▶ Assignments
 - ▶ Reflections on those assignments
- ▶ Supports critical thinking about relationships between courses
- ▶ Promotes / strengthens interdisciplinary thinking
- ▶ Supports critical writing, analysis, and expression

Thank you!

Any questions?

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www.livingknowledgesociety.org