

Consortium for Computing Sciences in Colleges
in cooperation with

The Association for Computing Machinery
Special Interest Group on Computer Science Education
presents

CCSCNE-2012

The Seventeenth Annual Consortium for Computing Sciences in Colleges Northeastern Conference

Held At:



Quinnipiac University
Hamden, CT

Conference Supporters

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Program of Events Friday, April 27

Registration (10:00AM – 5:00PM)

Registration Burt Kahn Court
Lobby

Programming Contest (7:45 AM - 12:45 PM)

7:45 Breakfast and registration of teams Rec Center
Court 3

8:45 Initial meeting & presentation of problems Rec Center
Court 3

9:00 Contest Rec Center
Court 4

12:00 Luncheon for the teams Rec Center
Court 3

Pre-Conference Workshops (9:00 AM - 12:00 PM)

Workshop 1: Rec Center
Software testing (in Java) from the beginning Studio A
Viera Proulx, Northeastern University, MA

Workshop 2: Rec Center
Reducing the learning curve in an introductory Athletic Conf. Room
programming course using Visual Logic©
Dee Gudmundsen, The College of Saint Rose, NY
Lisa Olivieri, Chestnut Hill College, PA
Namita Sarawagi, Rhode Island College, RI

Workshop 3: Rec Center
Learning FOSS collaboration tools & techniques through guided inquiry activities Studio B
Clif Kusssmaul, Muhlenberg College
Heidi Ellis, Western New England University
Gregory Hislop, Drexel University, PA

Workshop 4: Mancheski Seminar Room
Teaching CS0 with mobile apps using App Inventor for Android
Hal Abelson, Massachusetts Institute of Technology, MA
Ralph Morelli, Trinity College, CT
Stella Kakavouli, Wellesley College, MA
Eni Mustafaraj, Wellesley College, MA
Franklyn Turbak, Wellesley College, MA

Vendor Displays (10:00 AM - 5:00 PM)

Vendor Display Burt Kahn Court

Welcome (1:00 PM - 1:15 PM)

Welcome
Mark A. Thompson
Senior VP of Academic & Student Affairs, Quinnipiac University

Burt Kahn Court

Plenary Session 1 (1:15 PM - 2:15 PM)

Computing Education Research: Who is it for? Oh, and why?
Sally Fincher
Professor of Computing Education, University of Kent, Canterbury, UK

Burt Kahn Court

Concurrent Session 1(2:30 PM - 3:45 PM)

Paper Session 1A: Curricular Issues
(Session chair: Barbara Zimmerman)

Rec Center
Studio A

Let a hundred contexts bloom: experimenting with introductory computer science
Valerie Barr, Union College, NY

Early introduction of advanced CS topics to increase student satisfaction
Deborah Sturm, College of Staten Island (CUNY), NY
Roberta Klibaner, College of Staten Island (CUNY), NY

Should database courses be required in computer science programs?
Lisa MacLean, Wentworth Institute of Technology, MA

Panel Session 1B:

Rec Center
Studio B

Lessons learned from teaching App Inventor
Franklyn Turbak, Wellesley College, MA
Hal Abelson, MIT, MA
Ralph Morelli, Trinity College, CT
Eni Mustafaraj, Wellesley College, MA
Chinma Uche, Greater Hartford Academy of Math and Science

Paper Session 1C: Visual elements
(Session chair: Evelyn Stiller)

Mancheski Seminar Room

Video vs. text for lab instructions and concept learning
Eric Breimer, Siena College, NY
Jami Cotler, Siena College, NY
Robert Yoder, Siena College, NY

A visual task manager application for individuals with autism
Joo Tan, Kutztown University of Pennsylvania, PA
Heather Duncan, Kutztown University, PA

Vendor Session

Athletic Conference Room

Peer-Based Learning with Piazza

Piazza is a free online platform for class Q&A highlighted in several sessions and presentations at SIGCSE 2012 in Raleigh, NC, including Dan Garcia's "Technology that Educators of Computing Hail" session. Noted instructors who've used Piazza will join us for a hands-on workshop where we will learn how to:

- Solicit high levels of participation from students;
- Enable shy students to ask questions with varying degrees of privacy;
- Save time and eliminate redundant effort in larger classes with multiple TA's

Break (3:45 PM - 5:00 PM)

Faculty Posters

Burt Kahn Court

Concurrent Session 2 (5:00 PM - 6:15 PM)

Paper Session 2A: *Teaching beyond the major*
(Session chair: Michael Jonas)

Rec Center
Studio A

Programming for the humanities: using targeted games

Evelyn Stiller, Plymouth State University, NH

Ethics for non-computer majors in a digital world

Barbara Zimmerman, Villanova University, PA

AND, OR, NOT: teaching logic in CS0

Lisa Michaud, Merrimack College, MA

Tutorial 2B

Rec Center
Studio B

Hands-on computing with Arduino

John Vaughn, Hobart and William Smith Colleges, NY

Panel 2C

Mancheski Seminar Room

Collaboration techniques facilitate student learning

Carolee Stewart, Kean University, NJ

Mary V. Connolly, Saint Mary's College, IN

Margaret Menzin, Simmons College, MA

David Arnow, Brooklyn College, NY

Jeffrey A. Stone, Penn State University, PA

Vendor Session

Athletic Conf Room

EMC Academic Alliance and Virtual Labs with NETLAB+ by NDG

You learn what technology-based courses, training, and benefits are available through the EMC Academic Alliance program and about the virtual storage labs available through our partner, NDG

Social Hour (6:30 PM - 7:30 PM)

Student Posters

Burt Kahn Court

Dinner Banquet (7:30 PM - 8:30 PM)

Dinner Banquet

Burt Kahn Court

Saturday, April 28

Continental Breakfast (7:30 AM - 8:30 AM)

Continental Breakfast

Burt Kahn Court

Registration (8:00 AM - 10:00 AM)

Registration

Burt Kahn Court (Lobby)

Vendor Displays (8:00 AM - 12:00 PM)

Vendor Displays

Burt Kahn Court

Concurrent Session 3 (8:30 AM - 9:45 AM)

Round Table Session 3A:

Burt Kahn Court

Round Table: Computer Science in the K-12 classroom

Members of the Connecticut Chapter of the Computer Science Teachers Association

Panel 3B

Rec Center
Studio A

Mobile application development in computing curricula

Stoney Jackson, Western New England University, MA
Heidi Ellis, Western New England University, MA
Stan Kurkovsky, Central Connecticut State University, CT
Lori Postner, Nassau Community College, NY
Eni Mustafaraj, Wellesley College, MA

Paper Session 3C: *Reflecting beyond the technology*
(Session chair: Patricia Morreale)

Rec Center
Studio B

Also **your* job to learn! Helping students to reflect on their learning progress*

Stella Kakavouli, Wellesley College, MA

Emphasizing ethics and privacy preservation in an undergraduate data mining course

Trudy Howles, Rochester Institute of Technology, NY

Plenary Session 2 (10:00 AM - 11:00 AM)

Computer Science: Past, Present, and Future

Burt Kahn Court

Ed Lazowska, *Bill & Melinda Gates Chair in Computer
Science & Engineering, University of Washington*

This keynote is co-sponsored by ACM/SIGCSE.

Break (11:00 AM - 11:30 AM)

Break

Burt Kahn Court

Concurrent Session 4 (11:30 AM - 12:45 PM)

Paper Session 4A: Technologies
(Session chair: Mark Sherman)

Rec Center
Studio A

Teaching mobile using Cabana
Paul Dickson, Hampshire College, MA

Using a PIC32 microcontroller and simulator to teach computer organization
Robert Ravenscroft, Rhode Island College, RI

The development of a course covering scripting languages and their applications
Charles Stevenson, Salem State University, MA

Tutorial 4B

Rec Center
Studio B

Hybrid cloud tutorial: from planning to classroom
David G. Rilett, Wentworth Institute of Technology, MA
Charlie Wiseman, Wentworth Institute of Technology, MA

Paper 4C: Broader impact
(Session chair: Valerie Barr)

Mancheski Seminar Room

Measuring the impact of computational thinking workshops on high school teachers
Patricia Morreale, Kean University, NJ
Catherine Goski, Kean University, NJ
Luis Jimenez, Kean University, NJ
Carolee Steward-Gardiner, Kean University, NJ

The road to successful academic service learning projects making the right choices
Richard Scorce, St. John's University, NY

Adding micro labs to aid professional development in information technology class curriculum
Michael Jonas, UNH at Manchester, NH

Box Lunch (12:45 PM - 1:30 PM)

Box Lunch (not included in registration fee)

Burt Kahn Court

Membership Meeting (1:30 PM - 2:00 PM)

Membership Meeting

Mancheski Seminar Room

Board Meeting (2:00 PM - 4:00 PM)

Board Meeting

Mancheski Seminar Room

Faculty Posters

- Poster 1: **Advanced study cases for numerical analysis**
Vladimr Riabov, Rivier College, NH
- Poster 2: **Using undergraduate teaching assistants in introductory computer courses**
Sarbani Banerjee, Buffalo State College, NY
Ramona Santa Maria, Buffalo State College, NY
- Poster 3: **Integrating computer ethics components into the computer science curriculum**
Yana Kortsarts, Widener University, PA
Adam Fischbach, Widener University, PA
- Poster 4: **Evaluating peer reviews of writing using fault injection**
Delbert Hart, SUNY Plattsburgh, NY
- Poster 5: **Developing a project-based curriculum for the design and analysis of algorithms for intractable problems**
Andrea Lobo, Rowan University, NJ
Ganesh Baligg, Rowan University, NJ
- Poster 6: **Student-pull instead of instructor-push: in preparation for a student learning dashboard**
Mihaela Sabin, University of New Hampshire, NH
- Poster 7: **Leveraging online/distance learning methodologies in face to face instructions**
Susan Imberman, College of Staten Island, NT
- Poster 8: **Graphics programming on Android**
Michael Werner, Wentworth Institute of Technology, MA
- Poster 9: **What do students learn? Investigating factors in introductory courses**
Matthew Hertz, Canisius College
Sarah Ford, University of Massachusetts (Amherst), MA
- Poster 10: **Critical thinking in an introductory programming course**
Sarah Tasneem, Eastern Connecticut State University, CT

Student Posters

- Poster 5001: **Circuit design on CPLD chips using Verilog**
Tiffany Q. Liu, Smith College, Northampton, MA
- Poster 5002: **Kinect-Based Choreography**
In Kyung Lee, Smith College, Northampton, MA
- Poster 5003: **Implementing a Steganography Algorithm in the Java Environment**
Edwin Dauber, Widener University, Chester, PA
- Poster 5004: **Web Application for High School Programming Contest**
Louis Szgalsky Widener University, Chester, PA
- Poster 5006: **Spatial Complexity Based Preprocessing for Hyperspectral Imagery**
Terrance Hall, Lincoln University, Lincoln U., PA
Kimberly Pirate, Montclair State Univ., Montclair, NJ
- Poster 5007: **Android Development**
Stephen Bryant, Daniel Webster College, Nashua, NH
John Plaisted, Daniel Webster College, Nashua, NH
- Poster 5008: **The Double Helix of Computer Science and Biology: Horizontal Transfer in Archaea and Bacteria Genomes**
Kelsey Hichens, Wheaton College, Norton, MA
Emily Baldwin, Wheaton College, Norton, MA
- Poster 5010: **Constructing a Portable Computer Cluster Using Laptops**
Wyatt Gorman, SUNY Geneseo, Geneseo, NY
- Poster 5011: **Visualizing the Game of Life on a Parallel Computing Cluster**
Herb Susmann, SUNY Geneseo, Geneseo, NY
- Poster 5012: **Medical Image Processing for 3D Visualization**
Binh Phan, Salem State University, Salem, MA
- Poster 5014: **Intro to Arduino**
Timothy Gee, Muhlenberg College, Allentown, PA
- Poster 5015: **Dynamic Selection of k Nearest Neighbors in Instance-based Learning**
Carl Hulett, Oakland University, Rochester, MI
- Poster 5016: **Learning to Classify Robot Sensory Experiences Using Bags of Patterns**
Claudia D'Adamo, Wheaton College, Norton, MA
Sedra Davis, Wheaton College, Norton, MA
Anthony Castellani, Wheaton College, Norton, MA
- Poster 5017: **A GPU Implementation of Block Cholesky Decomposition**
Jiajia Zhao, Trinity College, Hartford, CT
- Poster 5018: **HFOSS: First Responder Android Mobile Phone Application**
Jesse Aboh, St. John's University, Queens, NY
Vincent Gaviria, Stony Brook University, Stony Brook, NY
Gergana Stoykova, St. John's University, Queens, NY
- Poster 5021: **Real-time Extraction and Simulation of Facial Features**
Najir Pandey, Salem State University, Salem MA
- Poster 5022: **Application of Genetic Programming to Verilog Hardware Design**
K. Matthew Belland, Olin College of Engineering, Needham, MA
Paul Booth, Olin College of Engineering, Needham, MA
Jared Kirschner, Olin College of Engineering, Needham, MA
Seungwhan Moon, Olin College of Engineering, Needham, MA
- Poster 5023: **Using the Microsoft Kinect as a Computer Interface Control**
Peter Bailie, College of Saint Rose, Albany, NY

- Poster 5025: **Creating a Musical Instrument using a Kinect Camera**
Stephen Kowalewski, SUNY Geneseo, Geneseo, NY
- Poster 5026: **Simulating the Emission Intensity Decay following Pulsed Excitation in Solids**
Megan Geen, Wheaton College, Norton, MA
- Poster 5028: **Interactive Visualizations of Data on High Yield Investment Programs**
Jie Han, Wellesley College, Wellesley, MA
- Poster 5029: **Watchdog: Proactively Ensuring Security and Privacy on the Web**
Paul Sawaya, Hampshire College, Amherst, MA
- Poster 5032: **Video Game Design in Python**
Walter Promowicz II, SUNY College at Buffalo, Buffalo, NY
- Poster 5033: **Waste Not, Want Not Resource-based Garbage Collection in a Shared Environment**
Stephen Kane, Canisius College, Buffalo, NY
- Poster 5034: **Human Interface Guidelines for Mobile Applications**
Bryan Randall, Quinnipiac University, Hamden, CT
- Poster 5035: **Mobile Web App Development Framework - Comparison and Analysis**
Jebish Tuladhar, Quinnipiac University, Hamden, CT
- Poster 5036: **Addicting Games: Why We Are Compelled To Play**
Andrew Richardson, Quinnipiac University, Hamden, CT
- Poster 5037: **How Learning from a Video Game is impacted by a Person's Characteristics**
Jonathan Mucha, Quinnipiac University, Hamden, CT
- Poster 5038: **Predicting Disease Outbreaks using Support Vector Machines**
Nicolae Dragu, Trinity College, Hartford, CT
- Poster 5040: **Automated Cost Analysis of a Higher-Order Language in Coq**
Jennifer Paykin, Wesleyan University, Middletown, CT
- Poster 5041: **Measuring the Efficiency of Mobile Technology Using an Adaptation of the Keystroke Level Model**
Jillian Kramer, Villanova University, Villanova, PA
- Poster 5042: **DEEP/PLACE: New London Hall**
Amy Barrett, Connecticut College, New London, CT
- Poster 5043: **Mobile Applications for a Sustainable Future: How Are Mobile Developers Contributing to Solving the Problems?**
Meghan Kenny, Pace University, New York, NY
- Poster 5044: **Parallel Option Pricing with Graphic Processing Units**
Gong Chen, Trinity College, Hartford, CT
- Poster 5045: **Scaling Office Hours: Efficiently Managing Live Q&A in Large Courses**
Tommy McWilliam, Harvard College, Cambridge, MA
- Poster 5046: **Learning to Recognize Computer Science Syllabi**
Nakul Rathod, Villanova University, Villanova, PA
- Poster 5047: **Computational Biology: Improving alignment of short DNA reads to bacterial genomes**
Shelley Wang, Wellesley College, Wellesley, MA
- Poster 5048: **Score to Audio Mapping: The Alignment and Mapping of Sheet Music to Audio Recordings**
Gyanendra Sharma, Connecticut College, New London, CT
- Poster 5049: **Developing AiptasiaBase, a public DNA sequence and annotation database for the sea anemone *Aiptasia pallida***
Joshua Klein, Vassar College, Poughkeepsie, NY
- Poster 5050: **Representing Expressive Types in Blocks Programming Languages**
Marie Vasek, Wellesley College, Wellesley, MA

- Poster 5055: **TurtleBlocks: Blocks for Constructing Tangible Turtle Tracings**
Karishma Chadha, Wellesley College, Wellesley, MA
Erin Davis, Wellesley College, Wellesley, MA
Emily Erdman, Wellesley College, Wellesley, MA
- Poster 5058: **Efficiency in Cryptography – Speeding to the secret**
Ryan Carey, Canisius College, Buffalo, NY
- Poster 5059: **PictureBlocks: A Language for Creating Tangible Artifacts**
Ana Smaranda Sandu, Wellesley College, Wellesley, MA
Olivia Kotsopoulos, Wellesley College, Wellesley, MA
- Poster 5060: **The impact of algorithmic trading in a simulated asset market**
Tim Walsh, Connecticut College, New London, CT
Bo Xiong, Connecticut College, New London, CT
- Poster 5061: **Classifying Twitter Accounts by Political Orientation**
Samantha Finn, Wellesley College, Wellesley, MA
- Poster 5067: **Fitting and Registration of Multi-Representation Models of Knee Cartilage Surfaces**
Stacie Waleyko, University of Rhode Island, Kingston, RI
- Poster 5070: **Computational Modeling of Dissociative Identity Disorder: Merging Psychological Theory with Computational Strategy**
Samantha Beard, Moravian College, Bethlehem, PA
- Poster 5071: **Pyty: A Static Type-Checker for Python**
Jeffrey Ruberg, Wesleyan University, Middletown, CT

About the Keynote Speakers

Sally Fincher

*Professor of Computing Education
University of Kent, Canterbury, UK*

Sally Fincher is Professor of Computing Education in the School of Computing at the University of Kent, where she leads the Computing Education Research Group. Her work is centrally concerned with the teaching and learning of Computing, with particular emphasis on teachers and teaching practices. She has worked on several major computing education projects, such as the Bootstrapping Research in Computer Science Education series, and the UK Sharing Practice project: <http://www.sharingpractice.ac.uk>. She is Editor-in-Chief of the Journal Computer Science Education (jointly with Laurie Murphy), is a UK National Teaching Fellow, a Senior Fellow of the UK Higher Education Academy and a Fellow of the Royal Society of Arts.

Ed Lazowska

*Bill & Melinda Gates Chair in Computer Science & Engineering, University of Washington
Director, University of Washington eScience Institute*

Ed Lazowska holds the Bill & Melinda Gates Chair in Computer Science & Engineering at the University of Washington. Lazowska received his A.B. from Brown University and his Ph.D. from the University of Toronto. His research and teaching concern the design, implementation, and analysis of high performance computing and communication systems. Twenty two Ph.D. students and twenty three Master's students have completed their degrees working with him. Lazowska is a Member of the National Academy of Engineering, a Fellow of the American Academy of Arts & Sciences, and a Fellow of ACM, IEEE, and AAAS.