Consortium for Computing Sciences in Colleges

23rd Annual
CCSC Eastern Conference

St. Joseph's College NEW YORK 1916

Patchogue, New York

Eastern Region

October 12-13, 2007

Conference Program

Conference is sponsored in cooperation with

acm

SIGCSE ACM Special Interest Group on Computer Science Education

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- Amruth Kumar, Ramapo College, NJ
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- Olly Gotel, Pace University, NY

Registration

- Victoria Hong, Chair, St. Joseph's College, NY
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- Eileen White-Jahn, St. Joseph's College, NY

Banquet and Catering

- Matthew Caputo, St. Joseph's College, NY

Local Arrangements

- Rebecca Patterson, St. Joseph's College, NY

CCSC Eastern 2008 Conference

October 10-11, 2008
Hood College, Frederick, MD
For more information contact:
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Dr. Gary Gillard (ggillard@verizon.net)
http://cs.hood.edu/ccsce08/

CCSC: EASTERN STEERING COMMITTEE

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Pat Woodworth, Ithaca College

A conference like this is not the work of a few individuals, but rather the cooperative efforts of many people over time. Therefore, we thank all those whose efforts made this possible. We thank the Conference Committee and the Steering Committee. We are especially grateful to Stephen Corbesero, our papers chair, and to George Benjamin for editing and compiling the proceedings. We thank the paper authors and their reviewers, the presenters and judges. We thank those who organized and conducted the programming competition, especially Bill McAllister and Tom Cortina.

We are also most grateful to the administration, faculty and staff of St. Joseph's College, for their support and assistance. We thank the Plant Staff, Secretarial Services and Scheduling. We are especially grateful to the Department of Institutional Advancement, which generously donated the tote bags, pens and some of the presenter, participant and student gifts. We also thank the Admissions Department for some presenter gifts and folders. Finally, we thank our dedicated IT staff, for their hard work and technical expertise.

We are grateful to our exhibitors and corporate sponsors, especially to Addison-Wesley, which contributed the Conference lanyards and to UPE (Upsilon Pi Epsilon), which provided the Student Poster Competition prizes.

CCSCE National Partners

The consortium is very happy to have the following as National Partners. If you have the opportunity, please thank them for their support of computing in teaching institutions. As National Partners they are invited to participate in regional conferences. Visit their representatives and express your gratitude.

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CCSCE-2007 Conference Program

Welcome to St. Joseph's College for the 23rd Consortium for Computing Sciences in College Eastern Regional Conference. We are delighted to offer you a variety of sessions, which feature an outstanding collection of papers, tutorials, panels and workshops. Our keynote and banquet speakers will certainly be informative and engaging. This year's program also includes a number of "Nifty Ideas" and "Lightning Talks", where you can gather practical classroom assignments, tools and resources. Faculty and student research will be presented throughout Friday afternoon's Poster Session.

In addition to the enriching Conference sessions, Long Island also offers many cultural and enjoyable opportunities. Take time to meet new people, visit the vineyards, beaches and towns "out east" near the fashionable "Hamptons", or to enjoy a show or concert in New York City. There's so much to do before, during and after the Conference. We hope you enjoy it as much as we enjoyed planning it.

KEYNOTE ADDRESS
MESSAGE HIDING USING STEGANOGRAPHY, AND FORENSIC APPROACHES FOR DISCOVERY

Bartholomew R. Mallio
Information Security Analyst
Rockefeller University, NY

Bartholomew R. Mallio is currently the IT Director of Operations at Cold Spring Harbor Laboratory, where (among other things) he helps to set the Laboratory's information security policy and standards, and serves as its primary incident handler. Cold Spring Harbor Laboratory is a basic research and educational institution, where over 300 scientists conduct groundbreaking research in cancer, neurobiology, plant genetics and bioinformatics. Prior to his work at Cold Spring Harbor Laboratory, Bart has served as the IT Director of the Boston Housing Authority, and in KPMG's Global Networks practice. Over the last 13 years he has provided network security solutions for his employers and consulting clients, writing policies, securing servers, performing security audits/penetration tests, and designing/deploying firewalls and intrusion detection systems. He feels that his involvement with the information technology field derives first-hand from a fascination with network security. In the early 1990's, he decided to leave the field of strategic planning and management consulting to pursue a more technical career after reading Clifford Stoll's computer security classic The Cuckoo's Egg. He first encountered steganography in the work The Codebreakers, by fellow Long Islander David Kahn, and has been fascinated with the problem of steganalysis ever since. His presentation will include a discussion of how message hiding is achieved and discovered as well as its importance for computer security and for computer science education.

BANQUET ADDRESS
ETHERNET IS THE ANSWER; WHAT IS THE QUESTION?

Bob Metcalfe
Polaris Venture Partners
Metcalfe@PolarisVentures.com

Bob Metcalfe invented Ethernet in 1973 and in 1979 founded 3Com Corporation to provide it. 3Com grew into the billions during the 1990s, and in 2006 over a quarter billion new Ethernet switch ports were shipped worldwide. Bob received the National Medal of Technology from President Bush in 2005 for leadership in the invention, standardization, and commercialization of Ethernet. More recently in May 2007, he was inducted into the National Inventors Hall of Fame for his contributions to the "welfare of mankind" and his promotion of "science and the useful arts".

Ethernet has been proliferating and evolving for over three decades and is today very little like the first one that Bob built with Dave Boggs at Xerox Parc in 1973. Ethernet's future is best summarized with five prepositions: up, into, across, over, and down. Metcalfe, who is now a venture capitalist in Boston, will explain his Ethernet prepositions and tell stories for as long as you can stand it.

About the Presenter:
Bob Metcalfe really needs no introduction; as one of the network pioneers, his contributions to the field of computing are well known. In addition to those mentioned above, he has also been recognized by numerous professional organizations and has received the ACM Grace Murray Hopper Award, the IEEE Alexander Graham Bell Award and IEEE Medal of Honor. He has been elected a fellow of the American Academy of Arts and Sciences and of the International Engineering Consortium.

CCSC: Eastern Schedule

Friday, October 12th, 2007

8:30- 5:30 Registration, Business and Technology Center (BT), Level B

9:00-5:45 Vendors, BT Level B and Level 1

9:00- 12:00 Pre-Conference Workshops

- Workshop 1: Novel Curricula and Tools, BT-Room B-14
- Workshop 2: Object Oriented Analysis, BT- Room B-11

12:00- 1:00 Lunch on your own

- SJC Cafeteria or see list of local restaurants included in your packet

1:00-2:15 Welcome to CCSC: Eastern 2007- Auditorium, O'Connor Hall

- **Opening Remarks – S. Jane Fritz, CCSCE Chairperson**
- **Welcome S. Elizabeth Hill, President of St. Joseph's College**

Keynote Speaker: Bart Mallio, Cold Spring Harbor Laboratory, "Message Hiding Using Steganography and Forensic Approaches for Discovery"

2:15-2:45 Break – BT Level 1

2:15- 5:45 Faculty and Student Poster Session- O'Connor Hall, Center Lobby
Student Posters will be judged from 2:15 until approximately 4:00. Posters will remain available for viewing throughout the Social.

Faculty Posters

"Using Eclipse in the Curriculum and Around the Globe", Olly Gotel and Christelle Scharff, Pace University

"Database Courseware with Security and Integrity Constraints", Mario Guimaraes and Meg Murray, Kennesaw State University

"Portable Open-source Source Software Tools", Robert Montante, Bloomsburg University of Pennsylvania

"Electronic Portfolios as Tools for Organizing Student Information", Ellen Tufano, St. John's University

"First Principles in Advanced Projects for Undergraduates", Salvador J. Gutiérrez-Martínez, SUNY Plattsburgh

"How To Incorporate A Favorite Holiday Song and A Popular Browser into an Analysis and Algorithms Course", Gerald Kruse, Juniata College

"Undergraduate Research Experience at Brookhaven National Laboratory in Development of Visualization Programs", Thomas J. Liu, Ph.D., New Jersey City University

"A Human-Computer Interaction Early Approach", John Wright, Juniata College

Graduate Student Posters

"Developing an Eclipse Plug-in for the JAY Language", Yevgeniy Bangiyev, Pace University

"Student Benefits from Participating in a Global Software Development Project", Veronica Portas, Pace University

Undergraduate Student Posters

"Design Knowledge: A Framework for Requirement Traceability", Nicole Ameche, University of California, Irvine

"Wireless Security vs. Utility", *Roubos Demetrios*, Ryan Show and Casler Shawn, Richard Stockton College of New Jersey

"Climatological Impacts of Extreme Naturally Occurring Fire Events, Associated with the Alaskan Summer of 2004 ", Jessica Ragazzi, St. Joseph's College, NY

"Turning the Commodore 64 into a Turing Machine", *William A. Katsak*, James Matta, Bloomsburg University

"A Comparison of an STL and User-written Priority Queue Class", Nicholas Church, Marcus Mundy, Marc Zubricky, Cabrini College

Concurrent Sessions – in the Business and Technology Center (BT)
2:45-4:00 Concurrent Session 1

Session 1A- Paper Session: **Assessment,** Room BT 1-12
Session Chair: Frances Bailie, Iona College

- "Quality-Based Assessment of Papers and Projects in Computer Science", Suzanne Dietrich, Arizona State University, Leah Folkestat, Digital Learning Group
- "Building Bridges: The 2006 Summer Institute", Lori Scarlatos, Stony Brook University, Susan Loews, Columbia University, Elizabeth Sklar, Samir Chopra, Simon Parsons, Ira Rudowsky, Heidi Holder, Brooklyn College
- "Computing For The 21st Century", Ernie Giangrande Jr., Wingate University

Session 1B- Paper Session: **Software Tools,** Room BT 2-8
Session Chair: Bill McAllister, St. Joseph's College

- "DeSymbol: An Interpretive Tool for Symbolic Logic", Darren Provine, Nancy Tinkham, Rowan University
- "JVMVIEWER: An Interactive Bytecode Interpreter For Java", Carl Bredlau, Montclair State University
- "Detecting Outsourced Student Programming Assignments", Bruce Elenbogen, Naeem Seliya, University of Michigan - Dearborn

Session 1C- Tutorial Session: **Discrete Mathematics,** (Computer Lab) Room BT B-14
Session Chair: Jimmy Chen, Salt Lake Community College

- "Nifty Examples in Discrete Mathematics", William Marion, Valparaiso University, Peter Henderson, Butler University

Session 1D- Vendor Presentation, **Turingscraft**, Room BT 1-7 "We Checked 3 Million Programming HWs Last Year, How Many Did You Check?" , David Arnow, Turingscraft

4:00- 4:40 Break – BT – Level 1

4:30-5:45 Concurrent Session 2

Session 2A- Paper Session: **Databases,** Room BT 1-12
Session Chair: Richard Scorce, St. John's University

- "Expanding The Database Curriculum Through Modules", Meg Murray, Mario Guimaraes, Kennesaw State University
- "Implementing a Temporal Data Management System Within Oracle", Ramon Mata-Toledo, James Madison University, Morgan Monger, James Madison University Alumni and Datatel, Inc.
- "Teaching Database Systems with Web Applications Team Projects", Yadong Bi, John Beidler, University of Scranton

Session 2B- Tutorial Session: Scheme/Java, (Computer Lab) BT B-14
Session Chair: Thomas Cortina, Carnegie Mellon University

- "Teach Scheme, Reach Java: Introducing Object-Oriented Programming Without Drowning in Syntax", Stephen Bloch, Adelphi University

Session 2C-Tutorial Session: Networking, (Computer Lab) BT 1-15 (ITGuru)
Session Chair: Suvineetha Herath Richard Stocton College of New Jersey

- "Simulating Network and Security Issues", Victor A. Clincy, Kennesaw State University

Session 2D- Invited Presentation: **3D Modeling,** Room BT 2-8
Session Chair: Karen Anewalt, University of Mary Washington

- "Integrating New Digital Technology Into the Humanities: 3D Modeling for Archeology Art History and Urban Planning", Peter K. Allen, Columbia University

5:45- 6:15 Social – O'Connor Hall, Center Lobby

6:30- 8:00 Banquet – Mc Gann Conference Center, O' Connor Hall- 3rd Floor

8 PM Banquet Speaker: Bob Metcalf, The Ethernet is the Answer: What is the Question?

Saturday, October 13th, 2007

7:30- 12:00 Registration, Business and Technology Center, Level B

7:30– 9:00 Continental Breakfast, Business and Technology Center, Level 1

8:30- 9:30 Programming Competition
Registration and Practice, Business and Technology Center, Level B

9:45- 12:45 Programming Competition, BT Rooms B-6, B-10, B-11

8:30-9:45 Concurrent Session 3

Session 3A- Paper Session: **Interesting Approaches,** Room BT 1-12
Session Chair: Don Tobin, Fairmont State

- "Why Should I Care?" Making Programming Assignments Relevant For Non-Majors, Stephen Davies, University of Mary Washington
- "Making CS0 Fun: An Active Learning Approach Using Toys, Games, and Alice", Karen Anewalt, University of Mary Washington
- "Using Lyrics And Music To Reinforce Concepts", John Dougherty, Haverford College

Session 3B- Panel Session: **Mobile Labs,** Room BT 2-8
Session Chair: John Beidler, University of Scranton

- "Mobile Instructional Laboratory Experiments and Their Use in Computing Sciences" Stefan A Robila (moderator), Montclair State University, Bert G. Wachsmuth, Seton Hall University, Christelle Scharff, Pace University, Jeffrey L. Popyack, Drexel University

Session 3C- Paper and Nifty Ideas**: Motivational and "Nifty" Tools and Activities,** Room BT 2-10
Session Chair: Elizabeth Adams, James Madison University

- "Problem Solving Through Programming: Motivating the Non-Programming", Benjamin Ring, John Giordano, J. Scott Ransbottom, United States Military Academy
- "WINRDBI: A Nifty Tool for Understanding Relational Database Query Languages", Suzanne Dietrich, Arizona State University
- "Projects that Make Introduction to Programming Exciting and Inviting for Non-majors", Irena Pevac, Central Connecticut State University

Session 3D- Vendor Presentation: **Eduware,** Room BT 1-7,**(8:30-9:15)**, "Hands On Fun With Some Truly Interactive Classroom Activities", Justin Spradely, Eduware

Session 3E – Vendor Presentation, **Microsoft**, (Computer Lab)Room BT B-14, **(9:15-10)**, "Preparing the Complete Student", Alfred Thompson, Microsoft Corporation

9:45-10:15 Break – **Special Lightning Talk Session** – Room BT 1-7
Lightning Talks

- "Equal Grade for Equal Work", Jill Gerhardt
- "Human Robot Assignment for CS0 and CS1", Ernie Giangrande
- "Open Office in an Introduction to Computing Course", Robert Workman and Lisa Lancor
- "Number Theory in CS" Salvador Gutierrez

10:15-11:30 Concurrent Session 4

Session 4A- Paper Session: **Curriculum,** Room BT 1-12
Session Chair: Lori Scarlatos, SUNY Stony Brook

- "An Interdisciplinary Course on Artificial Intelligence Designed for a Liberal Arts Curriculum", Vincent Cicirello, The Richard Stockton College of New Jersey
- "A New, Software Design Based, Financially Responsible Computer Science Major at a Small Liberal Arts College", David Voorhees, Le Moyne College
- "Teaching Distributed Computing In The Undergraduate College CS Curriculum", Homma Farian, Kirk M. Anne, SUNY Geneseo, Matthew Haas, Corning community College

Session 4B- Tutorial Session: **Consumer Privacy**, Room BT 2-8
Session Chair: Richard Scorce, St. John's University

- "Integrating Issues of Consumer Privacy with Mobile Computing into Computer Science Curricula", James Lawler and John Molluzzo, Pace University

Session 4C- Tutorial Session: **Robotics**, (Computer Lab) Room BT B-14
Session Chair: Debra Wakefield, Suffolk County Community College

- "So Many Robots, So Little Time", Susan Imberman, and Roberta Klibaner, College of Staten Island

Session 4D- Tutorial Session: **K-12 Model Curriculum**, Room BT 2-10
Session Chair: Peter Henderson, Butler University

- "Supporting K-12 Computer Science Education", Anita Verno, Bergen Community College and Curriculum Chair, Computer Science Teachers Association (CSTA)

Session 4E- Vendor Presentation: **IBM SOA / WEB Services**, Room BT 1-7
"Easing Challenges in Embracing the On-Demand World", Gary Dischner, IBM, and Christelle Scharff, Pace University

12:00-1:15 Concurrent Session 5

Session 5A - Paper Session: **Graphics and Visualization,** Room BT 1-12
Session Chair: Catherine Ricardo, Iona College

- Towards An Effective Low-Cost Virtual Reality Display System For Education, Daniel Cliburn, University of the Pacific
- Teaching the Computer Science of Computer Games, Brendan Burns, Union College
- A Detail + Context Approach to Visualize Function Calls, Xiaoming Wei, Iona College

Session 5B- Tutorial Session: **CS Unplugged,** Room BT 2-8
Session Chair: Elizabeth Chang, Hood College

- "Computer Science Unplugged", Peter Henderson, Butler University

Session 5C- Tutorial Session: **jGrasp,** (Computer Lab) Room BT B-14
Session Chair: John Beidler, University of Scranton

- "jGRASP: An Integrated Development Environment with Visualizations for Teaching Java in CS1, CS2, and Beyond", James H. Cross II, and T. Dean Hendrix, Auburn University

Session 5D- Tutorial: **AP Gridworld Case Study**, Room BT 2-10
Session Chair: Gary Guillard, Hood College

- The New AP Gridworld Case Study, Kathleen Larson, Marist College

1:30 -2:30 Conference Luncheon and Awards
Mc Gann Conference Center, O'Connor Hall, 3rd Floor
2:45- 3:45 CCSC Eastern Board Meeting, BT 1-7

2:45- 5:45 Post Conference Workshops and Panel

- **Workshop 3**: Embedded Systems and Robotics, (Computer Lab) Room BT B-14
- **Workshop 4**: Invited SIGCSE Presentation- Introduction to Alice, Room BT B-6
- **Panel:** Computing Workforce Issues – the Interface Between K-12 and the Colleges BT 1-12

Workshop Descriptions
Friday, 9:00-12:00

Workshop 1: Novel Curricula and Tools for Java in CS1 Courses
Presenters: Glenn D. Blank, Lehigh University
Robert Moll, University of Massachusetts – Amherst
This workshop introduces novel curricula and tools for Java. Dr. Blank demonstrates how to start a course "design-first," using web-based multimedia and a procedure to develop a class diagram from a problem description. A UML tool provides feedback and generates skeletons of Java source code from class diagrams. Students then use DrJava to implement and test them. Dr. Moll introduces *iJava*, an interactive, web-based textbook. On each page, students enter code and get immediate feedback. Thus the cycle has students reading a few paragraphs of text, then interacting with Java to consolidate their understanding of the material.

Workshop 2: Object Oriented Analysis
Presenter: Barbara Zimmerman, Villanova University
Object Oriented (OO) programming has been a staple of program design and implementation prompted by the rise of languages such as Java and C++. The use of Object Orientation in systems analysis can push back the use of OO to an earlier stage of project development. Using OO in analysis can lead seamlessly through the entire process from system analysis and system design into individual class designs and programming. This workshop will focus on OO Analysis from the first stages of context boundary drawing through candidate class selections, attribute identification and candidate method definition.

Workshop Descriptions
Saturday, 2:45-5:45

Workshop 3: Embedded Systems and Robotics
Presenter: Greg Pleva, Southern Oregon University
This workshop will demonstrate the content of a quarter length course that incorporates elements of both embedded systems and robotics. Attendees will get a hands-on introduction to such topics as basic electronics, assembling electronic components and electronic circuits, programming a computer chip with an embedded language specific to that chip and then using that chip and circuit board to give functionality to a small, wheeled robot. We will work through a few projects using the Stampworks Basic Stamp 2 computer chip, the PBasic programming software and the Boe-Bot robot all made by Parallex Inc.

Workshop 4: Introduction to Alice
Presenter: Stephen Cooper, Saint Joseph's University
This introductory workshop, designed for instructors with minimal to no prior experience with Alice, offers hands-on experience programming with Alice. Alice is a powerful program visualization tool enabling students to "see" objects and work with object-oriented programming. Participants will learn how to use Alice to build virtual worlds and how to use this approach in introductory-level computing courses (introductory programming for majors, programming for non-majors, computer literacy, etc.) at the college or high-school level.

Panel: Computing Workforce Issues – "The Interface Between K-12 and the Colleges"
Moderator: Herbert Bernstein, Dowling College

We are grateful to our exhibitors (MIT Press and Eduware) and our National Partners shown below. Please thank them for their contributions to computing education.