NSF Second Workshop on Computing in Context: Intelligence and Security Informatics

March 5, 2014

Atlanta, GA

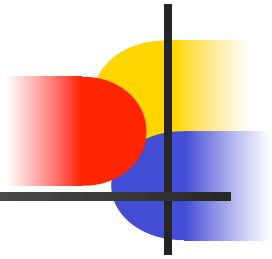
http://cbia.stetson.edu/cic

SIGCSE ATLANTA 2014

STETSON UNIVERSITY
School of Business Administration
Center for Business Intelligence and Analytics

Work supported by the NSF under Grants Nos. DUE-1141209 and by Stetson University. Findings, conclusions, or recommendations expressed are those of the authors and do not necessarily reflect NSF's views.

Workshop Participants



- Sandy Kearney, CiC Project Evaluator
- Albert Chan, Fayetteville State U.
- Wingyan Chung, Stetson University, DIS
- Daniel Plante, Stetson U., Computer Science
- Ray Villalobos, Seminole St. College / Lynda.com
- Joe Woodside, Stetson University, DIS

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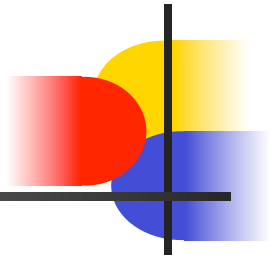
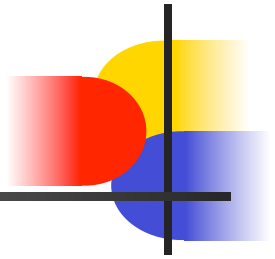
Thank you!

Agenda



- Introduction
- The CiC Project Workshop: ISI
- Workshop 1 Outcome
- Workshop 2 Plan
- Ongoing and Future Works
  - Evaluation
  - Dissemination
  - Further work

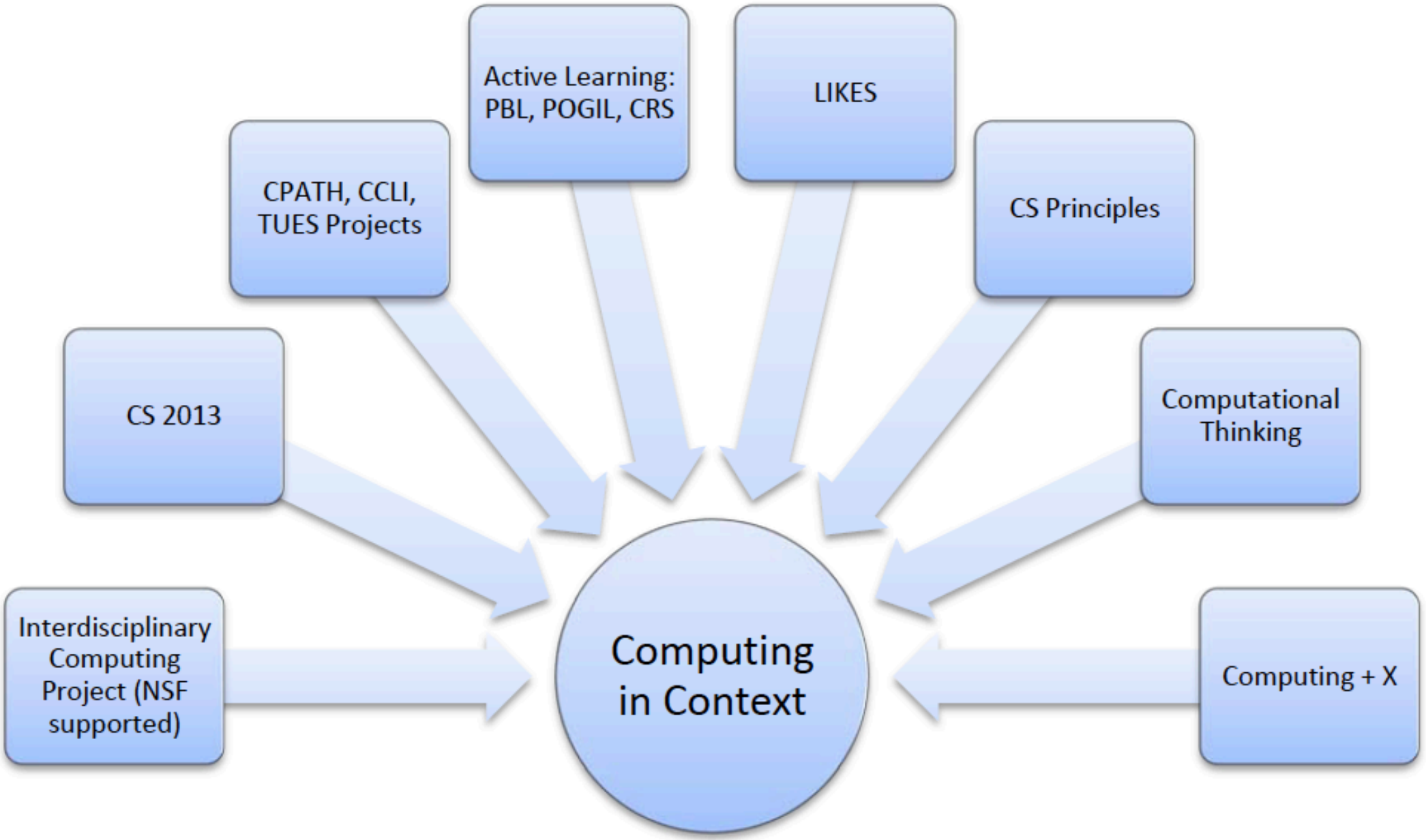
Background



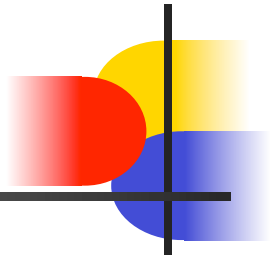
- Enrollment, Diversity, Undergraduate Program, Myths
- Students need to learn appropriate concepts in computing and apply them in other fields
- We focus on breadth of relationships between computing and other disciplines
- Methods: Active learning, problem-based learning, process-oriented guided inquiry

Computing in Context Project

- Collaboration among 4 institutions
  - Villanova, VT, NCAT, Stetson
  - Project span: Aug. 2012 – Jul. 2014
- History
  - LIKES Project (2007-2011)
  - NSF TUES
- Current Project Areas
  - Computational Linguistics, Computing and Music, ISI, Web Science

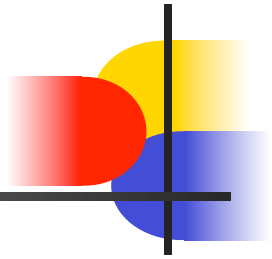

Active Learning: PBL, POGIL, CRS
LIKES
CPATH, CCLI, TUES Projects
CS Principles
CS 2013
Computational Thinking
Interdisciplinary Computing Project (NSF supported)
Computing in Context
Computing + X

Project Goal



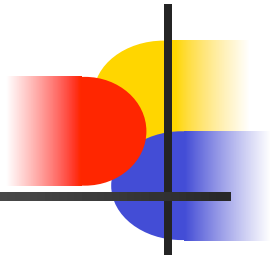
- To develop, evaluate, and disseminate course materials and teaching modules that use active learning pedagogies and that weave ideas of computing together with ideas from the ISI discipline
  - Course materials and teaching modules
  - Active learning
  - Ideas of computing
  - ISI discipline

Some terms



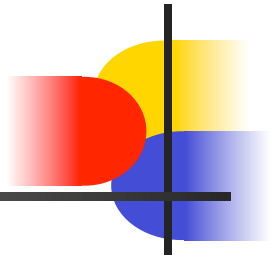
- Active learning
  - Problem-based learning, process-oriented guided inquiry, inquiry based learning
  - "What can I observe/infer/conclude? Am I right? Why?"
- Ideas of computing
  - Data / information / knowledge
  - Algorithm & Problem Solving
  - Graphics & Visualization
  - Modeling & Simulation

Intelligence and Security Informatics (ISI)



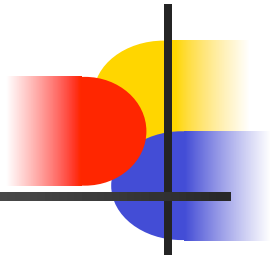
- A cross-disciplinary field with many stakeholders
  - Researchers in IT, CS, public policy, bioinformatics, behavioral studies
  - Law enforcement agencies, IT consultants and practitioners
  - Supports counterterrorism and homeland security missions of anticipation, interdiction, prevention, preparedness and response to terrorist acts.

ISI Defined



- Definition (ISIConference2013.org)
  - The development of advanced IT, systems, algorithms, and databases for international, national and homeland security related applications, through an integrated technological, organizational, and policy-based approach
- Relationship with CS / IS
  - AI, ML, data/text/web mining
  - Database systems, big data
  - Computational linguistics
  - Risk management
- IEEE ISI annual conference began in 2003

Educational Development



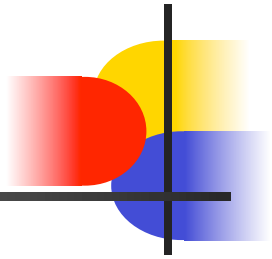
- "Web computing" – University of Arizona
  - Security informatics
- M.S. in Security Informatics – Indiana University, School of Informatics and Computing
  - Also has security informatics track in PhD program
- SI Track in PhD program, Penn State U, College of IST
  - Cyber security
- M.S. Course in ISI, U. Abertay Dundee (UK)

  - Most programs / courses are at graduate level. Little work found on preparing UG students for ISI field.

ISI in the CiC Project: Tasks

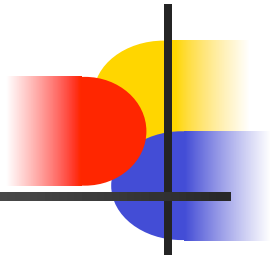
- To develop new problem-based teaching modules, curricular guidelines, and materials in ISI at UG level
- To implement the modules at UG courses
- To evaluate impact of the use of the modules
- To disseminate the modules, guidelines, and materials widely for instructor use

Module Development



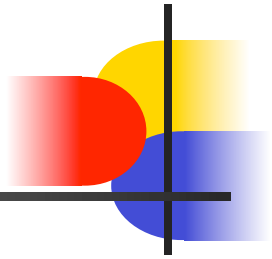
- Module
  - An independent session of learning
  - Consists of goal, motivation, body of knowledge, exercise, and evaluation
- Module usually contains a context
  - E.g., cyber crime investigation, security analysis

Workshop 1 Outcomes



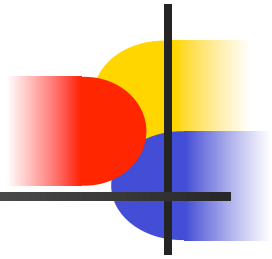
- New modules developed, implemented, and evaluated by participants
  - Cybercrime, forensics, mobile security, web data privacy, privacy sentiment
- Documenting experience gained
  - SIGCSE 2014 Publication
  - Other publications / presentations
- New collaborations
  - Grant / research / outreach efforts

Workshop 2 Plan



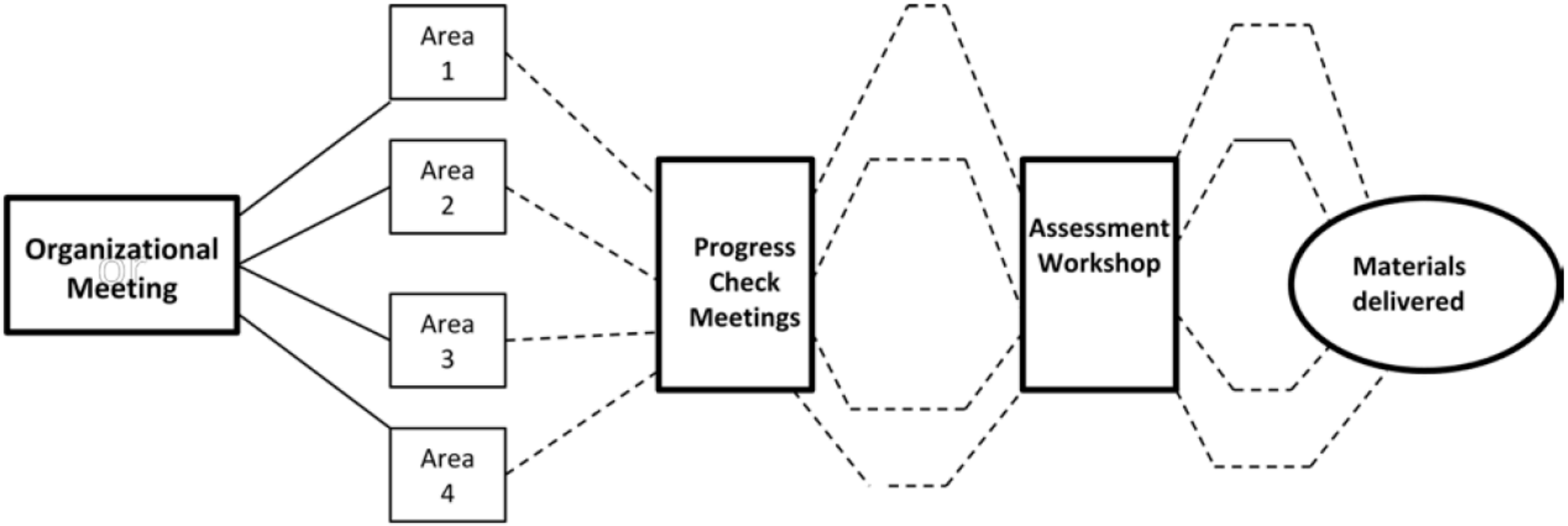
- Evaluation of Modules
- Further Development / Refinement of Modules with Evaluation Plan
- Future Plan
  - Module Development and Refinement
  - Module Evaluation
  - Module Dissemination
  - Workshop 3
  - Publication

Workshop Logistics



- Reimbursement
  - Travel, subsistence
  - (Please keep all receipts)
- Future meeting
  - Workshop 3
- Communication

Tentative Timeline



Feb. 2013

Summer 2013

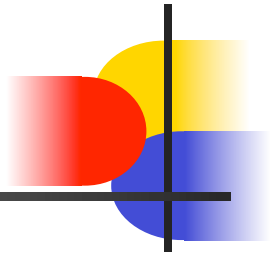
Workshop 2 Mar. 5, 2014

* Apr - Jul. 2014

* TBD

* Tentative

Workshop 2 Schedule



Date:	March 5, 2014 (Wednesday)
Location:	Hyatt Regency Atlanta
	265 Peachtree Street NE, Atlanta, GA 30303
Direction:	http://goo.gl/z2yl9e (from Atlanta Airport (ATL) to Hyatt via metro)
Phone:	(408) 771-6260 (Wingyan Chung's cell)

Schedule

1:00 - 1:15 pm	Introduction and Project Background
1:15 - 1:45 pm	Evaluation of Curricular and Teaching Modules (Sandy)
1:45 - 2:45 pm	Module Development and Evaluation (Team members)
2:45 - 3:00 pm	Break
3:00 - 4:30 pm	Module Development and Evaluation (Team members)
4:30 - 5:15 pm	Group Discussion: ISI Curriculum/Material Development
5:15 - 6:00 pm	Group Discussion: Evaluation Plan and Strategy
6:00 pm	Workshop Completed (Group Dinner Afterward)

Workshop 3: Proposed Ideas

- Fund to support additional goal-oriented activities completed before the workshop
  - Student engagement (student testimonies, performance evaluation)
  - Teacher engagement (per school, per teacher, dissemination)
  - Journal publications (ACM TOCE, IEEE TOE)
  - Other new developments (tools, constructs, materials, and findings)
- Deliverables can include reports, papers, software, presentations, and Web documentation

Thank you!!

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